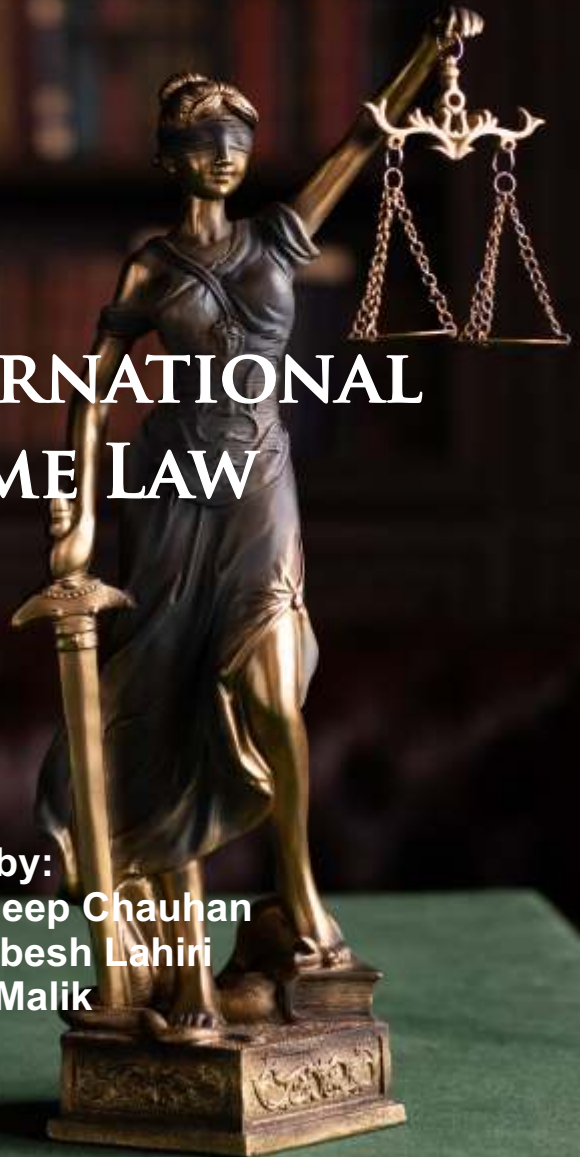


MARITIME PERSPECTIVES 2022

PUBLIC INTERNATIONAL MARITIME LAW

Edited by:
Vice Admiral Pradeep Chauhan
Commodore Debesh Lahiri
Purnima Malik



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Editors: Vice Admiral Pradeep Chauhan, Commodore Debesh Lahiri and Ms Purnima Malik

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Foreword

For decades, and in some cases for over a century, nations have engaged, traded, and even gone to war with one another, while remaining largely within the bounds of international law. Today, however, with the global community standing at the cusp of unprecedented changes – political, economic, technological, environmental – the strain on these international laws have become increasingly apparent. In particular, the geopolitical game that is currently underway in the Indo-Pacific, has thrown into stark relief the importance of reliable and predictable rules and regulations to govern the vast and predominantly maritime expanse of the region.

The years following the outbreak of the COVID-19 pandemic have made it evident that we now live in an era defined by disruptions. The interdependence of our economies has ensured that it is not only trade that is globalised but also our vulnerabilities. That said, international law remains the most effective tool we have available to enable collective responses to global challenges and manage conflict between States to arrest its spillover humanitarian and economic impacts. Hence, there is an urgent need to address the largely grey areas arising from recent developments. For example, in the 21st century, unmanned maritime systems comprise an important subcategory of military devices and craft, but the 19th and 20th century humanitarian laws are inadequate to address the complexities of these systems and their operational implications. Similarly, the reality of the impact of climate change has hit the global consciousness rather late and most of our current international laws are unable to cater to impacts such as changing baselines due to sea-level rise and consequent possible changes to the maritime boundaries. Likewise, the laws governing international human rights are silent on the status of climate refugees who are increasingly likely to be forced to flee as their homes are swallowed by the rising sea. On the other hand, despite robust legal frameworks for the conservation

and protection of marine biological diversity, the issue of illegal, unreported, and unregulated (IUU) fishing continues to plague the oceans to the extent that it could result in the rapid extinction of certain vulnerable species, including unidentified species. IUU fishing is, today, a serious threat to food security and holistic maritime security across the globe.

In this context, this volume of “Maritime Perspectives on Public International Maritime Law” delves into the legal aspects of a wide range of issues, encompassing facets of the changing nature of naval warfare all the way to climate change, and also includes useful policy-recommendations to better secure India’s maritime interests.

I am positive that this edition of Maritime Perspectives will enable readers to appreciate the legal nuances of the diverse challenges facing India and the global community in the maritime domain. It will hopefully also serve as a handy resource for the policy-makers and policy-shapers, researchers, practitioners, and academicians alike.

Jai Hind! Sam no Varunah!

Vice Admiral Pradeep Chauhan
AVSM and Bar, VSM, IN (Retd.)
Director-General
National Maritime Foundation

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*International Law
of Armed Conflict*

Navies and the ‘Use of Force’ – Analysing an Encounter Between the US Navy and Seagoing Forces of the Islamic Revolutionary Guard Corps

Bashir Ali Abbas

The sea-going forces of the Islamic Revolutionary Guard Corps (IRGC), considered by some nations as a legitimate, albeit parallel ‘navy’ of the Islamic Republic of Iran; certain nations, specifically the Government of the USA consider the IRGC as nothing more than a ‘Foreign Terrorist Organisation (FTO)’. The merits and demerits of the ‘navy’ of the IRGC (IRCGN) has frequently been found engaged in skirmishes with the US Navy, especially in the Persian Gulf, and in the Strait of Hormuz. These skirmishes and the accompanying vitriolic polemics between the estranged governments of Iran and the USA are manifestations of brinkmanship, which not only has very serious and significant operational maritime consequences, but also raise a host of legal questions as well. These legal questions, are similar to the legal questions arising from the South China Sea, located 6,500 nautical miles (12,000 kms). These legal questions are also central to India’s legal structures within the Ministry of External Affairs (MEA), as well as to the Indian Navy. Both, India and the USA would do well to recognise the impracticality, even futility, of trying to keep maritime issues (especially legal ones) in separate ‘silos’ determined entirely by artificial boundaries such as those between the INDOPACOM and the CENTCOM.

The Iranian armed forces, on 28 July 2020, conducted large scale drills in the Strait of Hormuz which included attacks against a mock aircraft carrier modelled roughly on the US Navy’s Nimitz Class aircraft carrier. Expectedly, the US pilloried Iran for the drills, characterising them as reckless and threatening to the safety of

shipping in the strategically important Strait.¹ While the drills saw participation of multiple branches of the Iranian military, at the vanguard was the IRGC in general, and its navy (IRGCN) in particular. The IRGC, known internally as the '*Pasdaran*',² has been frequently given one or another pejorative label by the USA, its allies and partners. However, the one that perhaps merit serious discussion is that of it being described as a 'FTO' by the US Department of State.³ Moreover, while the IRGC comprises several branches, it is its navy that remains one of its more visible arms in the Persian Gulf. The IRGC is distinct from the regular Iranian military or 'Artesh' and its position in the Iranian system is a complicated one.⁴ Moreover, the IRGC has a history of skirmishes with several other State forces of the Persian Gulf region, albeit with the US Navy more than with any others.

The first major engagement between the IRGCN and the US Navy occurred when the United States became embroiled in what was called the 'Tanker War', following the opening of a maritime front in the closing years of a long-drawn-out bloody war of attrition between the Islamic Republic and Iraq.⁵ Since then, the IRGCN has usually garnered attention for brief but intense skirmishes with the US Navy in the Persian Gulf. The intensity and frequency of these incidents in the Persian Gulf have varied in tandem with the broader developments in Iran-US relations. However, at times even significant rapprochement between Iran and USA, has not prevented encounters between US Naval forces and the IRGCN. For instance, in 2016, the IRGCN captured US sailors, when the latter entered Iranian territorial waters near Farsi Island.⁶ This was despite a 'high' in US-Iran ties during the Obama administration, which also ensured the initial success of the Joint Comprehensive Plan of Action (JCPOA).⁷ On the other hand, when the JCPOA itself became the heart of a fresh dispute between the Trump administration and Iran, these incidents became more prominent, and continue to occur sporadically in the Gulf and the Strait.

The IRGCN's modus operandi has remained typical. It usually engages in swarms to harass US ships, with provocative manoeuvres, and avoids direct engagement or deployment of any weapons.⁸ In April 2020, the US Navy accused the IRGCN of "*dangerous and provocative actions*" against its vessels, which were involved in a joint

military exercise with US Army Apache attack helicopters in international waters. Eleven vessels of the IRGCN repeatedly approached US ships at “extremely close range and high speeds” with one passing within nine metres of a US Coast Guard cutter.⁹ Besides stating that such actions were inconsistent with international maritime conventions or customs, the US Navy issued a notice in April that included the warning that - “*Armed vessels approaching within 100 meters of a US naval vessel may be interpreted as a threat...*” and Failure to obey this, would invite “*lawful defensive measures*” by the US Navy.¹⁰ Although the notice was a generic one and issued without specifically naming Iran, there can be little doubt that Iran was the principal target of the warning. It is, however, more subtle in nature and precise in language than a blunter tweet by the then US President Donald Trump, in which he directed the US Navy to “*shoot down and destroy*” Iranian gunboats that harass American ships.¹¹

Despite a precarious deterioration of relations following the US withdrawal from the JCPOA, Iran and the US are not in a classic state of armed conflict. Moreover, the use of armed force has not occurred in the main incident in question.¹² A string of attacks in June and July 2019, against oil tankers belonging to various nations, have once again brought the general insecurity concerning shipping in the Persian Gulf to a head. These tankers suffered multiple explosions under their waterline, allegedly due to limpet mines. The United States openly blamed the IRGCN, while the United Arab Emirates (whose ship was one among the victims of the attack) stated that its investigation pointed at the involvement of a ‘State actor’.¹³ While no international impartial investigation was conducted into the attacks on oil tankers, there was enough reason, political and otherwise, to direct suspicion towards the IRGCN. Consequently, the US led an initiative to protect shipping in the region, termed the ‘International Maritime Security Construct’, comprising ten nations — Albania, Australia, Bahrain, Estonia, Lithuania, the Kingdom of Saudi Arabia, the United Arab Emirates, the United Kingdom, and the United States — at the present juncture (November 2020).¹⁴ Partly in response, and partly to cement its claim that the IRGCN was not involved in the mine attacks, Iran launched its own maritime security regime named ‘Hormuz Peace Endeavor (HOPE)’.¹⁵ The foremost aspect to be understood, however, is the position of the IRGC in the Iranian state.

The IRGC – State or Non-State?

The IRGC (Sepah-e-Pasdarane-Inqelabe Eslami) traces its provenance to the very foundation of the Islamic Republic of Iran, in 1979. Born out of the insecurity that frequently defines the relationship between nascent post-revolutionary regimes and the existing militaries of States — as fear of a military-led coup d'état remains high — the IRGC was set-up as a parallel force — albeit a 'militia' to protect the government of religious clerics that came to power in Iran. However, it was designed as a steadfast and ideologically firm constituency that the supreme clerical and political authority in Iran, could rely on for political and military support. Therefore, the IRGC is an organisation that remains at the forefront of the support base for the Supreme Leader of Iran. Over the decades, the Guards' role has evolved, with the organisation emerging out of a strict combat role that it had sculpted for itself in the formative years of the Iran-Iraq War — which propelled the creation of the IRGCN — and donning the role of a multi-faceted and complex organisation that exercises significant economic, political, cultural and military control within the Iranian State.

Although there remains a dearth of reliable accounts that cover the IRGC comprehensively, the few that exist, are insightful –

*“In the IRGC, Khomeini’s ideological and religious authority was fused with the effective organization of armed force and coercion. This, perhaps more than any other factor, enabled Khomeini to dominate his opponents and establish a regime in his image”.*¹⁶

*“The IRGC is neither a corrupt gang nor is it a firebrand revolutionary vanguard with the aim of exporting Iran’s revolution across the region. Rather, its vested and increasing interests in the country’s economy make it an increasingly conservative force rather than a radical one.”*¹⁷

The first quote relates to the IRGC's position in the foundational years of the new regime while the second serves to reflect its contemporary 'evolved' and complex role. There is, quite clearly, a great deal that is needed to be understood about the behemoth that the IRGC is, which has spread its arms over most, if not all aspects of the Iranian society. While the IRGC might appear to be an overbearing force within Iran, it has traditionally, without exception, aligned itself with the Supreme Leader and focused on its role of guarding against threats in all forms to Iran's clerical regime.

It has often been argued that the IRGC is a non-state militia working in parallel to State forces, but nothing could be farther from the truth. In actuality, the IRGC is an entity that does not quite fit within the conventional State-Non-state framework. However, in strict legal and technical terms, it is very much a state actor and draws authority from a document no lesser than the Constitution of Iran and reports to an authority no lesser than Ayatollah Khamenei, who is vested with the power to appoint or dismiss the Commander of the Guards.¹⁸ The IRGC retains much autonomy in terms of executing its missions but these in no manner transgress the authority of the Supreme Leader.

The IRGCN is generally associated with the use of fast-attack crafts, a preference for swarm tactics, to overwhelm larger ships, and asymmetric warfare. Amongst others, the patrol and coastal combatant fleet of the IRGCN is primarily composed of Bavar (Peykaap II), Ghaem, Kashdom II, and Zulfiqar Classes of patrol vessels. A comprehensive list of surface craft vessels operated by the IRGCN was published by the International Institute of Strategic Studies in February of this year.¹⁹ However, in May, it was reported that the IRGCN was adding a staggering one hundred new missile boats to its fleet, which would include vessels of Ashura, Tariq and Zulfiqar classes.²⁰

In its early years, the IRGCN and the Islamic Republic of Iran Navy (IRIN) had some overlap in their areas of responsibility. However, following a 2007 restructuring, the IRGCN remains solely responsible for the Persian Gulf, while the IRIN, with its more conventional fleet and command of Iran's sub-surface assets, is responsible for the Caspian Sea, and the Gulf of Oman.

