

COASTAL SECURITY IN INDIA: TWELVE YEARS AFTER '26/11'

Captain Himadri Das

01 December 2020

INTRODUCTION

It has been twelve years since the heinous attack on Mumbai on 26 November 2020. While 'coastal border management' was institutionalised in 2004 with the establishment of the Department of Border Management (DoBM) in the Ministry of Home Affairs (MHA), the management of coastal (and maritime) security in India underwent a paradigm shift after the '26/11' attacks. Broadly, the coastal security construct after '26/11' was based on a Whole-of-Government approach. This included allocation of coastal security responsibilities to maritime security agencies and setting-up of institutional mechanisms for policy and operational coordination amongst all stakeholders across multiple levels of governance. Major initiatives were focused on capacity augmentation and capability development of maritime security agencies, and developing Maritime Domain Awareness (MDA). Community-engagement also emerged as an area of renewed thrust.

The Prime Minister during his Independence Day speech from the ramparts of the Red Fort on 15 August 2020 made several references to coastal areas from both a development and a security perspective.¹ From a development perspective, the Prime Minister highlighted the importance of the Indian coast in world trade and stated that the Government will now focus on development of a four-lane road across the entire coast as a follow-on to the port-led development project [SAGARMALA]. He also highlighted the focus of the Government on the development of certain identified islands; the inauguration of the submarine optical cable to the Andaman and Nicobar Islands and the plan to connect the Lakshadweep Islands were cited as examples on the Government's focus on island development. From a security perspective, he emphasised the

¹ "PM's address to the Nation from the ramparts of the Red Fort," Prime Minister's Office, last modified August 15, 2020, https://www.pmindia.gov.in/en/news_updates/pms-address-to-the-nation-from-the-ramparts-of-the-red-fort/

importance of border and coastal infrastructure in national security and also highlighted the Government's plan to expand the National Cadet Corps (NCC) in border and coastal areas.² The Prime Minister's multiple references to the coast in his Independence Day speech brings out two clear points: first, the importance of the coast and islands from a trade and development perspective, and second, the importance of security as a facilitator for trade and development. The inextricability of security and growth, albeit from a larger regional perspective, has already been articulated in the vision of SAGAR [Security And Growth for All in the Region].

Since '26/11' there has been no incident of maritime terrorism; however, the threat exists as is evident from reports about the training of certain terror groups in underwater attacks to carry out *Samundari Jihad* (seaborne jihad) against India.³ The Chief of the Naval Staff (CNS) while reviewing the operational readiness of the Indian Navy on 22 October 2020 exhorted the Indian Navy to maintain high levels of readiness, and also reiterated the need for force protection against terrorists and other aspects related to asymmetric warfare.⁴

As regards other maritime crimes, an analysis of the *Monthly Maritime Security Update* published by the Information Fusion Centre – Indian Ocean Region (IFC-IOR) this year highlights the prevalence of other maritime crimes in several states:⁵

- Armed robbery in some ports in Gujarat and Andhra Pradesh;
- Illegal fishing off Odisha, Tamil Nadu, Andaman and Nicobar Islands, Karnataka, Andhra Pradesh, Maharashtra and Gujarat;
- Poaching of Sea Cucumbers from Lakshadweep and Minicoy Islands and Tamil Nadu;
- Drug trafficking off Gujarat, Tamil Nadu and Maharashtra;
- Smuggling of gold (Tamil Nadu); red sandalwood (Gujarat and Maharashtra); cigarettes (Maharashtra); fuel (Andhra Pradesh and Maharashtra); *Tendu* leaves (Tamil Nadu); textiles (West Bengal); turmeric (Tamil Nadu); and,

² See also: Himadri Das, "Expansion of the National Cadet Corps in Coastal Districts: Strengthening Local Capacities for Maritime Security," 06 October 2020, NMF Website. <https://maritimeindia.org/wp-content/uploads/2020/10/EXPANSION-OF-THE-NATIONAL-CADET-CORPS-IN-COASTAL-DISTRICTS-CAPT-HIMADRI-DAS.pdf>

³ Press Trust of India, "Pakistan based terror groups training cadre for "Samundari Jihad": Government", *The Economic Times*, 02 January 2020. <https://economictimes.indiatimes.com/news/defence/pakistan-based-terror-groups-training-cadre-for-samundari-jihad-government/articleshow/67347936.cms?from=mdr>

⁴ Ministry of Defence, 'CNS Reviews Operational Readiness at Sea', Press Information Bureau, 22 October 2020. <https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=1666853>

⁵ Based on the reports of the Information Fusion Centre-Indian Ocean Region (IFC-IOR) monthly reports from January 2020 till September 2020.

- Illegal migration to Sri Lanka.

Overall, maritime crime figures in India are near insignificant, and this augurs well for maritime and coastal security. However, considering the inevitable nexus between criminal elements and terrorists, and past experience, there is no room for complacency. Maritime crimes in all its forms need to be effectively countered in their nascence rather than wait for such crimes to manifest itself themselves in more insidious ways. This article will now examine some of the major developments pertaining to coastal security in the past year. Considering the federal governance structure, which involves both the Central Government and State Governments, the developments have been categorised; accordingly, however, there are some overlaps.

DEVELOPMENTS AT THE CENTRE

Public Accounts Committee Recommendations

The Public Accounts Committee (PAC) in a January 2020 report on implementation of reports of various ministries *inter alia* made the following recommendations with respect to the Coast Guard and Customs:

- Placing an order for a second phase of the Coastal Surveillance Network (CSN) of radar sensors comprising 38 radars.⁶
- Enactment of suitable laws to empower and strengthen the Coast Guard.⁷
- The National Committee on Strengthening Maritime and Coastal Security (NCSCMS) takes up issues, such as tracking of ships; demarcation of responsibilities between ministries/ departments and agencies concerned with coastal security to ensure effective coordination; and, enactment of Central Marine Regulation Fisheries Act.⁸
- Providing the PAC with the status of the cadre review to augment operational requirements of the Customs at air/ seaports and steps taken in this regard.⁹

⁶ Public Accounts Committee, *Implementation of Recommendations of PAC by Ministries of Finance, Defence and Women and Child Development* (New Delhi: Lok Sabha, 2020), 41-42.

http://164.100.47.193/lssccommittee/Public%20Accounts/17_Public_Accounts_5.pdf

⁷ Public Accounts Committee, *Implementation of Recommendations of PAC by Ministries of Finance, Defence and Women and Child Development*, 42.

⁸ Public Accounts Committee, *Implementation of Recommendations of PAC by Ministries of Finance, Defence and Women and Child Development*, 43.

⁹ Public Accounts Committee, *Implementation of Recommendations of PAC by Ministries of Finance, Defence and Women and Child Development*, 26.

The recommendations pertaining to the second phase of CSN, strengthening the legal framework, and tracking devices for fishing vessels have been completed, and a central legislation for fisheries management is being progressed. These will be covered in greater detail in subsequent sections.

Reorganisation of the Ministry of Defence

In December 2019, the Department of Military Affairs (DMA), or the *Sainya Karya Vibhag*, was created in the Ministry of Defence (MoD). *Inter alia* the subjects allocated to the DMA include “*promoting of jointness in procurement, training and staffing*,” “*optimal utilisation of resources by bringing about jointness in operations, including through establishment of joint/ theatre commands*,” and “*promoting use of indigenous equipment*.”¹⁰ General Bipin Rawat assumed responsibility as Chief of Defence Staff (CDS) and Secretary, DMA on 01 January 2020.¹¹ While previously the Department of Defence (DoD), or the *Raksha Vibhag*, oversaw the functioning of both the Indian Navy and Coast Guard, following the creation of the DMA, only the Coast Guard continues to function under the DoD.¹² Considering the designated responsibilities of the Indian Navy and Coast Guard, in effect, both DMA and DoD are stakeholders in the coastal security construct necessitating further coordination between the two departments.

In February 2020, the CDS in an interaction with the media stated that an Indian Ocean-centered Peninsular Command could be formed by end 2021.¹³ He also highlighted that the “*security of peninsular India should be the responsibility of one Commander*.” Subsequently, the Chief of the Army Staff speaking at the College of Defence Management on 21 October 2020 highlighted that the “*formation of Integrated Theatre Commands to synergise the capabilities and combat potential of the three services during war and peace*” was the way forward.¹⁴ Notably, the distinction between war and

¹⁰ Ministry of Defence, “Creation of New Department of Military Affairs”, Press Information Bureau, 03 February 2020. <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1601813>

¹¹ Ministry of Defence, “General Bipin Rawat assumes charge of first Chief of Defence Staff; Vows to create more synergy between the Armed Forces”, Press Information Bureau, 01 January 2020. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1598155>

¹² “About the Department,” Ministry of Defence, accessed October 19, 2020, <https://www.mod.gov.in/dod/>.

¹³ Dinakar Peri, “Peninsular command by next year end, theatre commands by 2022: Gen. Rawat”, *The Hindu*, 17 February 2020. <https://www.thehindu.com/news/national/peninsular-command-by-next-year-end-theatre-commands-by-2022-gen-rawat/article30840974.ece>

¹⁴ Ministry of Defence, “Chief of Army Staff Visits College of Defence Management and Bison Division, Secunderabad Cantonment”, Press Information Bureau, 21 October 2020. <https://pib.nic.in/PressReleaseDetail.aspx?PRID=1666477>

peace, and between state and non-state actors is increasingly blurring, and in the maritime context, increased synergy between all maritime security agencies at all times is a *sine qua non* for effective maritime security. On 22 October 2020, the CNS highlighted that “*tri-service synergy and coordination has peaked with establishment of the DMA as was visibly demonstrated in the joint response of the three Services to recent events.*”¹⁵

The management of maritime security in India has been an evolutionary process driven by events and other developments. The raising of the Peninsular Command too is likely to have an effect on the management of maritime and coastal security in India. Considering the fact that two key elements of the coastal security construct viz. the Coast Guard and the State Marine Police (SMP) function under the DoD and states respectively, due consideration needs to be given to ways and means to achieve the overall ends of ‘theaterisation’, and concomitantly those for maritime security.

Primary amongst those are the requirements for optimal utilisation of all available resources, ‘jointness’, and the enduring need for unitary command and control in military operations. In this regard, Air Vice Marshal Manmohan Bahadur (Retd.), Additional Director General, Centre for Airpower Studies, has opined that “*the Coast Guard too should have been placed under the CDS to ensure seamless security of our long coastline and huge EEZ.*”¹⁶

Considering the coastal security responsibilities of the Coast Guard, in the past there have also been recommendations to shift the Coast Guard to the MHA akin to the model for other land-based border guarding forces. As per media reports, in May 2018, a committee of DGPs, considering the need for greater coordination between the Coast Guard and other central agencies under the MHA, had suggested that the Coast Guard should be brought under the MHA.¹⁷ This was however rejected by the MoD on account of the need for greater coordination between the Indian Navy and the Coast Guard.¹⁸ Notably, even at the time of raising of the

¹⁵ Ministry of Defence, “CNS Reviews Operational Readiness at Sea”, Press Information Bureau, 22 October 2020. <https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=1666853>

¹⁶ Air Vice Marshal Manmohan Bahadur (Retd.), “Positives & negatives, let’s all make it work”, *The Tribune*, 29 December 2019. <https://www.tribuneindia.com/news/features/positives-negatives-let%E2%80%99s-all-make-it-work-18623>

¹⁷ Dalip Singh, “Citing synergy, DGPs recommend Coast Guard under Home Ministry”, *The Economic Times*, 23 May 2018. <https://economictimes.indiatimes.com/news/defence/citing-synergy-dgps-recommend-coast-guard-under-home-ministry/articleshow/64278752.cms>

¹⁸ Ajit Kumar Dubey, “Defence Ministry rejects proposal to cede Indian Coast Guard to MHA”, *India Today*, 24 May 2018. <https://www.indiatoday.in/india/story/defence-ministry-rejects-proposal-to-cede-indian-coast-guard-to-mha-1240127-2018-05-24>

Coast Guard, there were diverse views on which ministry the Coast Guard would need to be placed under.

The creation of the DMA, while retaining the Coast Guard under the DoD, has added a new dimension to management of maritime and coastal security. Considering the diversity of views on the most apt organisational structure for effectively leveraging the force to meet national interests, this may well need further reflection.