The vital chokepoint of the Strait of Hormuz continues to be an overlapping area of responsibility for both, the IRGCN and the IRIN.²¹ The US naval assets in the Gulf and the Strait are usually part of the Bahrain-based US Navy's 5th Fleet, which in itself is under the United States Military's Central Command (CENTCOM).

The Terrorist Designation

The White House, on 08 April 2020, released an official statement under the sign of the President, which designated the IRGC as an 'FTO' as per Section 219 of the

Immigration and Nationality Act, of the US. While this act was unprecedented in that it designated a State actor as an FTO for the first time, the designation of IRGC-linked entities as such, was not. Earlier, the Treasury Department had sanctioned multiple businesses linked to the IRGC's Khatam al Anbiya company.²² Additionally, the 'Quds Force' of the IRGC and several of its top commanders have also seen multiple designations by the Treasury Department since 2007.²³ That said, it must be noted that the listing of the IRGC (as a whole) as an FTO does have some obvious uniqueness. Even as the White House terms the IRGC to be an active participant in acts of terrorism, just as it did in earlier instances categorising other groups as FTOs, it included the IRGC in the same list of FTOs published by the Department of State, even though all the others are non-State actors. Amongst the 69 entities currently listed, the IRGC remains the only State actor.²⁴ Consequently, it also means that the only hostile State force that the US Navy could reasonably expect to encounter in the Persian Gulf, is one which is, according to the United States, a terrorist organisation.

Against this backdrop, it would be prudent to examine three specific questions, i.e., (i) does the IRGCN vessels qualify as warships? (ii) does the harassment-actions constitute a level of 'use of force' that trigger action of self-defence by the US Navy? and (iii) is the '100-metre rule' valid in terms of the international law?

Legal Status of IRGCN's Vessels

The fundamental question relating to the IRGCN, is whether their vessels or 'gunboats' classify as warships. The standing definition of a 'warship' in contemporary international law is enshrined in the 1982 United Nations Convention on the Law of the Sea. As per the provisions of the Convention, 'warship' means 'a ship belonging to the armed forces of a State bearing the external marks distinguishing such ships of its nationality, under the command of an officer duly commissioned by the government of the State and whose name appears in the appropriate service list or its equivalent and manned by a crew which is under regular armed forces discipline'.²⁵

At first glance, the history and behaviour of the IRGCN, its revolutionary roots and the traditional distinction from the Artesh Navy might lead to the view that the

IRGCN does not constitute the “armed forces” of Iran, but rather a parallel State-sponsored militia. A view that is furthered by the requirement in the definition, for a ship to be manned by a crew under a “regular” armed forces discipline. Indeed, the operational perception of the IRGCN, due to its erratic behaviour at sea, has also been one that distinguishes it from the IRIN. This is evident in the observation by the US Navy personnel that, amongst other things, unlike the IRIN, the IRGCN “doesn’t speak Navy”.²⁶ Additionally, the IRGCN has a more informal and decentralised command structure than does the IRIN, and a less hierarchical rank system. The IRGC is a force immensely grounded in history, drawing its identity from the revolutionary zeal of the early years of the Islamic Republic and giving it new meaning in the present. In its founding years, it shunned a rank structure completely, with only rudimentary distinctions at the command level for operational needs.²⁷ Moreover, the IRGC had usually stressed on the evils of hierarchical structures in militaries and categorised them as an impeding element for equality within armed forces. This was associated with the identity of the IRGC as a force based on Islamic norms, and on the principles of fraternity and brotherhood. However, by the end of the war with Iraq, the IRGC had been forced to acknowledge the shortcomings arising out of the lack of official ranks and resorted to a structure that had some resemblance to traditional systems of rank.²⁸ However, the fundamental belief underpinning the original argument against ranks has not been entirely shed (the senior echelons of the IRGCN continue to be staffed by veterans of the 1980-88 war). As has been noted, “the organization was later forced to adopt ranks after the war, but its commitment to Islamic fraternity has remained a core feature of the organization’s culture and identity”.²⁹ This accounts for the distinctive behaviour of the IRGCN, often leading observers to call it a “guerrilla force at sea”.³⁰

That having been noted, the lack of adherence of a force to models familiar to other states, cannot be sufficient for one to argue that it does not constitute the “armed forces” of a State. The overt distinction between IRIN and IRGCN notwithstanding, the latter is an integral part of the Iranian state. Its constitutional nature has been stated earlier. Furthermore, the definition of warships in the law of the sea regime itself, has evolved to account for forces other than the navies of States, as has also been noted by other scholars.³¹ A parallel reading of the 1958 Convention on the

High Seas, with the 1982 UNCLOS, reveal this. The 1958 Convention reads as ‘For the purposes of these articles, the term “warship” means a ship belonging to the naval forces of a State and bearing the external marks distinguishing warships of its nationality, under the command of an officer duly commissioned by the government and whose name appears in the Navy List and manned by a crew who are under regular naval discipline’.³²

It is to be noted that the words “naval” in the 1958 Convention was changed to “armed” in the 1982 Convention, ostensibly to make the definition more inclusive of other forces that a state may deploy at sea for non-commercial purposes. While it may be argued that such forces necessarily point to coast guards and other border protection forces, the exclusion of a force such as the IRGCN from the 1982 definition, is not supported by the language of the Convention. The United States, although not a party to the UNCLOS, accepts the 1982 definition. Hence, it can be concluded based on the above assertions that IRGCN gunboats qualify as warships under the definition of the 1982 Convention as well as the definition adopted by the United States.

The IRGCN vessels are considered to be warships, as they undeniably enjoy sovereign immunity. This is due to the clear language of UNCLOS, which states that “...nothing in this Convention affects the immunities of warships and other government ships operated for non-commercial purposes”.³³ The mere fact that a vessel is operated by the government of a State for non-commercial purposes enables it to enjoy the rights of sovereign immunity. While such immunity usually relates to the immunity of warships from the law-enforcement jurisdiction of a State in its Territorial Sea, the argument can be extended in that the same principle prevents any change in the immunity of vessels, despite the organisation to which the vessels are a part, being unilaterally designated a ‘terrorist organisation’ by another State. Any change to this would need new legal norms and these may well be evolved in the future, but the current norms are what they are, and it would be difficult to countenance the cherry-picking of the law by a single country, howsoever powerful it might be. This becomes especially relevant when one considers the Convention for the Suppression of Unlawful Acts against the safety of maritime navigation (the SUA Convention), which is associated with the global legal regime to counter terrorism.³⁴

The Convention itself declares that its provisions do not apply to warships.³⁵ Historically, it is the Supreme Court of the United States itself that set a significant precedent highlighting that military vessels in the service of another sovereign state as warships are regarded as military and political instruments of that State.³⁶ The immunity of warships has much more precedent and years of legal backing, than any practice of designating a State's armed force as a 'terrorist organisation'. It is fair to assume that IRGCN vessels are not divested of their immunity merely due to the 'FTO' designation by the US State Department.

'Harassment', 'Use of Force', and the Right of Self- Defence

At its widest point, the Persian Gulf, which falls under the area of responsibility of the IRGCN, is 210 miles (336 kms). This effectively implies that most of the Gulf is covered by the Exclusive Economic Zone (EEZ) of the bordering States. However, this fact in no manner limits the freedom of navigation of ships in these waters, as all vessels enjoy the same freedoms in the EEZ of States, as they would on the High Seas, without prejudice to the rights of the coastal State with respect to its EEZ. Therefore, both the US Navy vessels as well as the IRGCN vessels do enjoy the same navigational rights on these waters. While IRGCN's provocative behaviour is in no way novel and has manifested in several forms across the past two decades, the April 2020 incident cited earlier which also involved IRGCN vessels crossing the bows and sterns of US ships including the guided missile destroyer *USS Paul Hamilton*, is the most recent. It must be noted that none of the IRGCN vessels fired against any US vessels or made physical contact. It fits the traditional practice of the IRGC, which has categorically been termed as 'harassment' by the US Navy officials and the President of the United States. The Notice to Mariners in the Persian Gulf by the US Navy that any vessel approaching within 100 metres of US warships would be perceived as a threat and be subjected to "lawful defensive measures", is a result of such perception. If one considers the tweet by the former President, Mr Donald Trump, that such harassment would cause the US Navy to "shoot down and destroy any and all Iranian gunboats", then it would appear that the use of armed force is a part of the "lawful defensive measures" earlier indicated. However, as has become the unofficial norm, most observers have found it prudent to take such tweets with

a pinch of salt. Moreover, the US Navy itself has stated that its rules of engagement remain unchanged.

Drawing from years of jurisprudence on the subject of the use of force, it can be asserted that the meaning of the ‘use of force’ is not restricted to those acts which aim to seize territory from another sovereign state or overthrow a regime. The ICJ has for long rejected a narrow interpretation of the prohibition on the ‘use of force’ as stipulated in Article 2(4) of the UN Charter.³⁷ In the Nicaragua case, the Court split the meaning of the ‘use of force’ into grave forms and less grave forms. It noted that only an ‘armed attack’ against a State would qualify as a grave breach of the prohibition on the use of force. Consequently, it is such an armed attack against a State which would trigger the inherent right of self-defence of a State.³⁸ The Court reaffirmed this interpretation in the Oil Platforms case which involved the United States and Iran, in its 1998 judgment.³⁹

It is true that the meaning of “armed attack” in itself not included in Article 51 of the Charter. In fact, the Court has acknowledged this in the Nicaragua case and pointed toward customary international law for a solution.⁴⁰ However, from a strict legal perspective (as distinct from an operational one) it would be difficult to conflate the mere act of an IRGCN vessel coming close and engaging in provocative manoeuvres but without firing at US warships, with an “armed attack”, irrespective of whether or not it falls within the ambit of the ‘use of force’. It would be even more difficult to equate, the act of any vessel at all, whether armed or not, entering the 100-metre radius announced by the US Navy, with an ‘armed attack’. Therefore, any reaction by the warships of the United States would, from the legal perspective at least, have to necessarily be restricted to internationally accepted measures short of the use of armed force. A few such measures were delineated by the International Tribunal for the Law of the Sea (ITLOS) in the MV Saiga case – “*The normal practice used to stop a ship at sea is first to give an auditory or visual signal to stop, using internationally recognized signals. Where this does not succeed, a variety of actions may be taken, including the firing of shots across the bows of the ship. It is only after the appropriate actions fail that the pursuing vessel may, as a last resort, use force.*”⁴¹

The fact that a radius of one hundred metres is far too small for these sequential measures to be taken is an undeniable one and operational commanders cannot really

be faulted for being exasperated if not outraged by the lack of realistic appreciation of the part of the law. However, the law is what it is, and the correct course of action would be to endeavour to consensually amend the law, if that is what is required to meet operational needs of safety and security. Although the MV Saiga case involved the use of force during law enforcement operations, as did most other cases involving the use of force submitted to the Tribunal for its consideration, and the circumstances of the case were quite different from the situations that arose between the US Navy and the IRGCN in areas of the Persian Gulf that lie outside of any State's Territorial Sea, the jurisprudence of the Tribunal is nonetheless valuable. At most, the ITLOS has noted that actions which prevent by force a warship from discharging its mission and duties, could be a source of conflict between States.⁴² Notably, *prima facie*, the use of force in any form remains illegal. 'Self-defence' serves to create an exception to this act which would otherwise have been wrongful. Moreover, only a grave breach of this prohibition would invite the victim State to use force as an act of self-defence. Any restriction on the use of force by US warships stated above is obviously removed, with the principles of proportionality and necessity accounted for, if the US warship perceives itself to be under armed attack or the imminent threat of an armed attack. It must be remembered that in practice, no warship will stand by and wait to be attacked, if it determines that a hostile vessel is initiating an armed attack.

While international law has evolved to accommodate, to some extent, the extraterritorial use of force against terrorists, the broad prohibition on the use of force still reigns.⁴³ As noted, the US designation does not strip IRGCN vessels of their status as State actors and they remain sovereign instruments of the Iranian State.

Although the US Navy notice was ostensibly directed at Iranian vessels in the Gulf and although IRGCN vessels are usually armed, the notice was addressed generally to all ships in the Persian Gulf. It remains unclear as to how the US Navy is to determine if a vessel coming within 100 m of its ship(s), is armed or unarmed. If the US Navy uses force against an unarmed vessel but one that the former perceives to be armed, for breaching the radius, it will open itself to the charge of being derelict in the discharge of international legal responsibilities to which it has committed itself.

The Validity of the 100-metre Zone in International Law

While any engagement due to a potential breach of the 100-metre zone set by the US Navy, is an operational matter, it is the delimiting of such a zone itself that merits examination. It is evident that above all else, this is a measure undertaken as a response to specific provocation, and not one borne out of the United States' traditional policy at sea during peacetime. The right of a warship to defend itself under threat, is universally recognised and hardly needs restating. The United States Navy recognises this right, as well as that of a US warship to defend US flagged vessels, in its Commanders' Handbook of 2017.⁴⁴

The creation of zones at sea has been a prominent feature of the law of the sea, with the UNCLOS itself being divided into topics based on zones, beginning with the territorial sea. While the UNCLOS, in Article 25(3), accords the coastal State the right to suspend the passage of ships through specified areas of its territorial sea for weapon-firing exercises, the US Navy in its Handbook elucidates that –

‘The Charter of the United Nations and general principles of international law recognize that a State may exercise measures of individual and collective self-defence against an armed attack or imminent threat of armed attack. Those measures may include the establishment of “defensive sea areas” or “maritime control areas” in which the threatened State seeks to enforce some degree of control over foreign entry into those areas. Historically, the establishment of such areas extending beyond the territorial sea has been restricted to periods of war or to declared national emergency involving the outbreak of hostilities. The geographical scope of such areas and the degree of control that a coastal State may lawfully exercise over them must be reasonable in relation to the needs of national security and defence’.⁴⁵

The United States and Iran are not at war, as stated earlier, and the Handbook itself establishes the inapplicability of the application of this right to create the above zones at sea in peacetime. Interestingly, the document precedes this by acknowledging in the same section that this right is limited to the Territorial Sea of a coastal State and that the creation of any zones (in times of peace) that impede the movement of warships beyond the territorial seas, is not permissible. It states – ‘As a general rule, international law does not recognize the peacetime right of any nation to restrict the navigation and overflight of foreign warships and military aircraft beyond its

territorial sea. Although several coastal States have asserted claims that purport to prohibit warships and military aircraft from operating in so-called security zones extending beyond the territorial sea, such claims have no basis in international law in time of peace and are not recognized by the United States’.