Fisheries Management

On 10 September 2020, the Prime Minister digitally launched the PRADHAN MANTRI MATSYA SAMPADA YOJANA (PMMSY). The PMMSY with a projected investment of Rs 20,050 Crore (Rupees 200.5 Billion) over a five year period—the highest ever in the fisheries sector—is part of the *Atmanirbhar* package.¹⁹ While the PMMSY is essentially a scheme to “bring about Blue Revolution through sustainable and responsible development of the fisheries sector in India,” its aims and objectives also include physical security and robust fisheries management/ regulatory framework.²⁰

The project also aims to establish linkages and convergence with other schemes, including safety- and security-related projects in the fisheries sector, such as with MHA for fisheries Monitoring, Control and Surveillance (MCS) related activities, and the Department of Space for satellite-based communication/ tracking devices such as transponders for the fisheries sector.²¹ Further, the scheme includes upgrading of fishing harbours and landing centres, development of ‘integrated modern coastal fishing villages’ and setting-up of fisheries extension services in the form of 3,447 *Sagar Mitra*.²² Earlier, in January 2020, the Prime Minister had handed over the keys of deep sea fishing vessels and transponders to select farmers of Tamil Nadu.²³

¹⁹ Prime Minister’s Office, “PM to launch Pradhan Mantri Matsya Sampada Yojana on 10th September”, Press Information Bureau, 09 September 2020. <https://pib.gov.in/PressReleasePage.aspx?PRID=1652573>

²⁰ Department of Fisheries, *Pradhan Mantri Matsya Sampada Yojana* (New Delhi: Department of Fisheries, 2020), 3-5. http://dof.gov.in/sites/default/files/2020-07/Book_PMMSY_Framework_0.pdf

²¹ Department of Fisheries, *Pradhan Mantri Matsya Sampada Yojana*, 9-10.

²² Ministry of Fisheries, Animal Husbandry and Dairying, “Government to register 3,477 “Sagar Mitra” in coastal fisher villages and encourage Fish Farmers Producer Organizations (FFPOs): Shri Giriraj Singh”, Press Information Bureau, 26 May 2020. <https://pib.gov.in/PressReleasePage.aspx?PRID=1626941>

²³ Ministry of Agriculture and Farmers Welfare, “PM releases 3rd instalment of Rs 2000 to 6 crore beneficiaries under PM KISAN”, Press Information Bureau, 02 January 2020. <https://pib.gov.in/PressReleasePage.aspx?PRID=1598319>

To strengthen the legal framework, the National Marine Fisheries (Regulation and Management) Bill, 2020 was listed for introduction in the Budget Session of Parliament in 2020.²⁴ The objectives of the bill *inter alia* include regulation of fishing in the Exclusive Economic Zone (EEZ) and promotion of safety and security of fishers at sea. Enactment of the bill, in accordance with its objectives, is likely to strengthen safety and security in a sector, which so far has largely been regulated through state legislations. Concomitantly, marine fisheries regulation legislations in respective states too need to be strengthened and are accordingly being progressed by some states.

The fisheries sector has been one of the areas of focus since the ‘26/11’ incident. The dovetailing of safety- and security-requirements in the PMMSY and in the draft National Fisheries Policy, 2020, the development of a regulatory framework for fishing in the EEZ, and the operationalisation of the transponder system are some important milestones in the quest for strengthening safety and security in the fisheries sector.²⁵ The effective utilisation of the PMMSY will be key to strengthening fisheries MCS and in a federal governance framework, will need the attention of both central and state agencies. In addition to the central initiatives, states too have taken measures to strengthen fisheries MCS. Some of the state-level initiatives in the fisheries sector, such as those related to strengthening MCS, are covered subsequently.

Maritime Domain Awareness

MDA has been a focus area after the ‘26/11’ attack. Some of the major initiatives have been the establishment of the CSN, the National Automatic Identification System (NAIS) chain and the National Command Control Communication and Intelligence (NC3I) Network. Considering the large number of fishing vessels, the absence of a tracking system, complicates the identification problem for security agencies. Accordingly, one of the areas of focus has been the development of a suitable system for tracking of smaller vessels which are not mandated to be fitted with the AIS system.

²⁴ “Parliament Session Alert Budget Session: January 31, 2020–April 3, 2020”, PRS Legislative Research, accessed October 21, 2020,
<https://www.prsindia.org/sites/default/files/Parliament%20Session%20Alert%20Budget%20Session%202020.pdf>

²⁵ “National Fisheries Policy,” National Fisheries Development Board, accessed November 24, 2020,
http://nfdb.gov.in/PDF/National_Fisheries_Policy_2020.pdf

After successful Proof-of-Concept trials by the Indian Navy and Indian Space Research Organisation (ISRO) of a satellite-based tracking system using GSAT-6 satellite, and subsequent successful field trials, 4,997 mechanised boats in Tamil Nadu would now be fitted with the indigenously developed satellite-based transponder system.²⁶ This development marks the culmination of a long process of development of an indigenous solution to address gaps in domain awareness. Considering the fact that India has close to three lakh (0.3 million) fishing boats of various types, the operationalisation of the tracking system by Tamil Nadu is the proverbial drop in the ocean. Consequently, for the system to be exploited effectively, there is a need for implementation of the system on a pan-Indian basis.

Subsequent to the '26/11' incident, the CSN, comprising 46 radar stations was established by the Coast Guard for electronic surveillance; this included 10 radars in the island territories (six in Lakshadweep and Minicoy Islands and four in Andaman and Nicobar Islands).²⁷ On 21 February 2017, the Defence Acquisition Council sanctioned Phase II of the CSN project at a cost of Rs 800 crore (Rs 8,000 million).²⁸ CSN Phase II comprises 38 additional static radar stations, eight Mobile Surveillance Systems (MSS), and integration of Vessel Traffic Management Systems (VTMS) of Gulf of Kutch and Gulf of Khambat.²⁹ In February 2020, M/s Bharat Electronics Limited (BEL) signed a contract with the MoD, to establish Phase-II of the CSN.³⁰ When implemented, the CSN will double the radar coverage along the Indian coast. The expansion of the CSN along-with the implementation of the tracking system for fishing vessels has the potential to significantly improve MDA.

Presently, based on the authorisation/ license issued by the Department of Defence Production, BEL has set-up similar Coastal Surveillance Radar Systems (CSRS) in several friendly foreign

²⁶ SV Krishna Chaitanya, "Govt to fit transponders on 5K fishing vessels", *The New Indian Express*, 16 February 2020. <https://www.newindianexpress.com/states/tamil-nadu/2020/feb/16/govt-to-fit-transponders-on-5k-fishing-vessels-2104026.html>

²⁷ Atul Kumar, "Sea to Shore," Force, accessed November 24, 2020, <http://forceindia.net/feature-report/sea-to-shore/>

²⁸ Express News Service, "Government approves 800 Crore for coastal security surveillance", *The New Indian Express*, 21 February 2017. <https://www.newindianexpress.com/nation/2017/feb/21/government-approves-800-crore-for-coastal-security-surveillance-1573168.html>

²⁹ "Coastal Security," Indian Coast Guard, https://indiancoastguard.gov.in/content/1727_3_CosstalSecurity.aspx, accessed November 06, 2020; Express News Service, 'Government approves 800 Crore for coastal security surveillance'

³⁰ Indo-Asian News Service, "BEL to enhance Indian coastal surveillance system," Outlook, last updated February 10, 2020, <https://www.outlookindia.com/newscroll/bel-to-enhance-indian-coastal-surveillance-system/1730386>

countries.³¹ Thus, the indigenous capabilities developed for coastal security have not only contributed towards strengthening coastal security in India, but also expanded the Defence Industrial Base and facilitated implementation of the SAGAR vision.

Coastal mapping has been undertaken by states towards improving awareness about coastal areas. ISRO in collaboration with the West Bengal State Police has also developed Coastal Information System with the dual aims of creating a digital database and creating a framework for the visualisation and analysis of coastal geospatial data.³² Such customised systems could be emulated by other states as well to improve domain awareness.

A strong enforcement mechanism to prevent misuse of systems that contributes to MDA is essential for strengthening MCS and for precluding wasteful operational effort for investigation of anomalous transmissions. In a related development, based on concerns raised by security agencies regarding the use of non-standard AIS systems onboard some fishing vessels in Kerala, the Customs Department issued show-cause notices to boat owners for possible offences under Section 112 (s) (2) of the Customs Act, 1962.³³ This also highlights the need for a legal basis for carriage of systems, which contribute towards developing MDA.

Coast Guard: Capability Development

On 05 December 2019 the MoD, through a gazette notification, empowered members of the Coast Guard to address maritime crimes within the maritime zones of India.³⁴ Earlier, in 2016, a PAC report on the Coast Guard had highlighted certain issues with regard to the legal framework for maritime law enforcement by the Coast Guard.³⁵ While the Coast Guard was hitherto empowered under particular sections of certain domestic legislations, this notification

³¹ Manu Pubby, “India’s plan to set up radar grid to monitor Indian Ocean traffic faces stumble”, *The Economic Times*, 18 March 2015. <https://economictimes.indiatimes.com/news/politics-and-nation/indias-plan-to-set-up-radar-grid-to-monitor-indian-ocean-traffic-faces-stumble/articleshow/46602855.cms>; Ministry of Defence, ‘Make in India in Defence Sector’, Press Information Bureau, 04 March 2020. <https://pib.nic.in/PressReleasePage.aspx?PRID=1605126>

³² “West Bengal Coastal Information System,” Indian Space Research Organisation, accessed November 01, 2020, https://bhuvan-app1.nrsc.gov.in/coastal_home/coastal.php,

³³ Toby Anthony, “Customs cracks down on fishing boats with Chinese tracking devices”, *The New Indian Express*, 24 March 2020. <https://www.newindianexpress.com/cities/kochi/2020/mar/24/customs-cracks-down-on-fishing-boats-with-chinese-tracking-devices-2120754.html>

³⁴ “The Gazette of India (Extraordinary) Part II-Section 4 No 12/ SRO 16(E) dated 05 December 2019,” *The Gazette of India*, accessed November 28, 2020, <http://egazette.nic.in>

³⁵ Public Accounts Committee, *21st Report: Role and Functioning of the Indian Coast Guard* (New Delhi: Lok Sabha Secretariat, 2015), 96-97. http://164.100.47.193/lsscommittee/Public%20Accounts/16_Public_Accounts_21.pdf

caters for enforcement of *any* central act. This notification significantly augments the enforcement jurisdiction of the Coast Guard across all of India's maritime zones, which are the legislated areas of responsibility of the Coast Guard.

After the '26/11' incident the Coast Guard has witnessed an exponential growth in its capacity - both afloat and ashore. In a short span after the '26/11' incident, the Coast Guard has almost doubled its capacity.³⁶ In other words, the Coast Guard now has double the number of assets to ensure the security of maritime zones of India than it had twelve years ago when the present construct of coastal security was set-up as a response to an unprecedented event. Notably, an overwhelming majority of the ships and craft in the Coast Guard inventory have been built in Indian shipyards. The Coast Guard—now one of the largest in the world—is also actively progressing its 'Vision 2025' of having a fleet of about 200 ships/ craft and 100 aircraft. Towards further capacity development, the Coast Guard is also in talks with the Department of Telecommunication for allocation of dedicated satellite bandwidth to meet its operational requirements.³⁷

Considering the augmented capacity and India's maritime security interests, which extend from the Indian coast to the wide expanse of the Indo-Pacific, the Coast Guard has a key role, particularly in the Indian maritime zones. This is especially relevant considering the limited capacity of the State Marine Police (SMP) on the one hand, and the increasing role of the Indian Navy in the wider Indo-Pacific in accordance with the SAGAR vision on the other.

Advancing Maritime and Coastal Security Studies

During the Monsoon Session of Parliament earlier this year, the Rashtriya Raksha University (RRU) Act, 2020 was enacted.³⁸ The RRU, located at Gandhinagar, is an institution of national

³⁶ Surface Units: 65 in 2008 to 111 in 2019; Air Establishments: seven in 2008 to nine in 2019; Stations: 22 in 2008 to 42 in 2019; District Headquarters: 11 in 2008 to 15 in 2019; Regional HQ: three in 2008 to five in 2019; and, establishment of Coast Guard Commanders for Eastern Seaboard and Western Seaboard.