While the creation of a mobile zone of 100-metre radius around warships is obviously different from the creation of a static zone stretching over a larger expanse of water, the fundamentals of the creation can be argued to be similar. Both zones, if sought to be created, restrict the movement of ships through them. In this case, while it means that Iran cannot claim to create any such zone beyond its Territorial Sea in the Gulf and attempt to hinder the movement of US ships, it also means that the United States cannot create any such zones either. In this case, to justify the creation of such a radius around its warships, the United States can only make an argument based on operational and practical considerations due to the provocative acts of the IRGCN, but not a legal one based on the regime of the law of the sea.

Assessing Reality

The 2017 report of the Office of Naval Intelligence of the US attributed to Rear Admiral Ali Fadavi of the IRGCN,⁴⁶ mentions that “*it is natural that we always conduct training, drills, and exercises for confrontation with the operational goals we have, and the Americans and the entire world knows that one of the IRGCN’s operational goals is to destroy the US Navy*”.⁴⁷ This offers a lucid understanding of how the United States perceives the IRGCN.

While the recent escalation of tensions is resultant of the “maximum pressure” campaign against Iran by the United States, which itself came on the heels of the US actions vis-à-vis the JCPOA (which elicited little international support), the IRGCN does not have an enviable record in terms of dealing with other forces in the region, either. Both, actions that have been confirmed as having been executed by the IRGCN (such as the frequent encounters with the US Navy in the region), and those purported to have been executed by the IRGC, such as the mining of oil tankers in 2016, can hardly be deemed to be anything but deeply destabilising

ones. To this list must also be added the IRGC's maritime manifestations of friction with neighbours across the Gulf, as also its encounters with British vessels, military and non-military. The legality of at least a few of these actions remains extremely doubtful, particularly the constant denial by Iran of the right of innocent passage of warships through its territorial sea, without prior authorisation.⁴⁸ The vitriolic polemics that characterises the engagement between Iran and the United States is well known but nevertheless deeply disturbing. While this animosity was sparked by the coup of Mohammed Mossadegh in 1953 and fuelled into a blaze post 1979, the IRGC today serves as more than just a vestige of the anti-US feeling generated in the last century. It is a force that constantly revisits its historical past to seek legitimacy for its present existence. However, its evolution from merely a militia raised to protect the Iranian regime into a multi-dimensional force that spreads its reach across Iranian society, cannot be ignored. During this metamorphosis, an integral phase was when the IRGC sought to protect Iran from what it considered to be a cultural 'velvet revolution' by the United States.⁴⁹ Supplemented by Iran's designation as part of the 'axis of evil' following 9/11,⁵⁰ this animosity was only given more oxygen. Therefore, it ought to come as no great surprise that the Navy of the IRGC, which is evidently the primary Iranian force operating in the waters of the Gulf, chooses to remain in character while dealing with the US Navy, which the Iranians know is a much larger force.

The conclusion that the IRGCN gunboats qualify as warships is valid as per the UNCLOS, despite the obvious differences between the nature of IRGCN forces and that of other, more conventional, navies. However, as has been shown, international law itself has evolved and has become more inclusive, thereby effectively diminishing this difference. Further, the ambiguity about the character of potential US responses to further IRGCN actions notwithstanding, it is worthwhile to explore if such 'harassment' constitutes a valid threat of force, or the actual use of force, and if US warships have the right to use armed force in self-defence.

However, the large measure of political friction that exists between Iran and the United States, makes the Persian Gulf a powder keg. It is one that requires careful consideration to be given to political factors, more than legal ones. On the other hand, the strategic importance of the Gulf and the need to ensure stability in its

waters makes the upholding of the law to be in the interest of all States. Perhaps, it is an awareness of this common interest that accounts for the absence of any further escalation of the confrontation between the naval forces of the United States and the IRGC.

Hence, any analysis of the manner in which either force in the region adheres to the law of the sea cannot and should not be seen independent of this context. Ideally, the responsibility of one State to uphold international legal norms is not predicated on the reciprocal adherence to the same norms by an adversary, the degree of hostility notwithstanding.

Conclusion

The maritime issues between Iran and the USA is yet another example of the impracticality of trying to keep maritime issues, especially legal, in separate ‘silos’ determined entirely by artificial boundaries, such as those between the INDOPACOM, and the CENTCOM. All arguments considered, respect for and adherence to international law in general and the law of the sea in particular, which has witnessed years of State practice — one of the lynchpins of which is an acknowledgment of the sovereign rights of States — must be upheld, encouraged and advocated. It may also be reasonably concluded that the provisions of international humanitarian law do not operate, at least not just yet.

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ENDNOTES

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of militaries and the regimes they served...Beyond those concepts, inequitable relations between commanding officers and subordinates is also highlighted as problematic. The harsh discipline of traditional militaries and abuse of subordinates by officers is singled out as especially damaging to armed forces.”

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Rise of the Robots: Weaponization of Artificial Intelligence

Shweta Nair

The history of human civilisation is a complex tapestry of individual and collective human development in the humanities and sciences interwoven with an apparently insatiable quest for power. This article concerns itself with some contemporary facets of the latter. Violence — and the ability to exert it more efficiently, more effectively, and, to a greater degree, than one's adversary — has been the hallmark of this competition for power. This is probably as true for individuals and small social units as it is for large nation-states. To achieve dominance through power, humankind has been engaged in inventing ever more ingenious ways in which to cause and control violence. The use of machines to kill or harm one's adversary has a historical lineage that may well rival that of humankind itself. However, recent developments in automation and artificial intelligence could, for the first time in recorded history, take the control of violence away from humans and place it in the hands of machines. This possibility has led to an intense debate on ethics and morality at various national and international forums, related to the use of such machines.

The main purpose of this article is to sensitise the lay reader (rather than the expert or the practitioner) of the legal risk posed to global societies by the ongoing effort of nation-states to combine Artificial Intelligence (AI) with lethal autonomous weapon systems (LAWS). Human armed inter-State conflict is sought to be regulated principally through International Humanitarian Law (IHL). However, LAWS pose an exceptionally strong challenge to IHL largely because of the ability of the former to supplant the human being (as the administrator of violence) altogether, thereby

bringing into question the validity of the foundational adjective “humanitarian” upon which the very edifice of IHL has been built. That said, it is also important to bear in mind that LAWS are not the only manifestation of the danger that AI poses to human security.

Defining “LAWS”

The first legal challenge, as in many technology-driven issues is that there is not yet an internationally accepted definition of LAWS. In the inaugural meeting of the UN Group of Governmental Experts (GGE) on LAWS, held in 2017 under the overarching umbrella of the “*1980 UN Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Excessively Injurious or to Have Indiscriminate Effects*” (CCW), State parties considered legal, ethical, military, and technological aspects of LAWS. Although no common definition was agreed upon, at least some States offered proposals for a working definition and consequent regulations of LAWS.¹

The legal challenge of a lack of a universal definition is not a new one. For instance, despite its global spread to level where it is nearly ubiquitous, terrorism, too, does not have a legal definition within international law. On the other hand, the fact that there are similar infirmities in international law does not reduce the severity of the legal challenge of a lack of consensus in defining LAWS. It is, nevertheless, a matter of intuitive (if not legal) agreement that all such weapon systems are characterised by varying degrees of autonomy in the critical functions of acquiring, tracking, selecting, and attacking targets;² and, the partial or complete removal of human involvement or ‘human central thinking activities’³ from the decision-making process about the use of lethal force.

‘Autonomy’ reflects a degree of independent dynamic ability and activity. LAWS may be placed in one of two general classifications that are based on the degree of autonomy. The first category is what one might call ‘semi-autonomous’ (involving levels of mechanization and remotely controlled human input); while the second is ‘autonomous’ (including more elevated levels of freedom with regard to acquiring,

tracking, selecting and attacking targets, without the requirement of human input).⁴ Within each category varying degrees of autonomy can be measured in terms of functionality⁵ — the ability to observe, orient, decide, and act (OODA),⁶ and, the ability to replicate human situational awareness.

Within the semi-autonomous category, the “MQ-9 Reaper” by General Atomics offers a typical example. It is a remotely controlled “unmanned combat aerial vehicle” (UCAV) that carries a lethal payload and has sophisticated intelligence, surveillance, and reconnaissance capabilities. All targeting actions, however, are performed manually, by a human operator. Autonomy exists in its ability to get and remain airborne without a pilot and to navigate in flight through automated GPS-based system, including for take-off and landing.⁷

Fortunately, the second category —fully autonomous weapon-systems that have lethal targeting capability but without any human input controlling what, when, and how the system goes about this targeting — is, thus far, unpopulated. The portents, however, are grim. For example, the US Navy’s X-47B has autonomous capability in relation to take-off and landing and completed its first autonomous aerial refuelling in 2015. As a combat system, it could, over time, be provided with even more autonomy in the execution of critical functions.⁸

Yet robotics engineers, military personnel, and ethicists tend to disagree on which devices are merely automatic and which are autonomous. ‘Automatic’ robots, for example, might, in an organised situation, perform a group of activities that have been planned in advance. On the other hand, ‘autonomous’ robots will function under the control of a program but will operate in open or unstructured environments and receive information from sensors to adjust speed and direction.⁹

Weaponization of AI

It is, perhaps, sufficient to describe an Autonomous Weapon System (AWS) as a weapon system with sensors, algorithms, and effectors.¹⁰ Such a system could include stationary as well as mobile robotic components (e.g., unmanned air, ground, or naval vehicles) equipped with active or passive sensors to navigate and detect objects,

motion, or patterns. These sensors could include electro-optical, infrared, radar, or sonar detectors.¹¹

There are two basic lines of argument advanced by those who support the proliferation of autonomous weapons systems:

The first is based upon the military advantages that such systems confer. Here, emphasis is laid upon the fact that AWS act as a force multiplier to human beings. That is, thanks to the presence and availability of AWS, fewer human beings are needed for the accomplishment of a successful mission and the efficacy of each such human being is significantly enhanced. Moreover, AWS can expand “*the battlefield, allowing combat to reach into areas that were previously inaccessible*”¹² and can generate a high offensive tempo even in the face of a breakdown of communications with and between human beings. Further, AWS can be advantageously deployed for ‘dull’ (e.g., long-duration sorties), ‘dirty’ (e.g., missions to be undertaken in areas contaminated by biological, chemical, or nuclear agents), or ‘dangerous’ missions (e.g., explosive ordnance disposal [EOD]).¹³

The second line of argument is centred upon the belief that it is ethically preferable (morally more justifiable) to use AWS than it would be to use human beings.

Proponents even hold that

*“Autonomous robots in the future will be able to act more ‘humanely’ on the battlefield for a number of reasons, including that they do not need to be programmed with a self-preservation instinct, potentially eliminating the need for a ‘shoot-first, ask questions later’ attitude. The judgments of autonomous weapons systems will not be clouded by emotions such as fear or hysteria, and the systems will be able to process much more incoming sensory information than humans without discarding or distorting it to fit preconceived notions.... in teams comprising human and robot soldiers, the robots could be more relied upon to report ethical infractions they observed than would a team of humans who might close ranks.”*¹⁴

As AI develops, it brings in its wake the hugely tempting option of removing altogether need for the tenuous communication links that tie commanders to their troops. Of course, killer robots have not yet become the norm; however, there are precursors that plainly show the pattern of expanding autonomy. An example is that of the Israeli “Harpy” Loitering Bomb that can dally in the air for quite a long

time, looking for adversary radar signals. When these are identified, it assaults and destroys the enemy radar through a process of controlled self-destruction.¹⁵

Another example is that of the SGR-1, an AI-enabled robot ‘infantry guard’ that was developed in the early years of the present century and subjected to successful trials over a decade ago (in 2006). It has been deployed on the border between North and South Korea and is touted as being an armed sentry that never sleeps and one whose concentration never wavers. It is armed with an automatic rifle and a grenade launcher and can distinguish human beings via infra-red sensors, although it does need a human operator to give it the go-ahead to fire.¹⁶

In situations where human operators can be inserted into the loop, the future may continue to see autonomy only in the technical domain rather than in the actual decision-making process. This is more likely to happen in the aerospace and land domains where establishing communications is easier. In the maritime domain however, communications pose a greater challenge and the temptation to deploy AI even for decision-making is very large. Unlike on land, the vast oceans do not have permanent infrastructure to receive and send messages. Surface ships, therefore, have extensive onboard communication suites, which enable them to talk to one another and with land-based authorities. Much like on land or air, these surface combatants, too, use radio waves to communicate. These radio waves travel well in the atmosphere but not so well in water. As a result, underwater vessels, such as submarines, are even more difficult to communicate with. Subsurface vessels mostly use underwater acoustic systems to communicate, which cannot travel through air. The air-water communication barrier is a formidable one and this makes the subsurface domain an ideal ground for the deployment of AI. As a term, the “Unmanned Underwater Vessel” (UUV) has already become synonymous with the expression “Autonomous Underwater Vessel” (AUV) and such vehicles are already being used by many countries both for scientific research as well as for purposes ranging from the gathering of intelligence, surveillance missions, reconnaissance, and mine-countermeasures. The secrecy associated with naval underwater systems makes it difficult to get a clear picture of how many States possess UUV capability and to what degree. However, it is well known that the US, Russia, China, France, Germany, the UK, China, Israel, and India are among a rapidly growing list of countries that

have robust UUV programmes, with AI being increasingly integrated into all such vessels. UUVs/AUVs differ widely in shape and form, from miniature vessels to very large ones, each with their own advantages and disadvantages. The US, for instance, has ordered four “Extra Large Unmanned Undersea Vehicles” (XLUUVs) to be built by Boeing for its Navy. These XLUUVs would operate independently for months underwater and cover up to 6,500 nautical miles on a single fuel-cycle.¹⁷ Boeing’s “Echo Voyager”, on which the new XLUUV, is based has been declared to be a “*fully autonomous UUV that can be used for a variety of missions that were previously impossible due to traditional UUV limitations*”.¹⁸ For all practical purposes, these vessels are fully-capable submarines albeit without human operators. The US Navy is increasing the number and capacity of its unmanned vessels, both on and under the surface. Its long-term plans for the construction of naval vessels include at least 21 medium and large sized drone boats over the next five years (2021-2026).¹⁹ China, too, displayed a large sized unmanned submarine, in the 2019 edition of its annual military parade.²⁰ Considering the fact that the development of defence systems is, for the most part, far ahead of declared capabilities, one can assume that the development of LAWS programmes, including the use of artificial intelligence, is fairly advanced in these States.