³⁷ Ministry of Defence, "The OPV launched is the sixth in the series of seven OPV projects being built by M/s L&T Shipbuilding under the 'Make in India' policy", 27 Feb 2020. <https://pib.nic.in/PressReleaseDetail.aspx?PRID=1604509>; Indo-Asian News Service, 'Indian Coast Guard in talks with DoT for satellite bandwidth', *Outlook*, last updated January 16, 2020, <https://www.outlookindia.com/newscroll/indian-coast-guard-in-talks-with-dot-for-satellite-bandwidth/1709962>

³⁸ Ministry of Parliamentary Affairs, "The Monsoon Session 2020 of Parliament Concludes", Press Information Bureau, 24 September 2020. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1658625>

importance with a focus on policing including coastal policing, security, law enforcement, etc.³⁹ Likewise, NALSAR [National Academy of Legal Studies and Research] University, Hyderabad and Centre for Human Security Studies (CHSS), a Hyderabad based think-tank on internal and external affairs signed a Memorandum of Understanding in June 2020 *inter alia* to work together in advancing academics and research including in coastal and maritime security and related laws.⁴⁰ The focus on coastal policing and security laws by premier academic institutions in India will not only strengthen the theoretical underpinnings on issues related to security, but provide an ecosystem to advance security studies and research. In turn, policy-making in India would be better informed by such efforts. Overall, there is a dire need for more institutions to add coastal and maritime security studies, and related aspects of law, into their curriculum.

DEVELOPMENTS AT ZONAL/ STATE-LEVEL

Zonal Coordination

At the 54th Director Generals of Police/ Inspector Generals of Police Conference in Pune in December 2019, a core group held a brainstorming session on coastal security.⁴¹ Subsequently, in July 2020, the Directors General of Police of the four southern states namely Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu held a videoconference to discuss, amongst others, issues of inter-state coordination towards “*keeping a close eye on terrorist activities, enhancing coastal security and ensuring coordination in tackling COVID-19.*”⁴² They also discussed the need for additional funds from the Centre for coastal security.

While much of the coastal security initiatives are focused either on the centre or state, zonal operational coordination, such as that undertaken by the southern states, could play an important role in the future of coastal security management. Similar zonal coordination mechanisms could also be considered by other coastal states.

³⁹ “The Rashtriya Raksha University Act, 2020”, India Code, accessed October 25, 2020.

https://www.indiacode.nic.in/bitstream/123456789/15619/1/A2020_31.pdf#search=Rashtriya

⁴⁰ Telangana “NALSAR signs pact with CHSS”, *Telangana Today*, 16 June 2020. <https://telanganatoday.com/nalsar-signs-pact-with-chss>

⁴¹ Prime Minister’s Officer, “Prime Minister addresses the 54th DGSP/IGsP Conference”, Press Information Bureau, 08 December 2019. <https://pib.nic.in/PressReleasePage.aspx?PRID=1595471>

⁴² Press Trust of India, “DGPs of southern states discuss coordination to curb terrorism, COVID-19”, *The New Indian Express*, 11 July 2020. <https://www.newindianexpress.com/states/tamil-nadu/2020/jul/11/dgps-of-southern-states-discuss-coordination-to-curb-terrorism-covid-19-2168528.html>

State Marine Police

Several states have taken initiatives to strengthen the SMP and fisheries enforcement. In February 2020, the Chief Minister of Tamil Nadu ‘kicked-off’ the functioning of a specialised wing of the Tamil Nadu Police—the Marine Enforcement Wing (MEW)— for enforcement of the Tamil Nadu Fishing Regulation Act, 1983 (TMFRA).⁴³ In addition, in Nagapattinam district, a committee comprising representatives of fisheries, police, revenue, and transport departments has also been formed for effective enforcement of the TMFRA.⁴⁴ Likewise, Karnataka is also considering raising an independent fisheries enforcement wing. Notably, in Kerala a MEW was sanctioned in 1984.⁴⁵

In Odisha, towards effective utilisation of trained manpower, the State Police Headquarters has issued a new policy on posting and transfer of personnel in the SMP. As per the policy the minimum duration to serve in the SMP is between three years (for Sub-Inspectors and Assistant Sub-Inspectors) to seven years (for Constables and Havildars).⁴⁶ Some states such as Karnataka and West Bengal have also reserved some posts for Ex-servicemen (ESM) in the SMP.⁴⁷

The raising of dedicated MEW, the increase of attachment period with respective SMPs, and the continued efforts of engaging ESM in the SMP are important steps in boosting SMP capabilities for maritime enforcement, particularly from the human resources perspective. However, in the long term, a permanent cadre of the SMP would be more effective and needs to be considered. In addition, considering the limited service life of vessels, which were procured as part of MHA Coastal Security Scheme Phase I for coastal states, there is a need to strengthen the capacity of the SMP by acquisition of additional vessels.

⁴³ Express News Service, “Marine Enforcement Wing takes off, Nagapattinam gets two units”, *The New Indian Express*, 21 February 2020. <https://www.newindianexpress.com/states/tamil-nadu/2020/feb/21/marine-enforcement-wing-takes-off-nagapattinam-gets-two-units-2106533.html>

⁴⁴ Special Correspondent, “Marine Enforcement Wing to get manpower before long”, *The Hindu*, 04 February 2020, <https://www.thehindu.com/news/cities/Tiruchirapalli/marine-enforcement-wing-to-get-manpower-before-long/article30737343.ece>

⁴⁵ “Marine Enforcement,” Government of Kerala (Department of Fisheries), accessed August 20, 2017, <http://www.fisheries.kerala.gov.in>

⁴⁶ Debabrata Mohapatra, “New transfer policy launched for marine police staff in Odisha”, *The Times of India*, 31 August 2020. <https://timesofindia.indiatimes.com/city/bhubaneswar/new-transfer-policy-launched-for-marine-police-staff-in-odisha/articleshow/77853844.cms>

⁴⁷ “Karnataka State Police Firemen, Other Recruitment: 1567 Vacancies Available,” New Delhi Television, accessed November 01, 2020, <https://www.ndtv.com/jobs/ksp-karnataka-state-police-firemen-recruitment-1567-vacancies-available-2256984>; “Information to Applicants for Submission of Application for Recruitment to the Post of Technical Staff in West Bengal Police - 2020 for Coastal Police Stations Under Coastal Security Scheme,” West Bengal Police, 2020, accessed November 01, 2020, http://wbpolice.gov.in/writereaddata/wbp/Information_to%20Applicants_coastal_security.pdf

Leveraging the Coastal Security Construct

The seaward element of the COVID-19 lockdown was enforced by coastal States, in coordination with other agencies, such as in Kerala, Karnataka, Odisha and Goa.⁴⁸

Notwithstanding, there have been reports of violation of the lockdown with some migrant workers taking the sea route to return home.⁴⁹ Community Interaction Programmes (CIPs), which are normally undertaken for increasing awareness of safety and security, were also leveraged by the SMP for conducting awareness campaigns on COVID-19 precautions.⁵⁰

While the present lockdown was implemented for public health, elsewhere, such as in Malaysia, maritime curfews have been implemented for security requirements. Should there be a requirement of a security-related coastal lockdown in specific areas along the Indian coast, the experience of implementing the seaward element of the COVID lockdown could provide some valuable lessons.

The SMP has progressively been integrated into the response mechanisms to deal with natural calamities, Search and Rescue (SAR) operations, and for biodiversity conservation, such as conservation of Olive Ridley turtles in Odisha.⁵¹ With enhanced capacity and capabilities, the SMP has the potential to contribute in even larger measure to overall maritime security.

The capability developments undertaken primarily for coastal security have been leveraged for other operational requirements as well. For example, during Cyclones Amphan (May 20/ West

⁴⁸ Asian News International, "COVID-19: Locals Stage Protest In Thiruvananthapuram's Poonthura Area Where Commandos Have Been Deployed", *Business World*, 10 July 2020. <http://www.businessworld.in/article/COVID-19-Locals-stage-protest-in-Thiruvananthapuram-s-Poonthura-area-where-commandos-have-been-deployed-/10-07-2020-296132/>; Daijiworld Media Network - Udupi (MS), "Udupi: Alleged "party" at St Mary's Island amid lockdown, police seize two cars," 10 May 2020, daijiworld.com.

<https://www.daijiworld.com/news/newsDisplay.aspx?newsID=706610>; Ashutosh Mishra, "Odisha: Migrant Workers Take Sea Route to Reach Native Places," *The Wire*, accessed November 02, 2020, <https://thewire.in/rights/odisha-migrant-workers-take-sea-route-to-reach-native-places>; Navhind Times Desk, "Betul coastal security police tighten surveillance", *Navhind Times*, 24 April 2020.

<https://www.navhindtimes.in/2020/04/24/goanews/betul-coastal-security-police-tighten-surveillance/>

⁴⁹ Ashutosh Mishra, 'Odisha: Migrant Workers Take Sea Route to Reach Native Places.'

⁵⁰ Navhind Times Desk, 'Betul coastal security police tighten surveillance.'

⁵¹ Free Press Journal Desk, "Mumbai Rains Live Updates: NDRF teams recovers body of 1.5-year-old girl from Santacruz chawl collapse", *Free Press Journal*, 04 August 2020. <https://www.freepressjournal.in/mumbai/mumbai-rains-live-updates-overnight-showers-lead-to-waterlogging>; Deccan Herald News Service, "4 fishermen rescued by Coastal Security", *Deccan Herald*, 10 May 2020. <https://www.deccanherald.com/state/mangaluru/4-fishermen-rescued-by-coastal-security-police-835896.html>; Press Trust of India, "Olive Ridley conservation: Odisha govt clamps prohibition on sea fishing activity at three river mouths", *The New Indian Express*, 01 November 2020. <https://www.newindianexpress.com/states/odisha/2020/nov/01/olive-ridley-conservation-odisha-govt-clamps-prohibition-on-sea-fishing-activity-at-three-river-mou-2217951.html>

Bengal) and Nisarga (June 20/ Maharashtra), local nodes of the CSN passed security/safety messages, including in the vernacular, on Very High Frequency (VHF) to all mariners at sea.⁵²

Fisheries Management

Coastal states have taken several measures to strengthen fisheries MCS. In July 2020, Gujarat amended the Gujarat Fisheries Act, 2003 through the Gujarat Ordinance No. 4 of 2020 for strengthening fisheries monitoring and enforcement.⁵³ Some of the salient features of the ordinance include: defining “*crossing of notional Indo-Pak International Maritime Boundary Line*,” extension of powers of Enforcement Officer (officials of the fisheries department) to Police Sub-Inspector (or above) posted at notified Marine Police Stations, including powers of search/ seizure and the use of force; powers of the State Government to make rules under the Act not only for protection of fish, but also for internal security; and, enhanced fines for illegal fishing. Subsequently, in October 2020, the Governor gave his assent to the Gujarat Fisheries (Amendment) Act, 2020.⁵⁴

Karnataka is considering an amendment to the Karnataka Marine Fishing Regulation Act, 1986 to strengthen fisheries enforcement including making certain offences cognisable and raising the upper limit of fines.⁵⁵ In addition, Karnataka has taken an initiative to provide QR-code based biometric cards to fishermen through the *Seva Sindhu* portal,⁵⁶ and is also considering providing reservations to fishers in the SMP.⁵⁷ Earlier this month, the Karnataka Marine Police also launched the *Kadalu* app for monitoring movement of fishing boats and fishers.⁵⁸

⁵² Ministry of Defence, “Pre-Emptive Measures by ICG During Cyclone”, Press Information Bureau, 21 September 2020. <https://pib.nic.in/PressReleaseDetail.aspx?PRID=1657272>

⁵³ “GUJARAT ORDINANCE NO. 4 OF 2020,” Legislative and Parliamentary Affairs Department (Government of Gujarat), accessed November 01, 2020, https://lpd.gujarat.gov.in/assets/downloads/ordinance_22062020.pdf

⁵⁴ “Gujarat Fisheries (Amendment) Act, 2020,” Legislative and Parliamentary Affairs Department (Government of Gujarat), <https://lpd.gujarat.gov.in/assets/downloads/GujActN102020.pdf>, accessed 22 November, 2020.

⁵⁵ Jaideep Shenoy, “Karnataka: Fisheries department mulls amendment to Act to curb delinquent acts by fishermen”, The Times of India, 29 August 2020. <https://timesofindia.indiatimes.com/city/mangaluru/karnataka-fisheries-department-mulls-amendment-to-act-to-curb-delinquent-acts-by-fishermen/articleshow/77826806.cms>

⁵⁶ A portal for citizen’s services in Karnataka.