A variety of other groups, too, are progressively tapping into 21st century technologies. As AI-enabled LAWS proliferate beyond the relatively-strict accountability norms of nation-states, malevolent non-State actors could develop the ability to automate killing on a massive scale.²¹ In 2018, Saudi Arabia destroyed two remote-controlled, explosives-filled vessels that were targeting the port of Jizan.²² More recently, in August of 2020, the Saudi-led coalition that was fighting in Yemen had intercepted and destroyed an explosive-laden drone over Saudi Arabia’s Abha International airport, which had purportedly been launched by Houthi rebels politically aligned to Iran.²³

Israel’s huge new offshore gas infrastructure presents an obvious and tempting target for its enemies, leaving its Navy spread thin. In 2012, the Lebanese Shi’ite militant group, Hezbollah, sent a drone deep into Israel, covering more than enough of the distance needed to reach some of these gas fields.²⁴ Senior Israel Defence officers claim that Hezbollah, having acquired additional armament, now has the capability to attack these vital offshore installations.²⁵

It is clear that the proliferation of AI provides terrorist groups with newer ways to threaten physical security, making the scope of protection and regulation even more challenging.²⁶ Despite the threats being quite as obvious as they are, further weaponization of AI is inevitable in this age of galloping technological and scientific development. It is worrying to note the enthusiasm with which nations such as, China, Russia, Israel, the United States, and the United Kingdom are engaged in the development of such weapon systems.²⁷

AWS and Human Rights

The development, deployment and utilization of AWS raise grave concerns for human rights, compromising the right to life, the prohibition of torture and other merciless, cruel, or debasing treatment or punishment and the right to security of individual, and possibly sabotaging other human rights.

The war between Armenia and Azerbaijan, which ended in November 2020, is a telling example of the use of autonomous systems for warfare. Drone attacks, striking Armenian and Nagorno- Karabakh soldiers and destroying tanks, artillery, and air defence systems, provided Azerbaijan with a major victory in the 44-day war.²⁸

However, this new feature of military conflict between the two countries turned the hostilities from a bloody, bare-knuckled ground fight into a deadly but seductive game of hide-and-seek against an all-too-patient – and often unseen – airborne non-human enemy. Hundreds died in less than two weeks, with extensive concomitant damage to more than 120 residential and administrative buildings in the town. The drone strikes forced the evacuation of around 6,000 residents, with most women and children seeking refuge outdoors.²⁹

It is a key standard of universal human rights law that nobody should be discretionarily deprived of life.³⁰ This is an arrangement of international human rights law that can never be suspended nor dissuaded, even “*in time of public emergency that threatens the life of the nation*”. The right to liberty and security of the person “*insures people against deliberate infliction of bodily or mental injury, whether or not the victim is kept or non-confined. For instance, authorities of State parties disregard*

the right to personal security when they unjustifiably cause bodily injury.” States “ought to also prevent and change unmerited utilization of force in law enforcement and ensure their populaces against maltreatment by private security forces, and against the dangers presented by excessive accessibility of firearms.”³¹

The UN Code of Conduct for Law Enforcement Officials (UNCCLEO) establishes the overall principle that “*law enforcement officials may use force only when strictly necessary and to the extent required for the performance of their duty*”.³² Therefore, it lays down the basic principle that no greater force than necessary ought to be utilized to accomplish the military aim.

In order to have at least the option to carry out policing and law implementation tasks in a legitimate manner, AWS would have to viably evaluate the degree of threat of death or serious injury, effectively determine who is causing the danger, consider whether force is important to diffuse the threat, have the option to recognize and utilize means other than force, have the ability to set up various methods of communications and policing weapons and equipment to take into consideration a graduated reaction, and, have accessible back up means and assets. To add to this complexity, every circumstance would require an alternate and unique response, which would make it be incredibly difficult for all this to be reduced to a progression of mathematically based algorithms and probabilistic calculations.

Despite the impressive and often incredible technological advances that have been witnessed in recent years, it does not seem possible that AWS, without meaningful and effective human control and judgment, would be able to comply with these provisions, especially in unpredictable and ever-evolving environments. It is important to note that arguments for prohibiting AWS are even more weighty when extended to ‘lethal’ AWS (LAWS). This does not, in any way, diminish the need to voice concerns over the significant threats to peace and global stability that arise even from AWS which have no direct lethal or sub lethal effect on human beings. A critical and relevant example concerns the utilisation of ‘swarm intelligence’ technologies, which may empower a proponent to launch significant assaults upon potentially uninhabited enemy infrastructure.³³

The Nagorno-Karabakh crisis has forced the international community to question the decision- making processes of AWS. These weapon systems due to their

autonomous nature lack the human skill to differentiate between an armed soldier and a mere civilian. An aerial drone- onslaught killed five civilians and injured ten others in the town of Martuni. Residents had been forced to tape up headlights or smear mud on their cars to obscure any markings that could make them a target. Public gatherings were discouraged, with people being urged not to spend too much time in any one place.³⁴ The high civilian-toll of such attacks forced a 12-year-old to poignantly state, “*I no longer love blue skies. In fact, I now prefer grey skies. The drones do not fly when the skies are grey*”.³⁵ The uncertainty and shock of drone strikes has resulted in an outpouring of immense hatred from civilians towards the deployment of armed drones.

This leads to another critical issue relevant to the deployment of autonomous weapons. A fundamental feature of the application and implementation of IHL is its predication on the individual with gradual progress towards a “*homo-centred instead of state-centred*”³⁶ approach, as demonstrated by concepts such as individual criminal responsibility, and command responsibility.³⁷ This extends to the specialised area of weapons law, including human involvement in the design, development, and employment of LAWS. Several IHL provisions reflect the need for human involvement. Among the legitimate issues distinguished was whether IHL, in view of individual obligation, could continue to apply to autonomous machines.³⁸ At the GGE, there was general consensus among States that whatever it is, however it is defined, the human agency aspect of IHL needs to be maintained in relation to LAWS. States and NGOs alike have referred-to and/or supported concepts such as “*meaningful human control*”,³⁹ “*human judgement*”,⁴⁰ “*human involvement*”,⁴¹ and “*human supervision*”.⁴² These concepts are used interchangeably and generally without definition.

A 2017 report jointly produced by the “World Commission on the Ethics of Science and Technology” (COMEST) and the “UNESCO Ethics Committee” examined “*armed military robotic systems (armed drones)*” and “*autonomous weapons*” in relation to their mobility, interactivity, communication, and autonomy capacity to take decisions without external intervention. The report considered that legal norms and engineering codes of conduct may apply, and that a cognitive robot, wherein decision-making is delegated to a machine, engages the responsibility of

designers and manufacturers, and application of the precautionary principle. The report emphasised that as a legal issue, the deployment of AWS “*would violate IHL. Ethically, they break the guiding principle that machines should not be making life or death decisions about humans*”. It went on to add, “*With respect to their technical capability, autonomous robotic weapons lack the main components required to ensure compliance with the principles of distinction and proportionality. Though it might be argued that compliance may be possible in the future, such speculations are dangerous in the face of killing machines whose behaviour in a particular circumstance is stochastic and hence inherently unpredictable*”. Effectively demolishing the clever but nevertheless fallacious ‘moral’ arguments advanced by proponents of AWS that were alluded to earlier in this article, the report unequivocally stated that “*The moral argument that the authority to use lethal force cannot be legitimately delegated to a machine – however efficient – is included in international law: killing must remain the responsibility of an accountable human with the duty to make a considered decision*”. The report strongly recommended that “*for legal, ethical and military- operational reasons, human control over weapon systems and the use of force must be retained*”.⁴³

Conclusion

In the ultimate analysis, only human beings can be held responsible for taking life, and autonomous robots are not able to comply with ethical, legal, and military norms. James Cameron’s cult film *The Terminator* depicted a dystopian future in which Skynet, a malevolent Artificial Intelligence (AI), initiates a nuclear war against humans to ensure its own survival. The film was released in 1984, well before the advent of modern forms of AI, but was prescient in foreshadowing some of the concerns that have come to dominate debates about intelligent computer systems. One of the most renowned of the world’s contemporary scientists, the late Stephen Hawking, described AI as the single greatest threat to human civilization.⁴⁴ This is not a view limited to scientists alone. Henry Kissinger, too, has warned that AI will change human thought and human values.⁴⁵

The technology that *The Terminator* films depicts is not yet with us, and a form of self-aware artificial intelligence described as ‘general AI’ is, according to most

analysts, some decades away. Yet, AI will probably continue to be integrated into weapons systems and used to enhance the precision, lethality, and destructiveness of the use of military force. Concomitantly, constant attention will need to be given to the legal, ethical, and strategic debates around human enhancement — including the physical and cognitive development and evolution of military forces, and how psychical and cognitive processes might change and evolve as weaponized AI is increasingly integrated into war fighting.

This leaves us with some big questions. Is weaponization desirable? Should the international community be seeking to control and stop these processes, and what effect might that have on non-military uses of AI? In this respect this author believes that the hyperbole-filled debate about “killer robots” misses the point rather widely. AI is already being weaponized and the debate about banning fully autonomous weapons systems ignores much of the weaponization processes pertaining to AI that are already in full swing. A final point for further reflection is the role that AI may play in multilateral fora such as NATO, and how the use of AI within multilateral security missions will be shared and harnessed among contributing nations. Developing common operational standards, requirements, and ethical guidelines for AI-enabled capabilities, will be both necessary and challenging.⁴⁶

We must also remember that autonomous systems *per se* are not necessarily bad. In fact, autonomy and AI in machines have enabled us to reach and explore Mars and depths of the oceans on our own planet. Even in warfare, such machines could provide a way to avoid placing human beings in situations that could put them in danger of life or limb. The debate then boils down to how humans use this capability. Although the world may be late in recognising the dangers of LAWS, we may still have time to ensure that the development of AI moves in constructive rather than destructive direction.

01 April 2021

ENDNOTES

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 - (b) “Exchange of Views of Finland”, UN Digital Recordings Portal, 15 November 2017.
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*International Legal Facets of
Marine Pollution*

Marine Pollution and the Shipbreaking Industry – Challenges and Mitigation-Options

Ananya Mukherjee and Bhavna Shri Harsha

Given the temptation of South Asian governmental bureaucracies to view the shipbuilding industry solely in economic terms and as a generator of employment, this article seeks to draw the attention of lay readers and government officials alike to the strengths and infirmities of the legal framework that regulates (or should regulate) the shipbreaking industry, with especial emphasis upon the environmental pollution that this industry causes.

A ship has a lifespan of about 20-25 years before it starts to deteriorate (largely due to corrosion) and is rendered uneconomical to operate.¹ Once this stage is reached, the ship is usually sold for scrap and towed to a shipbreaking yard, where it is comprehensively dismantled. Dismantling ships for re-sale and the re-use of and/or extraction of raw materials that go into the making of a ship is commonly known as shipbreaking. It is also known as ship-dismantling or ship -recycling. Shipbreaking is an enterprise of substantial magnitude. As the International Labour Organisation (ILO) points out, “*the average number of large ships being scrapped each year is about 500-700 but taking into account vessels of all sizes this number may be as high as 3,000*”.² Ninety per cent of shipbreaking in the world is conducted in Bangladesh, India, China, Pakistan and Turkey, in that order.³

Shipbreaking is predominantly a labour-intensive activity. For instance, a small merchant ship of, say, 40,000 deadweight tonnes (DWT), requires about 50 labourers working on it for some three to five months.⁴ At the shipbreaking yard, the metal plates that were once welded together to make up the ship’s hull, decks, cargo-holds/tanks and superstructure are now subjected to acetylene cutting-torches and

are broken-up into sizes that can be loaded onto trucks and then sold as scrap metal. The ships are gutted as if they were huge metal fish, and the many kilometres of power cables that every ship is provided with are removed. So, too, are assorted fittings such as chain cables, anchors, davits, cleats, bollards, fairleads, assorted ropes and mooring hawsers made of metal wire or man-made fibres, electrical and mechanical devices and fixtures, wooden and metal furniture, and even sludge (a mixture of residual fuel, water, lubricants, and dirt). All these, and many others besides, are recovered and then either sold to generator local scrap-dealers for resale, or simply disposed-off in the most convenient waste stream. Shipbreaking is considered to be one of the most dangerous of industries, not only for the workers themselves but also for the environment. The entire process is extremely challenging due to the sheer size of the ships, the complexity of the process, and the corresponding environmental obligations that go along with it. Clear evidence of the lure of profit, howsoever made, is to be seen in the manner that several shipping companies have successfully evaded rules and regulations designed to make the business of shipbreaking environmentally sustainable, by simply moving their operations to places that would enable them to avoid rising labour costs consequent upon the compulsory institution by Western countries of health and safety norms at work places, which then require companies to bear additional taxes and regulatory burdens. Until the 1970s, ships were mainly dismantled in Europe and in the USA,⁵ but over the past forty odd years, the industry has largely relocated itself to Asia in general and South Asia in particular. One of the more well-known reasons for this concentration of shipbreaking in the South Asian segment of what is often called the 'Global South' is,⁶ of course, lower manpower costs. Another is that *"India, Bangladesh and Pakistan, by virtue of their naturally favourable tidal conditions, are able to use the beaching technique for ship breaking which is less capital intensive and hence more cost effective in comparison to the advanced dry dock method"*.⁷ Of note, however, are other (and darker) reasons such as the relatively weak environmental laws, and even weaker implementation, as also far less developed health regulations, as compared to countries of the Global North.