⁵⁷ Special Correspondent, “QR code-based biometric ID cards for coastal fishermen”, The Hindu, 30 June 2020. <https://www.thehindu.com/news/cities/Mangalore/qr-code-based-biometric-id-cards-for-coastal-fishermen/article31958076.ece>

⁵⁸ Special Correspondent, “Kadalu App to help fishermen launched in Udupi”, The Hindu, 14 November 2020. <https://www.thehindu.com/news/cities/Mangalore/kadalu-app-to-help-fishermen-launched-in-udupi/article33099469.ece>

The Government of Goa is reportedly considering notifying privately-owned fish landing centres. Notably, the application process is likely to require inputs such as proposed activities, monitoring mechanism for boat movements, layout and demarcation of areas, etc.⁵⁹ The requirement of Closed-Circuit Television (CCTV), including remote monitoring by security agencies, is also likely to be made mandatory.

Overall, expanding the enforcement powers of state fisheries laws to include the SMP, enhanced fines for fisheries offences, inclusion of security aspects into fishery laws, and improved monitoring mechanisms at fish landing centres are significant steps taken by some states to improve fisheries MCS. However, the need would be for all states to strengthen MCS measures. In this regard, the Centre's initiative, the PMMSY, could be a key enabler.

Community Policing

The Minister of State for Shipping (Independent Charge) at a seminar on 'Challenges of Coastal Community and their Role in Nation Building', in December 2019, underscored the importance of empowering the coastal community "*who remain at the vanguard of the country's coastal security.*"⁶⁰ Furthermore, ingenious ways to involve the fishing community to deal with certain security challenges in the maritime domain have also been advocated.⁶¹

Community-engagement is a well-entrenched concept in policing. The Civil Defence and Home Guards are examples of organisations that engage the community. Another example of community engagement is that of Special Police Officers (SPOs). In the maritime context, as mentioned earlier, community engagement for coastal security received renewed thrust after the '26/11' incident, but remains largely *ad hoc*. Institutionalisation of community-engagement for maritime security therefore emerges as a possible way ahead for which either existing organisations can be leveraged, or alternatively, a dedicated organisation may merit consideration.

⁵⁹ Times News Network, "Goa invites applications for private fish", *The Times of India*, 25 September 2020. <https://timesofindia.indiatimes.com/city/goa/state-invites-applications-for-private-fishing-jetties/articleshow/78305695.cms>

⁶⁰ Ministry of Shipping, "Important to empower the coastal community who remains at the vanguard of the country's coastal security: Shri Mansukh L. Mandaviya", Press Information Bureau, 20 December 2019. <https://www.pib.nic.in/PressReleaseDetail.aspx?PRID=1597121>

⁶¹ Vijay Gokhale, "There is a pressing need for India to develop a comprehensive Underwater Domain Awareness strategy", *The Indian Express*, 23 June 2020. <https://indianexpress.com/article/opinion/columns/india-china-border-dispute-galwan-sea-route-6471403/>

PENDING REFORMS

Apex-Level Body

The *Report of the Group of Ministers on National Security* (2001) had recommended the setting-up of an apex body for the management of maritime affairs to provide institutionalized linkages between the maritime security agencies and other stakeholders at the centre and in states.⁶² Subsequently, the Indian Navy had proposed the setting-up of a National Maritime Commission to chalk out the country's long-term maritime policy.⁶³ A Standing Committee of Defence Report (2014) had also recommended the establishment of a 'Maritime Commission' or a similar agency and a PAC Report of 2015 also highlighted the need for putting in place effective mechanisms for interagency coordination.⁶⁴ As brought out earlier, the PAC has once again, in 2020, reiterated this need. In 2014, the Government recognising the importance of coastal security also announced the government's intention of setting up a National Maritime Authority (NMA).⁶⁵

The External Affairs Minister in his address at the Sardar Patel Memorial Lecture 2020 on 31 October 2020 highlighted that safeguarding borders is a 24x7 exercise and stressed on the importance of requisite structures and systems for national security.⁶⁶ However, he also cautioned against advocating sweeping solutions without adequate ground work. He also highlighted that breaking silos and integrated governance, especially in national security, have been the Government's areas of focus. The setting-up of the DMA and the proposed setting-up of theatre commands are examples in this regard.

In a recent article, Honorary Fellow at the National Maritime Foundation, Commodore C Uday Bhaskar (Retd.), highlighted the importance of comprehending SAGAR from its "*vast and delicate*

⁶² Group of Ministers, "Report of the Group of Ministers to Review the National Security, 2001" accessed November 28, 2020, 74.,

<https://www.vifindia.org/sites/default/files/GoM%20Report%20on%20National%20Security.pdf>

⁶³ Bureau Report, "Set up National Maritime Commission: Navy to government", *Zee News*, 15 February 2005.

https://zeenews.india.com/news/nation/set-up-national-maritime-commission-navy-to-government_202094.html

⁶⁴ Standing Committee on Defence, *22nd Report: Threat Perception and Preparedness of the Forces including Incursion of Borders, Coordination Mechanisms with Central Armed Police Forces and Border Connectivity through Road, Air and Rail* (New Delhi: Lok Sabha Secretariat, 2014), 92. http://164.100.47.193/lssccommittee/Defence/15_Defence_22.pdf; Public Accounts Committee, *21st Report: Role and Functioning of the Indian Coast Guard*, 101.

⁶⁵ "Address by the President of India, Shri Pranab Mukherjee to Parliament," Shri Pranab Mukherjee, Former President of India, accessed November 06, 2020, <http://pranabmukherjee.nic.in/sp090614.html>,

⁶⁶ "Sardar Patel Memorial Lecture-2020 by EAM Dr. S. Jaishankar: India and the Post-Covid World", Ministry of External Affairs, accessed November 02, 2020, <https://www.mea.gov.in/Speeches-Statements.htm?dtl/33158/Sardar+Pat>

multi-layered complexity” and reiterated the “*need for a single body that could pull all the threads into a harmonious collective effort.*” In this regard, he has also recommended a revisit of the NMA proposal as a policy imperative.⁶⁷

Presently, the NCSMCS set-up after the ‘26/11’ incident chaired by the Cabinet Secretary is the apex-level coordination body on coastal and maritime security that meets periodically.

Considering the increasing focus on issues maritime, including maritime security, a standing apex-level body, such as the proposed NMA, may well be needed. As such, several bodies have already made similar recommendations.

NMDA

In January 2010, the Indian Navy brought out an approach paper for a comprehensive approach to MDA through the National Maritime Domain Awareness (NMDA) project.⁶⁸ The aim of the project was to integrate all available resources and all stakeholders into one integrated system, and to create a Common Operational Plot (COP) amongst all maritime stakeholders. In short, the project aims to consolidate the gains accrued from the National Command Control Communication and Intelligence (NC3I) Network, which networks only the Indian Navy and Coast Guard and integrates a few sensors and databases.

Separately, towards enhanced regional MDA, the IFC-IOR was set-up by the Indian Navy in December 2018 and this has contributed to greater domain awareness and improved international information sharing.⁶⁹ The seas are a seamless medium and such regional efforts complement those by national agencies and facilitate an improved understanding of the wider oceanic spaces and possible impact of regional developments on maritime security.

In relation to the threat from long endurance Unmanned Underwater Vessels (UUV), such as the Chinese *Sea-Wing*, former Foreign Secretary Vijay Gokhale highlighted the need for Underwater Domain Awareness (UDA) as a “*pressing need*” and urged for greater cooperation

⁶⁷ Commodore C Uday Bhaskar (Retd.), “Invest in maritime sector for security,” The Northlines, accessed October 19, 2020, <http://www.thenorthlines.com/invest-in-maritime-sector-for-security/>

⁶⁸ Department-Related Parliamentary Standing Committee on Home Affairs, *187th Report: Action Taken by the Government on Recommendations/ Observations Contained in the 177th Report on Coastal Security Scheme* (New Delhi: Rajya Sabha Secretariat, 2015), 18-19. <https://vifdatabase.com/wp-content/uploads/2018/05/report-no-187.pdf>

⁶⁹ “Information Fusion Centre – Indian Ocean Region,” Indian Navy, accessed October 19, 2020, <https://www.indiannavy.nic.in/ifc-ior/about-us.html>

between domestic and like-minded countries.⁷⁰ Increasingly, the concept of MDA is widening to include other domains as well such as the airspace above, the waters below, and the contiguous coast. The NMDA project would need to be cognisant of the ever-expanding needs for MDA.

The NMDA project when implemented is likely to be a game changer in the management of maritime security in India first, by significantly shortening the Observe-Orient-Decide-Act (OODA) loop, and second, by facilitating integration of essentially naval concepts, such as MDA, Network Centric Operations (NCO) and COP into the operational philosophy of all maritime security agencies. Furthermore, the implementation of the NMDA project will not only consolidate on the significant strides made in domain awareness post '26/11', but also plug a gap at the national level.

TRENDS AND IMPERATIVES

In the previous sections, some of the major developments at the national- and state-levels have been examined. Broadly, these include reorganisation of the MoD and proposed raising of a Peninsular Command; continued efforts at strengthening fisheries MCS and MDA; capability enhancement of maritime security agencies such as the Coast Guard and the SMP, including legal empowerment; and, enhanced cooperation between states for coastal security. Some of the other trends that emerge are wider engagement of states and the SMP in maritime security; increasing convergence of development goals and security requirements; and, enhanced focus on maritime security studies, including maritime security law. Notwithstanding, some major reforms are yet to be implemented.

Having covered the ongoing developments and the observed trends, some of the imperatives are as follows:

- As India increasingly focuses on the seas for its geopolitical, economic and security interests, the long-standing recommendation for single-point body at the apex level, such as the NMA, merits a revisit.

⁷⁰ Vijay Gokhale, "There is a pressing need for India to develop a comprehensive Underwater Domain Awareness strategy", *The Indian Express*, 23 June 2020. <https://indianexpress.com/article/opinion/columns/india-china-border-dispute-galwan-sea-route-6471403/>

- In view of the planned raising of a Peninsular Command and the enduring need for unitary command structures for effective operational response, the modalities for integration or coordination of the proposed Command with other elements of the coastal security construct, which includes the Coast Guard and the SMP, merits consideration.
- Prioritisation of the NMDA project, which has the potential to revolutionise MDA in India. Further, enhancement of the MDA architecture in India by integration of contiguous air, underwater and coastal elements.
- Further strengthening of the legislative framework such as through enactment of the bills under consideration and strengthening of state fisheries legislations.
- Continuing focus on capacity augmentation and capability development for coastal and maritime security, in particular the SMP, including procurement of additional vessels.
- Greater zonal coordination between adjoining States.
- Continued focus on fisheries MCS.
- Institutionalisation of community-engagement and leveraging the planned expansion of the NCC to support maritime and coastal security efforts by security agencies.
- Leveraging 'Made in India' systems, such as coastal radars and NC3I network, and indigenously built patrol ships and craft, for regional capacity building and capability development in accordance with the SAGAR vision.

CONCLUSION

'26/11' marked a paradigm shift in the management of coastal and maritime security in India. While there has been no terror attack since then, there have been reports of likely attacks using the sea route. There have also been reports of a range of other forms of maritime crime, including armed robbery. Considering the possible nexus between criminal elements and terrorists, there is a need to remain vigilant against maritime crime in all its forms.

Maritime security governance has been progressively strengthened through a Whole-of-Government approach. Twelve years after '26/11' there can be little doubt about the significant progress that has been made to respond to possible challenges to coastal and maritime security. Recent initiatives taken by some states to strengthen coastal and maritime security are indeed noteworthy. Also noteworthy is the convergence of development and security needs as evinced in the PMMSY programme. However, two of the big-ticket reforms in maritime security governance namely setting-up of a single-point apex body for maritime affairs and the NMDA project are yet to be implemented.

One of the major recent developments has been the setting-up of the DMA and the proposed raising of a Peninsular Command. In the raising of a Peninsular Command, due consideration needs to be given to the ways and means to achieve the overall ends of 'theaterisation', and concomitantly those for maritime and coastal security.

As India increasingly looks outward, it is important to note that the foundational elements for India's regional vision—SAGAR or the Indo-Pacific Oceans Initiative (IPOI)—are in the maritime security governance structures within India itself. Therefore, strengthening maritime and coastal security governance becomes an enabler and facilitator for India's regional vision.

While continued efforts are being made by multiple agencies to strengthen maritime and coastal security across all levels of governance, many issues will continue to remain a work-in-progress. While further strengthening of initiatives across sectors and governance levels are imperative, pending reforms such as the NMA and the NMDA also merit renewed focus.

About the Author

Captain Himadri Das is a serving Indian Naval Officer and is presently a Research Fellow at the National Maritime Foundation (NMF). The views expressed are those of the author and do not reflect the official position of the Government of India or the Indian Navy. He can be reached at csmda.nmf@gmail.com.