The shipbreaking challenge, therefore, for a country such as India, is that of being able to strike an optimal balance between four major factors: (1) retaining comparative geo-economic advantage; (2) sustaining and increasing employment

opportunities; (3) maximising human health and safety; and (4) minimising adverse environmental and ecological impacts.

One of the world's largest shipbreaking yards is the Alang-Sisoya Yard in Gujarat, which oversees approximately 50% of the world's ship dismantling. Close to 90% of ships that are brought or sent to India for recycling end-up here.⁸ In 2019 alone, India dismantled 200 ships in Alang.⁹ All kinds of vessels like oil-gas tankers, box ships, bulk cargo ships, Roll-on-Roll-off cargo vessels (such as car ferries), passenger liners, and a wide variety of warships from India and abroad are dismantled here. Rather than being docked (as used to be the case in the US and Europe), these vessels are beached during high tide and the workers get to dismantling once the tide recedes.

During the process of dismantling, a huge volume of hazardous substances, including paint, heavy-metals and fire-fighting chemicals, leach into the soil and the foliage in the vicinity of the shipbreaking yard due to spillage. The metal and other forms of scrap have high concentrations of oxygen-depleting substances (ODS) that are retained in the material when it is carried off the yard and sent away for re-sale, and, because of this, there are far reaching effects of the activity.

In the year 2010, a study conducted on soil samples from shipbreaking yards in Bangladesh and Pakistan revealed dangerous levels of cadmium, chromium, lead and mercury.¹⁰ These materials enter the water stream and alter the physiochemical and biochemical properties of the entire coastal locale. Some of the crucial pollutants identified in this study included:

1. PCBs (polychlorinated biphenyls). These exist in both, solid and liquid forms, and are one of the primary substances contained in the cables of old vessels and new vessels alike. Their production was banned in 1979 because of how difficult it was to safely dispose them of. However, by the time the ban was brought into place, the US had already manufactured 1.5 million pounds (680388.555 kg) and these substances are, therefore, found in a lot of ships that were built in and around that period. This is one of the principal areas for concern as PCBs tends to leach into the soil and contaminate ground water. Reports from 2019 state that almost

69% of PCB concentration was observed in the city of Mumbai due to the port's activities, mainly shipbreaking that was occurring along the coast.¹¹ Long-term exposure to PCBs can cause liver damage, neurological damage, reproductive impairments, and cancer.¹²

2. **Bilge and Ballast Water.** Stagnant, contaminated water and other liquids in the form of condensed steam, and valve leaks are allowed to drain the lowest spaces of a ship's, which are known as "bilges". Both bilge- and ballast-water contain high concentrations of heavy metals that cannot be easily removed. More often than not, this water is just expelled from the bottom of the ship onto the beach area where it either enters the ocean or stays on the beach where it is constantly in contact with the workers. When these enter the ecosystem and the human food chain, they cause lead poisoning, anaemia, liver damage and cancer.
3. **Oils and Oily Water.** Copious amounts of oils and oily water are expelled from vessels during the dismantling. This oil remains on the beach and continues to choke the surface. During high tide, this oil is then swept into the water, cleaning the beach but polluting the ocean. The human and marine world is dealing with the ghastly effects of oil spills that are occurring in different water bodies and this is yet another major contributing factor.
4. **Other Substances.** While the aforementioned substances are primary culprits, there are several other toxic materials released as a consequence of shipbreaking. Electric batteries that are stacked in the vessel tend to leak because of rough handling. Sulphuric acid is present in enormous quantities on a vessel and can be dangerous when handled without enough precaution. Highly inflammable paints and preservatives are found on the inner and outer surfaces of the ship. Chemical substances are used to remove them, and it converts the heavy metals (lead, cadmium and mercury) into fine dust which settles on the clothes and skin of the workers and on the beaches. Dioxins are produced when cables are burnt to obtain copper and the particles get suspended in the air. Oxygen- depleting substances like CFCs and HCFCs are released into the atmosphere. Asbestos exists in masses naturally but when

the workers dismantle the pieces, they disturb the natural state and make the asbestos air borne. Once it enters the human respiratory system, it forms scar-tissue in the lungs and decreases the blood supply, which in turn causes the heart to enlarge. Sixteen percent of the workers at the Alang-Sisoya shipyard in Gujarat are suffering from asbestosis. An average sized ship contains up to 7 tonnes of asbestos which is often sold in the local communities after scrapping.¹³ Equally hazardous are the radioactive chemicals that are extensively used on ships for liquid-level indicators, smoke detectors and glow signs, which may well be along at low levels, but aggregate to dangerous ones with the steady corrosion endemic to ships that lie “between wind and water” for protracted periods of time. This indirect creation and informal disposal of hazardous substances routinely occurs in shipbreaking yards and the improper handling of these materials can have disastrous effects upon humans, the environment and the ecology.

If all this were not problematic enough, the location of the shipbreaking yards make them particularly susceptible to the effects of climate change. With rising ocean and tide levels submerging a larger area of beach and coastal areas, there is a sharply increased scope for accumulated pollutants to be washed out to sea. A single storm or even a higher than usual tide is more than enough. This redistribution of metals, pollutants and hazardous substances from the sandy area to the ocean resources has even wider repercussions because it enters the human ecosystem by way of consumption of seafood. Such pollution will continue to add pressure on the fishing, prawns and shrimp industry as well. There are simply too many problems that occur as by-products of the shipbreaking industry for it to be perceived solely through an economic lens.

One obvious solution to several, if not all these problems, is to relocate the shipbreaking yards themselves. However, there are a number operational and economic challenges attached to any such endeavour. In 2019, a Bangladeshi NGO, “YPSA”,¹⁴ reported that close to 60,000 protected mangroves had been destroyed to make way for ships to be able to access the shipbreaking yards located along the coast. The removal of the protection from coastal erosion that had been afforded by the mangroves led to a drastic shift in the coastline of the country, as it exposed much

larger swaths of the coastline (measured in terms of width as well as landward-extent) to extreme- weather events such as cyclones, storms and storm-surges.

In a disconcertingly enormous number of cases, countries and the shipping companies registered in them are either simply ignorant of the consequences of selling their ships to yards or are greedy enough to continue to do simply because it generates high profits and releases them from several responsibilities. By selling off their ship to such a yard, there are distancing themselves from the ship and any obligations that come with its disposal. They sell it to cash buyers (mostly dealers or intermediaries who deliver the ship to its destination for dismantling) who are linked directly with the yard. There are companies that specialise in the trade of end-of-life vessels, and they even help shipowners avoid the legal, financial or other risks that might arise if they were to deal with shipyards directly. At the level of companies themselves, as a 2019 report, titled “The Toxic Tide”, by the Belgium-based NGO “Shipbreaking Platform” states, *“No shipping company can claim to be unaware of the dire conditions at the beaching yards, still they massively continue to sell their vessels to the worst yards in the world to get the highest price for their ships”*.¹⁵ According to the report, the “*top dumpers*” in 2019 were: Evergreen Marine Corp (Taiwan), Waruna Nusa Sentana (Indonesia), and Zamil Group (Saudi Arabia), Tidewater (USA), Maersk (Denmark), SINOKOR (South Korea), Berge Bulk (Bermuda), Costamare (Greece), Angelicoussis Group (Greece), Continental Investment Holdings [CIH] (Singapore), and Mitsui OSK Lines [MOL].¹⁶

The Legal Challenges

On 28 November 2019, India ratified the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. Although the government and the shipping community have praised the Convention, it has been criticised by NGOs, environmentalists and human rights workers. Some of the reasons for this criticism are (1) it does not ban the beaching of ships; (2) it does not set stringent standards for the handling of hazardous materials; (3) it has no specific provisions for the protection of the workers; and (4) it does not place any embargo on transporting hazardous wastes to other countries. The fear is that an already dismal situation will be legitimized by this Convention.

India passed the “Recycling of Ships Act” in 2019, ratifying the Hong Kong Convention and laying down statutory regulations for all matters related to ship-recycling within the territory of India. This reflects an attempt to double the size of the ship-recycling industry by 2024 and to provide 1.5 lakh jobs. It is a significant flaw that this Act lacks any details regarding the handling of materials, the safety measures that are to be adopted for the workers, or any sustainability-requirements in the manner in which the dismantling is to occur.

Section 6 of the Act does specify that no ships shall have materials that are listed as hazardous, by the Central Government,¹⁷ but also states that ships may be allowed to contain such materials if the Central Government so allows. Thus, there is no strict application of any limitation; there is ample scope for interpretation as per convenience, and enough ‘wiggle room’ for offenders to get away with non-compliance. For instance, Section 11 of the Act states that no ship recycler may recycle a ship unless there is strict adherence to Section 12 of the Act. However, the following section lays out a long procedure that is far from the reality that is evident in the filth-ridden, toxic coastal regions in the vicinity of the shipbreaking yards. Likewise, Chapter V deals elaborately with the process of recycling ships but the expression “*environmentally safe*” is not mentioned even once. It just talks about “guidelines” without elaborating what these guidelines actually are. There are no strategies pertaining to the current shipbreaking yards and how this Act aims to include them within its ambit or convert them into registered facilities.

This astonishingly lackadaisical attitude, which effectively allows the government to duck its responsibility to coherently list out the obligations, processes and procedures in expression — or, if one was to be harsher — the disregard for environmentally safe practices — is the reason why there are tonnes and tonnes of waste, hazardous substances and toxic chemicals that are being pushed out into the oceans, degrading and destroying the lives of not just the workers at the shipbreaking yards, but the fishing community and the general coastal community, as well. There seems to be a major disconnect between the ground reality and the policy, and a wide chasm between policy makers and industry experts (the latter including environmentalists, marine engineers, marine biologists, maritime lawyers and thinkers).

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)— and especially the Ban Amendment (Decision III/1), adopted at the third meeting of the Conference of Parties (COP) — specifically prohibits OECD countries, the EU and Liechtenstein,¹⁸ from exporting hazardous waste to developing countries and specified that end-of-life vessels would also come under the category of hazardous waste. There are absolutely no exceptions and no reservations under this amendment. However, by the simple expedient of not ratifying the Amendment, nation-states are able to retain the right to decide whether or not they would import/export these waste materials, even if the Convention explicitly prohibits such trade.

This brings one to another major problem of the industry — Flags of Convenience. Typically, a ship is registered under the flag of a particular State (called the Flag State), which then has the primary obligation to ensure the safe and sustainable disposal of the ship. However, more often than not, there is a major discrepancy between the actual owner of the ship and the flag flown by the ship. There are some States that have lower taxes and regulations and poorer standards of adherence to safety protocols. The flags of such States are known as ‘Flags of Convenience’ (FOC). FOC compete for ship registrations and the profits are split between the original beneficiary and the State. In any case, shipowners can quickly and very easily change their flags so to evade all responsibility by a move that is popularly called ‘flag hopping’. The United Nations Conference on Trade and Development (UNCTAD) has reported that nearly 73% of the world’s fleet was sailing with the flag of a country other than that of the original country.¹⁹

Panama, Marshall Islands and Liberia are the top three FOC countries. They are often amongst ‘black’/‘grey’ flagged countries, which colours denote the lowest adherence to international regulations and laws. This poses a much bigger problem than just the sustainable disposal of ships. The IMO functions in such a way that any Convention comes into force when countries that represent a certain degree of the world’s shipping fleet have ratified it. Because of this, the head of the delegation of Panama is nicknamed ‘Mr IMO’. These small countries, with no shipping corporations of their own, call the shots simply because other countries switch to their flags at the end of the ship’s life. This indirectly gives massive power to the

shipping corporations to tip the balance in their favour as and when required. FOC are hardly used during the operational life of the ship, but they are extremely popular during the last voyage of the ship, as this stratagem allows the shipping companies to bypass all the regulations placed by the original country vis-à-vis ship-recycling and to transport the vessel with impunity to shipbreaking yards in India or other South Asian countries.

Recommendations

The overarching recommendation is, of course, to tighten India's "Recycling of Ships Act, 2019". However, since this would be a convoluted process, an easier and quicker solution would be to issue stringent regulations under the existing Act.

The relocation of shipbreaking yards is a major recommendation that has been made by numerous industry experts, so that ships cannot simply be beached. However, this would immediately remove the geographical advantages that countries such as India, Bangladesh and Pakistan enjoy. Perhaps the more viable approach would once again be to formulate and implement much stricter regulations under the existing "Recycling of Ships Act, 2019" that would minimise or eliminate pollution, while simultaneously bring the entire shipbreaking industry under the purview of other extant pieces of Indian legislation that govern the prevention of pollution, such as "The National Green Tribunal Act, 2010", "The Air (Prevention and Control of Pollution) Act, 1981", "The Water (Prevention and Control of Pollution) Act, 1974", "The Environment Protection Act, 1986", and, most important of all, "The Hazardous Waste Management Rules, 2016".

There is an urgent need for public-private partnership to ensure a better standard of care and safety. Extensive training, the advancement of connectivity, the insistence upon standardised protective gear, clean technologies, and a strict adherence to approved channels of waste-management can best be ensured by robust public-private partnerships. Implementation needs to stratagem be ensured by interdisciplinary committees made with different ministries working in tandem with each other. (Ministry of Labour, Shipping, Environment, Energy, Commerce, etc.).

The overall statutory framework urgently requires to be made more comprehensive and must include internationally established, standard operating processes and procedures, inspection regimes, the establishment of laboratories and waste-management plants, etc.

The Government must proactively create conditions that incentivise Indian shipowners to register their vessels in India, while disincentivising them from registering ships under foreign flags, especially Flags of Convenience. Towards this end, the importance of the need to establish a ‘genuine link’ between the Flag of Registry and the owner of the ship cannot be overstated.

The Government needs to take advantage of best practices of other countries, especially those of the EU. In this context, there is much that might be gained from the 2016 EU report that introduced a financial incentive to promote safe and sustainable shipbreaking activities.²⁰ This report, *inter alia*, recommends that a “ship recycling license” be given to all ships visiting EU ports, irrespective of the Flag State. Contributions are to be collected from all ships on every visit and the cumulative amount is to be set aside and used during the end-of-life voyage and recycling processes, with the condition being that the amount collected would be disincentivising paid to the owner only if they the is to be recycled at an approved and vetted facility.

Stricter penalties need to be imposed by courts and legal authorities, drawing from the precedent set by the “Sea trade Case”,²¹ where the Rotterdam District Court imposed a heavy fine upon the shipping company for sending four of its vessels for shipbreaking in contravention of the EU Waste Shipment Regulation. The shipping company was held criminally liable and was made to pay for all the evasions they undertook.

Due diligence in respect of human rights, along with a stakeholder-analysis, involving the fisheries sector and other locals affected, along with a strict implementation of guidelines released by the IMO, ILO and UNEP, are other crucial measures that are very strongly recommended.²²

Conclusion

India, being home to the largest shipbreaking yard in the world, should lead the industry by example. As things currently stand, however, it has a long way go before it can establish responsible, environmentally sensitive leadership in terms of shipbreaking. International Conventions will always have shortcomings in terms of implementation and execution as it is difficult to bind sovereign countries by stringent rules which might not be favourable to them in the long run. The Western one-size-fits-all approach is naive if not condescending and generates significant levels of reluctance in countries whose economies are dependent on this industry.

The adoption of a *laissez faire* approach by countries such as India, Bangladesh, and Pakistan, on the other hand, turns out to be exploitative on a number of levels. Environmentally sensitive and sustainable shipbreaking is an important segment of the Blue Economy that India professes and if New Delhi wishes to be taken seriously in executing potentially-visionary initiatives such as the Indo-Pacific Oceans Initiative (IPOI), legislation — and far more important, the execution of legislation — is critical. Neither policy makers nor policy shapers can evade their responsibilities towards the cessation of rampant and wanton pollution that currently characterise India's shipbreaking industry. There is no alternative to sustainable industrial practices that are structured around the imperatives of safety and welfare of the workers, the safety of the locals, and the crying need to bring an immediate halt to the ongoing severe degradation of the environment. The shipbreaking industry itself needs to lead the way.

05 April 2021

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Role of Marine Insurance in Oil Pollution in India

Abhishree Manikantan

All too often, *“the asserted divide between public and private international law suggests that the two occupy different, mutually exclusive domains. On the one hand, public international law comprises the legally binding rules and principles governing States’ interactions. On the other, private international law concerns the civil and commercial interactions of private actors — who might hail from different States but who are subject to domestic law regarding jurisdiction, the applicable law, and the enforcement of judgments. While public international law is commonly regarded as truly international, private international law is generally considered to be international only in name. Distinctions along these lines no longer reflect, and perhaps never reflected, reality”*¹ Within the maritime domain, a striking example of the porosity between “public” international maritime law and “private” international maritime law is that of maritime pollution — whether caused by invisible chemicals, or by far more visible forms of plastics (including micro-plastics), or (and this is arguably the most visible of all) by oil pollution. The carriage of cargo by sea is typically considered under the corpus of private international law, with matters being regulated through the contracts of carriage agreed upon by the parties. However, environmental harm, including pollution, is governed by public international law through agreements between States.² Compensation to victims of marine environmental damage, which is one of the focal points of this article, is thus a matter relevant to both private and public international maritime law.³

Crude oil, with its manifold applications, is the backbone of industrialised nations. It has been indispensable to countries across the globe since the advent of the industrial revolution. Oil fulfils many developmental requirements, most prominent amongst which is, of course, the supply of energy.

More than half of the world's crude oil is transported by sea. India is a major market for crude oil and, with an annual refining capacity of 249.4 million tonnes, it is the second largest refiner in Asia.⁴ However, oftentimes during transportation, carrier vessels meet with accidents that lead to crude oil spilling into the oceans. Notwithstanding the significant reduction in the number of oil spills since 1970, these accidents remain a serious cause of environmental pollution.⁵ This paper will discuss the role of insurance coverage in tackling oil pollution in India.

Oil Pollution: More Than an Environmental Concern

Accidents at sea often have lasting consequences, leading to losses of human life or damage to property. Ship-related accidents and oil-rig catastrophes are common causes of oil spillage in the oceans which, due to the near-instantaneous generation of toxicity in the surrounding environment, results in the loss of marine life.⁶ Besides the loss of aquatic flora and fauna, such events also have significant economic repercussions. For example, after the *Deepwater Horizon* oil rig in the Gulf of Mexico exploded, a staggering 2.52 million gallons of oil per day leaked into the surrounding waters.⁷ Oil spills cause coastlines to turn tarry black and picturesque landscapes to be tainted with inky black oil slicks. Thus, apart from the destruction of the surrounding marine life, several important industries, especially tourism, fishing, and, the hospitality (food and beverage) industry are also adversely affected.⁸ Consequent upon the *Deepwater Horizon* accident, Florida's tourism industry alone suffered a staggering loss of USD 3 billion. Several businesses located along the coastline were forced to shut down due to property damage and associated losses, leading to significant short and long term economic uncertainty in the region.⁹

It is clear that given the environmental hazard created by oil spillages and the very substantial downstream monetary losses, a comprehensive regulatory framework needs to be put in place in order to contain the damage caused by such incidents and return life to as close to "normal" as possible, at the earliest. Such a framework must contain regulations for preventing spillage incidents in the first place, and, if accidents do occur, it must encompass rules and processes to: (i) determine liability of all involved parties, (ii) provide adequate compensation to mitigate the economic

damage caused, and, (iii) incorporate an effective and expeditious system for the necessary environmental clean-up.

Determining Liability in an Oil Spill: Common Law Perspective

Apart from the environmental damage and economic setbacks, the victims involved in such oil related accidents are in large numbers. The question of the extent to which shipowners can be made liable for the loss is, therefore, one that is particularly germane.

Under circumstances where the spill is caused by patent negligence of crew members or is the result of defects in the ship due to lack of maintenance by the shipowner, it is easy to impute liability under common law, since it would appear that the rule of strict liability, as evolved in the case of *Rylands vs Fletcher*,¹⁰ can be readily applied. However, a theoretical approach to the issue may conversely suggest that since oil tankers are specifically designed to transport oil, there can be no “non-natural use of land” which is a pre-requisite for applying the rule of *Rylands*. Thereby, a tort of public nuisance may seem more applicable under such circumstances.¹¹

Another inhibiting factor in applying a purely common-law-based approach to the problem at hand is the large number of parties involved. Corporate trading in oil generally involves carriers owned by corporations of one country, chartered by another and sailing under the flag of a third nation. In such circumstances, imputing liability is arduous and the delivery of justice takes a considerable amount of time. Further, while tort law primarily focusses on individual rights and liabilities, in oil-spill cases, the environmental damage caused results in the encroachment of collective rights. Thus, it has been recognised that a common ground must be reached in order to streamline the process of determining liability and providing compensation under these circumstances.¹²

International Legislative Framework

Given that marine oil pollution often occurs on the high seas as a result of seaborne trade, it is classified as an international concern.¹³ It cannot, therefore, be solved

by the actions of a single nation acting alone. Consequently, since 1954, constant efforts have been made to devise international conventions that could hold ship-owners liable for the pollution caused by their vessels. This is also an embodiment of the “polluter pays” principle, which demands that the enterprise causing the harm should pay for the damage.¹⁴

The robust international framework in existence today is a result of the collaboration of nations under the auspices of the International Maritime Organisation (the erstwhile Inter-Governmental Maritime Consultative Organization). The international regime essentially has two sets of conventions that co-exist to compensate oil pollution victims via a multi-layered system in which the vessel’s liability is augmented by fund-based compensation.

As a result of the catastrophic *Torrey Canyon* incident of 1967,¹⁵ the International Convention on Civil Liability for Oil Pollution Damage (“CLC”), 1969, and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (“Fund Convention”), 1971, were adopted.¹⁶ These conventions, which set the groundwork for the international regime, were later superseded by the 1992 CLC and 1992 Fund Convention. Where the 1969 CLC established strict liability of the shipowners in cases of oil spills but limited it up to a maximum aggregate amount by the ship’s tonnage, the 1992 CLC widened the geographical scope of the Convention and increased the maximum limits of compensation for victims. The 1969 CLC also introduced the concept of compulsory liability insurance. Further, the Fund Convention set up the International Oil Pollution Compensation Fund (“IOPC Fund”) to provide damages in excess of the shipowner’s liability, albeit still subject to a monetary cap. At present, the 1992 and 1969 CLC Conventions co-exist at the international level. However, the 1971 Fund Convention ceased to have effect on 24th May 2002 and all second-tier compensation is now available only under the 1992 Fund Convention.¹⁷ An optional third tier of compensation is provided by the 2003 Supplementary Fund Protocol. Adopted after the 2002 *Prestige* incident,¹⁸ it established a supplementary IOPC Fund with a maximum compensation amount of USD 1,024 million. The Protocol presently has 32 State Parties.¹⁹

Apart from the CLC and Fund Conventions, there exist the International Convention on Civil Liability for Bunker Oil Pollution Damage (“Bunker Convention”) and the Convention on Limitation of Liability for Maritime Claims, 1976 (“LLMC”). The Bunker Convention has many similarities with the CLC, most prominent amongst which are the strict liability of ship owners, the limitations upon liability, and, the system of compulsory insurance. Meanwhile, the LLMC elaborates upon the circumstances under which shipowners may limit their liability. It must be noted, however, that the LLMC, vide Article 3(b), does not apply to claims arising out of the CLC.

Insurance and Liability: An Intersection of Concepts

The primary goal of the international regime discussed above is adequate compensation for victims of oil pollution. However, the goal of any such system ought to be deterrence. As an incidental occurrence, the international framework does, to an extent, contribute to deterring future oil accidents. Curiously, this is made possible through the insurance provisions briefly touched upon earlier in this article.

First of all, the CLC imposes compulsory insurance upon shipowners. Moreover, every vessel is required to carry proof of such insurance. Victims of oil pollution are then given direct access to the insurers (vide Article VII of the CLC) so the former can bring actions directly against the latter. It must be noted that this is a departure from the general rule of privity of contract. Compulsory insurance under the international regime has a two-fold impact. In the first instance, it ensures that companies cannot escape liability by hiding behind the corporate veil of the one-ship company system that is prevalent in the shipping industry. In the second instance, compulsory insurance forces ships from non-contracting states, too, to purchase such insurance in order to trade with CLC contracting parties. The obligations under the convention are such that ships cannot escape compulsory insurance by asserting that they belong to a non-contracting state party.²⁰

Secondly, insurance premiums paid through the above mechanism (and other associated ones) are reflective of the compensation paid to the victims of oil pollution.

Thus, the flow of logic is simple: high damage leads to high compensation, which is effected through high premiums paid by the ship owners. In the interest of their own monetary well-being, ship owners are compelled to utilise heightened standards of care and caution, which effectively leads to less incidences of accidents.²¹

Finally, the second-and third-tier compensation schemes through the IOPC and Supplementary Funds also play a minor, indirect role in deterring seaborne incidents. Oil companies are contributors to both the aforementioned funds, and, more often than not, are also key players in the oil trade. Therefore, safety — of the ships themselves, as also the oil stored aboard the ships — is of paramount importance to these companies. They consequently exert pressure upon the crew of these ships to exercise high levels of diligence, and also influence ship owners to maintain their vessels to the highest possible standards. In this manner, the insurance regimen contributes to deterrence as well.²²

It must also be noted at this juncture that even the above-discussed scheme would fail if the insurers were to be able to escape liability by denying their relationship with the ship owners or adopt any other such defence. An important premise of insurance law is that the insurer's liability is coexistent with that of the insured. It, therefore, cannot exceed the liability that the insured himself is under. Article VII of the CLC thus attempts to restrict the defences that insurers might invoke, by limiting them to the defences available to the ship owners. Therefore, the “pay to be paid” or the “pay first” provisions that are hallmark of the English laws are invalidated under this regime. Further, an insurer cannot employ the defence of the insured failing to pay the premium. Most importantly, however, under the international regime, an insurer cannot escape liability by asserting breach of warranty conditions such as seaworthiness of the vessel. A prominent exception here is damage caused due to wilful misconduct of the shipowner. In this regard, Article VII (8) of the CLC should be read in conjunction with Article V(2). The most common instance of wilful misconduct is scuttling of the ship.²³

Therefore, it is eminently clear that under the international regime, insurance is wielded as an effective tool to ensure compensation is delivered to the victims of oil pollution while also acting as a deterrent against such incidents.

Liability Under the Indian Legislative Framework

Under Indian law, liability for maritime accidents, including oil pollution, is imputed through international treaty law, judicial decisions and the relevant provisions of the Merchant Shipping Act, 1958 (“MS Act”), and, the Marine Insurance Act, 1963 (“MI Act”).

The MS Act has three parts devoted to regulation of damage caused by oil pollution. Part X-B discusses civil liability for oil pollution damage, Part X-C describes the international oil pollution compensation fund, and Part XI-A discusses prevention and containment of oil pollution at sea. Parts X-B, inserted through the amendment of 1983,²⁴ and X-C, inserted by the amendment of 2002,²⁵ are relevant for the purposes of this paper. It must also be noted here that the MS Act applies to Indian commercial ships as well as all foreign ships at port in India. In cases of collision and maritime accidents, the MS Act fixes the liability of shipowners in proportion to the fault of the parties. However, ship owners are precluded from limiting their liability in cases of negligence.²⁶

India acceded to the CLC in 1987. Even though it later went on to denounce this convention,²⁷ India remains a party to the 1992 CLC, and the salient features of the relevant national legislations persist. The provisions of the convention are thus applicable to Indian ships and accidents, particularly after the amendment Act of 1988 inserted the relevant sections into the MS Act.²⁸ In line with Article VII of the CLC, ships with cargo of 2000 tonnes of oil, or more, are required to procure a certificate of liability insurance.²⁹ No ship is permitted to enter or leave Indian ports / India’s Territorial Sea without such a certificate.³⁰ Moreover, oil spills are compensated through the CLC and the Fund Convention in the manner discussed in the preceding sections, as enshrined in sections 352U to 352W of the MS Act.

Apart from the CLC, India is also a party to the LLMC, 1976.³¹ It is in accordance with this convention, codified as part X-A of the MS Act,³² that ship owners may limit their liability in respect of oil pollution damage under the prescribed circumstances.³³ The Supreme Court of India has pointed out that the purpose of limiting liability is to protect the ship owner from claims exceeding the value of the ship and the cargo.³⁴ Any ship owner who wishes to avail the benefit of such limitation of liability must

make an application to the respective High Court for the constitution of a limitation fund. This fund is the beneficiary of any right of subrogation arising from payment of damages. It is important to stress at this juncture that only the ship owner may be held liable under the MS Act. However, as mentioned previously, the LLMC does not apply to claims arising out of the CLC.

Conclusion and Recommendations

As discussed at the very outset, oil pollution is a global issue. The international regime evolved over the years is an admirable effort to furnish a global solution for a global problem. While no system is perfect, it is apparent from the foregoing discussion that the CLC and Fund Conventions, taken in tandem, do cover most major grounds for concern with regard to marine oil pollution. The major drawback is the fact that ecological damage does not play a very major role in the evaluation of damage, i.e., the major focus remains upon mitigating the economic impact of the oil spillage.

India, with its large coastline, is vulnerable to the deleterious effects of oil spills. Major disasters do have the capacity to disrupt much more than picturesque landscapes, beaches and islands. The foregoing discussion has shown that India follows the civil liability regime promulgated by the CLC and Fund Conventions. However, certain lacunae in the Merchant Shipping Act that imbibes these conventions bear mention at this point:

First, both the CLC and the MS Act hold ship owners liable for “*any pollution damage caused by oil which has escaped or been discharged from the ship as a result of the incident.*”³⁵ The wide ambit of this provision, though applicable to immediate harm caused to marine flora and fauna, cannot be extended to the damage to natural resources as a whole. This precludes victims such as fishermen from applying for compensation. There needs to be a system in place to allow the poor and underprivileged to easily gain compensation for the loss of their livelihood.

Secondly, building upon the first lacuna, India does not have a provision for imputing criminal liability upon persons causing such devastating damage upon the

marine ecology. While this issue may be resolved by characterising oil pollution as a public nuisance and making it actionable under the Indian Penal Code, 1860 (“IPC”), it must be noted that the IPC only provides a sum up to Rs.200/- as compensation in these cases.³⁶ Oil being a combustible substance, such incidences must at the very least lead to imprisonment of up to 6 months and a fine of up to Rs.1,000/-.³⁷ Alternatively, as the offence essentially relates to “stealing” the livelihood of vulnerable sections of society as well as loss of important marine ecosystems, the gravity of the offence may, at the minimum, be equated to robbery.³⁸ However, it is the author’s opinion that the fines in these cases must attempt to be proportional to the “priceless” value of nature and account for the required environmental clean-up operations. This is particularly true in circumstances wherein the damage is a result of wilful misconduct or gross negligence. Therefore, it is apparent that a change in the legal framework is necessary.

Finally, holding solely the shipowner liable for damage is detrimental to the process of imputing liability. Persons intimately involved in the incident, such as the master of the crew and relevant port authorities responsible for coordination, must also be held liable for the role they played in bringing about the incident (such as the *MSC Chitra-Khalijia III* collision).³⁹

At their very core, oil-related accidents in the oceans are eminently avoidable disasters that have a significant and entirely deleterious effect on the environment. Looking at the status quo in this era of ecological breakdown, preventing future oil-related catastrophes should be considered the need of the hour. While the present international system is fairly well-armed to meet the needs of the industry, it cannot be considered sufficient. The Indian domestic implementation of the same must also be overhauled in order to develop more effective environment protection methodologies. The enactment of more stringent laws to prevent, deter, and later, manage oil disasters as necessary, is indeed an imperative that can no longer brook delay.

20 April 2021

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*Climate Change and
International Law*

Decoding Marine Protected Areas in India – Understanding the Legal and Policy Frameworks, and Analysing the Challenges in Marine Conservation in the EEZ and Transboundary Areas

Eklavya Tiwary and Dr Pushp Bajaj

In recent decades, there has been a growing push, at the international and national levels, to protect and conserve key marine ecosystems around the world. This is typically done by establishing what are called ‘Marine Protected Areas’ or MPAs, which limit human influences and undertake conservation efforts in areas of high ecological importance. Humans, in the era of *Anthropocene*, have become the major driver for planetary changes in the physical, chemical and biological properties of the air, land and the water. While this is being debated among scientists, it is agreed upon by the broader scientific community that humans are increasingly causing significant changes in the climate and ecosystems.¹ These changes are more apparent and of greater concern in the global ocean. Moreover, there are some major concerns among experts over the effectiveness of the conservation and monitoring measures adopted in MPAs which can vary widely amongst different countries and even amongst states, provinces and such like administrative divisions within a given country.

The world’s ocean basins, in aggregate, absorb about 90 per cent of the excess heat generated by the greenhouse gases in the atmosphere, which leads to rising ocean temperatures at a rapid pace. Oceans also absorb almost one-third of the excess carbon dioxide (CO₂) in the atmosphere. This CO₂ forms carbonic acid when dissolved in water, leading to increasing ocean acidification.² Combined with the overexploitation of the ocean’s living and non-living resources, and the ever-growing marine pollution due to untreated sewage discharge, industrial effluent run-

offs, pollution from ships, and land-based plastic pollution, these environmental alterations pose a direct and imminent threat to marine biodiversity and, in turn, to the millions of coastal and hinterland residents that rely on the essential services provided by the rich marine ecosystems globally. Also, the incalculable ecological, cultural, and socio-economic value added by marine ecosystems is not lost on international experts and scientists, government officials, and the coastal populations. As per the data from a comprehensive global analysis, currently established MPAs account for around 6.4 per cent of the global ocean area, with an additional one per cent having been designated for MPAs but not yet formally established as such.³

Evolution of the Global Discourse on MPA

The praxis of establishing Protected Areas (PA) in global conservation efforts can be dated as far back as the first World Conference on National Parks that was held in Washington, USA, in 1962. Hosted by the International Union for the Conservation of Nature (IUCN), the event was a first in a chain of international conferences, held approximately every ten years, which focussed on the role of PAs in the protection and conservation of natural biodiversity.⁴ This newfound emphasis on PA measures subsequently fuelled the establishment of Marine Protected Areas (MPAs) in the 1970s and 1980s, with an estimated one thousand MPAs having been established in 87 countries by 1986.⁵ Further, the lack of a binding international agreement on the conservation of biodiversity was remediated by the Convention on Biological Diversity (CBD) in 1993. With the approval of 193 nation-States, the CBD remains the overarching document necessitating biodiversity conservation. Article 2 of the CBD defines a Protected Area as:

*'a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives.'*⁶

This definition exhibits indifference to the terrain and was intended to incorporate both, terrestrial and marine areas. However, the generic nature of this definition allowed for the continued lack of understanding on the activities permitted in and the limitations set by MPAs. This dilemma was partially offset in 2004 when the Conference of Parties to the CBD interpreted the umbrella definition in the context of the marine environment as:

“an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings.”

This certainly provides a more detailed description. The emphasis on ‘reserved by legislation or other effective means, including custom’ is of particular significance, being a first in recognizing the role of community traditions in Protected-Area management.⁷ Yet, the definition of Protected Areas in Article 2 of the CBD still needed to be remediated. In 2008, the IUCN provided a new definition that has since been the central reference for governments worldwide:

‘A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.’

The IUCN has since remained a key player amidst a variety of institutions in guiding the developments of PAs worldwide. In 2013, it published ‘Guidelines for Protected Area Management Categories’, which elaborate the interpretation of each term in the above definition.⁸ These guidelines were also intended to resolve widespread confusion about varying regulations in PAs. They provide a structured framework by assigning six different categories of PAs, based on differentiated regulations. In the context of MPAs, the document identified these categories to span from Category I (no-take MPAs with zero extraction) and Category VI (with sustainable take of specific resources) with an increasing easing of restrictions as one moved from Category I to Category VI.⁹

However, independent analyses have shown that the IUCN classification of MPAs remains inadequate, which leads to problems in the implementation stages. In many cases, a single MPA itself includes different zones with varying regulations, with some sections being ‘no-take’ and others allowing multiple use, which complicates the assessment of conservation effectiveness and public perception. Often, the established regulations within MPAs are loosely described and may be poorly aligned or insufficient to fulfil the stated objectives. The cumulative effect of this manifests

in faulty monitoring and management of MPAs, allowing them to exist solely as superficial ‘paper parks’. Recently, a more consistent classification of MPAs has been suggested, which identifies each zone within an MPA and assesses the regulations based on their respective impact on biodiversity. This approach classifies MPAs as well as each zone individually, identifying the types of uses permitted within the MPA zone and the overall MPA, so as to gain a more accurate understanding of real-time conservation.¹⁰

Biodiversity Targets: Then and Now

The ninth meeting of the Conference of the Parties (COP 9) to the CBD, held in 2010, laid out 20 comprehensive targets called the ‘Aichi Biodiversity Targets’. Target 11 committed to the following area-based conservation goal:

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscapes and seascapes.

This global commitment to cover “10 per cent of coastal and marine areas” was subsequently adopted in the UN’s Sustainable Development Goals (SDG 14.5) and was successful in at least stimulating countries to develop Protected Area networks and utilise “other effective area-based conservation measures” which were defined during the COP 14 to the CBD in 2018 as:

‘a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic and other locally relevant values.’

The decadal report of the CBD, entitled “Global Biodiversity Outlook – 5”, released in September 2020, noted an increase in MPAs from 3% in 2000 to 7% in 2020 in respect of global coastal and marine areas. The report further claimed that

the 10% target was likely to be achieved by the end of the year and may be exceeded if and when *'other effective area-based conservation'* measures are included.¹¹

However, as of March 2021, the World Database on Protected Areas reported that only 7.65 per cent of the global seas had been covered.¹² It should, of course, be borne in mind that these aggregated statistics often differ from those reported by individual countries due to differences in methodologies and datasets used to assess protected area coverage. The PA coverage of India itself is undermined greatly in the database — the reasons for which certainly call for further scrutiny. Nevertheless, it cannot be denied that 'Aichi Target 11' has been only partially met. The race to reach targets is expected to intensify as the world moves to more ambitious conservation commitments. On 11 January 2021, for instance, France hosted the "One Planet Summit for Biodiversity". Amongst several other undertakings, the summit launched the "High Ambition Coalition (HAC) for Nature and People". This is a coalition of 50 countries aiming to achieve a global agreement to protect at least 30 per cent of the planet's land and 30 per cent of its oceans. The HAC intends to influence the decisions of the fifteenth meeting of the Conference of Parties (COP 15) to the CBD, which will convene later in 2021, which seeks to establish global biodiversity targets for this decade (2020-2030).¹³

To uphold the commitments of the Aichi targets, the GoI formulated twelve "National Biodiversity Targets" (NBT), which are listed as addendums to the "National Biodiversity Action Plan" (NBAP) of 2008. NBT 6 under the NBAP Addendum (2014) seeks to address the protected area coverage as envisioned by Aichi Target 11. The target states:

"Ecologically representative areas on land and in inland waters, as well as coastal and marine zones, especially those of particular importance for species, biodiversity and ecosystem services, are conserved effectively and equitably, on the basis of protected area designation and management and other area-based conservation measures and are integrated into the wider landscapes and seascapes, covering over 20 % of the geographic area of the country, by 2020."

The recent progress on achieving this quantitative target has been documented in India's 2018 report to the CBD. The report provides a detailed update of NBT

6 and concludes that the 20 per cent target of Protected Area and Other ABCM has been largely accomplished.¹⁴ While this success is commendable, the target does not distinguish between terrain-specific PA coverage but, instead, demands 20% coverage over any “*geographic areas*” of the country. This means, the success of the larger target may not necessarily translate to an increase in MPAs. While in this case an increase in MPA coverage has, indeed, been noted, there is little doubt that such targets need to be drafted with far more precise language so as to promulgate commitments unambiguously, ensuring holistic management of both terrestrial and marine ecosystems.

Upon the finalisation of the next set of decadal PA coverage targets at the COP 15 to the CBD later in 2021, an amendment to the NBTs will likely follow. As a global target of 30 per cent of land and 30 per cent of ocean coverage by 2030 is expected, the national amendments must ensure adequate PA coverage and, moreover, must make a clear distinction between the commitments for marine and land-based PA coverage.

UNCLOS – MPAs

The United Nations Convention on the Law of the Sea (UNCLOS) 1982, entitles every coastal or archipelagic State to a varying degree of access and jurisdiction over its coastal seas. A belt of 12 nautical miles (nm) breadth, measured to seaward from the baseline (as delineated by the nation on its navigational charts and generally represented by the low-tide line along the coast, or as formally promulgated by it) corresponds to the “Territorial Sea” where the State enjoys full sovereignty and jurisdiction. Going farther seaward, a maritime zone, 24 nm in breadth, measured from the same baseline, is denoted as the “Contiguous Zone”. Here, the coastal State’s jurisdiction is limited to its fiscal, immigration, sanitary, and customs laws. An even broader zone, 200 nm in breadth, but once again measured from the same baseline, corresponds to the Exclusive Economic Zone (EEZ).

Within the EEZ, the State has exclusive rights over all living and non-living marine resources, including those on the seabed and in the subsoil but enjoys no

other sovereign rights or jurisdiction. Finally, if and where certain specific conditions prescribed by UNCLOS are demonstrably met, yet another belt, called the “Continental Shelf” (or the “Legal Continental Shelf”) might exist, whose breadth can extend even beyond the outer limits of the EEZ, to a maximum limit of 350 nm from the same baseline. Here, a coastal State enjoys exclusive rights over all living and non-living marine resources on the seabed and in the subsoil but not those in the water column between the seabed and the sea surface. If one were to compute the total area, including the “Legal Continental Shelf”, generated by the Indian peninsula and the country’s island territories, “maritime India” would be seen to encompass a sea area very nearly equal to the total land area of India.

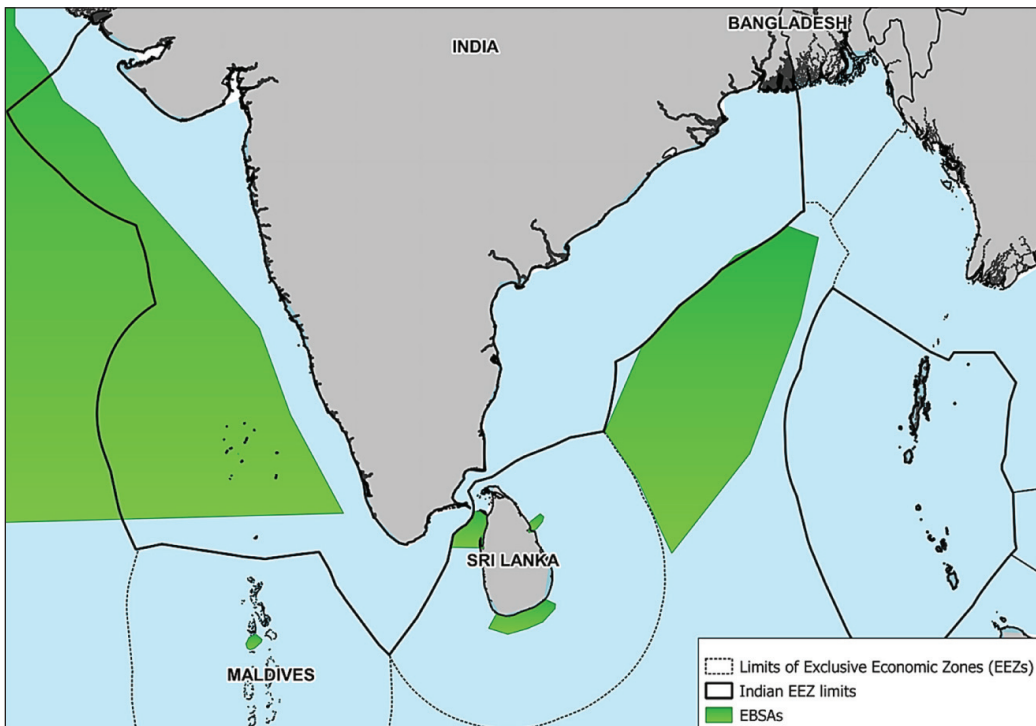


Figure 1: Ecologically or Biologically Significant Areas (EBSAs) in/ around India’s EEZ. Image created by author, Mr Eklavya Tiwary.

Data Source: “Ecologically or Biologically Significant Marine Areas,” Convention on Biological Diversity, <https://www.cbd.int/ebsa/ebsas> and “Marine Gazetteer Placedetails,” Marineregions.org, <https://marineregions.org/gazetteer.php?p=details&id=8480>.

Biological Diversity in Indian Waters

In toto, there are currently 25 MPAs on the mainland and 130 MPAs in the islands of India. The “Ninth Conference of Parties” (COP 9) to the international “Convention on Biological Diversity” (CBD) adopted five criteria for the identification of suitable areas for establishing MPAs, of which one required the site to have been identified as an “Ecologically or Biologically Significant Area” (EBSA).¹⁵ Indeed, as depicted in Figure 1, India’s EEZ overlaps several ecologically important and well-recognised EBSAs. These include the “Oxygen Minimum Zone” (OMZ) in the Arabian Sea, which contains a highly diversified ecosystem dominated by mesopelagic fish. In

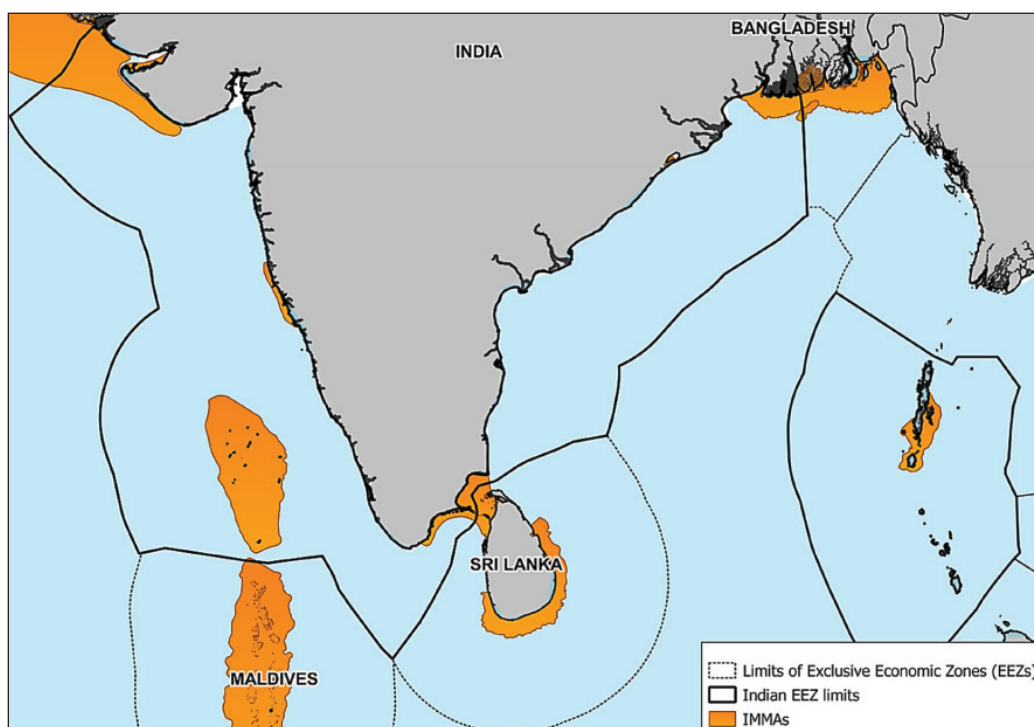


Figure 2: Important Marine Mammal Areas (IMMAs) in/ around India’s EEZ. Image created by author, Mr Eklavya Tiwary.

Data Source: IUCN MMPATF (2020) Global Dataset of Important Marine Mammal Areas (IUCN-IMMA). December 2020. Made available under agreement on terms and conditions of use by the IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force and accessible via the IMMA e-Atlas <http://www.marinemammalhabitat.org/imma-eatlas>

the Bay of Bengal, the EBSA for the Olive Ridley Turtle Corridor is positioned just outside the limits of India's EEZ.

Several "Important Marine Mammal Areas" (IMMAs), as recognised by the "International Union for the Conservation of Nature" (IUCN) are also present across India's continental shelf. These are areas of high ecological importance that could and should be delineated and managed for conservation. Figure 2 displays the various IMMAs in the region, with each of them symbolising the great amount of cetacean diversity in the region and the uniqueness of subpopulations endemic to the region, such as Arabian Sea Humpback whales. Additionally, other regions such as the floor of the Laccadive Sea, which harbours great micro-biodiversity in the several dozen seamounts it contains, further highlight the biological significance of the EEZ.¹⁶

The National Stage: India's Approach to Ecosystem Conservation – Legal Frameworks

In India, the legal framework governing Protected Areas mandates the following categories through the respective legislations:

1. Reserved/ Designated Forest Areas declared as such under the Indian Forest Act, 1927.
2. Protected Areas declared under any of the four categories of the Wildlife Protection Act, 1972, namely, National Parks, Wildlife Sanctuaries, Community Reserves, and Conservation Reserves.
3. Biodiversity Heritage Sites notified under the Biological Diversity Act, 2002.
4. Wetlands identified and notified under Wetland (Conservation and Management) Rules, 2017.¹⁷

Terminological imprecision has allowed for a common misunderstanding that PAs in India are legislated only by the Wildlife Protection Act of 1972. In fact, all the above categories fall under the ambit of the protected area definitions offered

both by the CBD and the IUCN. The Wildlife Protection Act of 1972 takes precedence in the context of Marine Protected Areas and will, therefore, remain the central reference document in further discussion. This Act, despite having been amended several times, fails to explicitly distinguish MPAs from other PAs, and hence permits their establishment under all the categories described in the Act. Most MPAs have been established as National Parks and Wildlife Sanctuaries and exercise the regulations of the same. The various permissible activities in an MPA under the various conservation levels are listed below in Table 1.

Table 1: Matrix of Permissible Marine Activities for MPAs under the Wildlife Actx (Y- allowed, N- not allowed, NA - Not applicable)

Activity Type	National Park	Sanctuary	Community Reserve	Conservation Reserve
Research: non-extractive	Y (<i>with permission</i>)	Y	Y	Y
Non-extractive traditional use	N	N	Y	
Non-extractive recreation, e.g., tourism	Y (<i>with restrictions</i>)			
Shipping (except as may be unavoidable under international maritime law)	N	N	NA	NA
Traditional fishing/ collection in accordance with cultural tradition and use	N	Y		
Untreated waste discharge	N	N	N	N
Fishing/ collection: long-term and sustainable local fishing				
Harbours, ports, dredging	N	N		
Mining (seafloor as well as sub-seafloor)	N	N		
Renewable energy generation, e.g., windmills	N	N	NA	NA

Source: Neeraj Khara et al, *Training Resource Material on Coastal and Marine Biodiversity and Protected Area Management for Field-level MPA Managers* (New Delhi: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) India and the Wildlife Institute of India, 2015)

It may be noted that the 2003 amendment to the Wildlife Act introduced “Conservation Reserves” and “Community Reserves”, which include community involvement in protection. While Community Reserves only pertain to land and cannot be included as MPAs, Conservation Reserves are declared for protecting both landscapes and seascapes. Generally, the areas adjacent to National Parks and Sanctuaries are established as Conservation Reserves as linkages of the PA network.¹⁸

On the coasts, PAs that fall entirely or partially within 500 metres to landward from the High Tide Line (as described by the Coastal Regulation Zone notification, 2011) are considered to be MPAs. The seaward extent of MPAs under the Wildlife Act is limited to the extent of the Territorial Sea as promulgated by the Maritime Zones Act, 1976,¹⁹ i.e., 12 nautical miles from India’s baseline.

Under the UNESCO-MAB program, the Central Government has also designated “Biosphere Reserves”. Although these do not constitute a Protected Area as designated by the Wildlife Act, they are nevertheless included in the list of PAs submitted to the CBD.²⁰

Coastal and Marine Biodiversity Areas” (ICMBAs) and proposed their upgradation to “Sanctuaries” or “Conservation Reserves”.²¹ It is noteworthy that only one identified ICMA site — Angria Bank — lies within the Exclusive Economic Zone (EEZ).

Marine Conservation in the EEZ – Legal Frameworks

Spatial conservation tools such as Marine Protected Areas (MPAs), which have gained traction as the foremost method of conservation in the marine environment, have not yet been utilised for protecting the biodiversity in India’s EEZ. Thus far, no area beyond the Territorial Sea has been offered protection. As was discussed in Part I of this series, Protected Areas under the Wildlife Protection Act, 1972 are only applicable within the limits of the Territorial Sea. For conservation beyond these waters, the guiding provision lies within the Maritime Zones Act, 1976, which, *inter alia*, allows the Government of India (GoI) to demarcate any area in the Continental

Shelf or within the EEZ for explorative, exploitative, and protective activities. The document acknowledges “*protection of the marine environment*” as one of the objectives that can permit the establishment of a “*designated area*.”²² However, in the context of conservation, this provision had not been utilised, until recently when the submerged plateau of Angria Bank was proposed to be established as a ‘*designated area*’ by the state government of Maharashtra. Located 56.7 nautical miles off the Malvan coast, the plateau has gained a newfound recognition for its coral reef diversity, marine mammal habitats, and other marine flora and fauna. At the same time, this precise area is of considerable significance to the Indian Navy in terms of submarine and anti-submarine exercises. At the time of writing of this article, the state still awaits approval from the Centre on a final proposal that recommended 2,001.43 sq.km to be protected under the provision of ‘*designated area*’ of the Maritime Zones Act, 1976.²³ The law allows the regulations and guidelines of the ‘*designated area*’ to be drafted on a case-to-case basis.

One of the main action points identified by the “National Wildlife Action Plan (NWAP) 2017-2031”, as was mentioned in Part I of this series, was to amend the Wildlife Protection Act, 1972 to incorporate MPAs within the EEZ.²⁴ The case of Angria Bank suggests that this step may not really be strictly necessary for establishing MPAs in the EEZ, since the Maritime Zones Act allows for ‘*designated areas*.’ This raises an important question, which of the two legal pathways should be pursued as the standard? The authors would argue that the ideal choice would be to amend the Wildlife Act and discard the use of the ‘*designated area*’ provision, due to the following reasons:

1. The existing framework under the Wildlife Act, on the basis of which conservation plans such as those in the NWAP are built, provides for an already established and improving mechanism for the establishment, management, and monitoring of MPAs.

The PA categories under the Wildlife Act are compatible with the recommended IUCN categories, with each category having different degrees of protection. Despite this, the PA coverage of India has been undermined in the IUCN’s World Database on Protected Areas. While the exact reason for this misrepresentation is unknown

and requires remediation, such discrepancies often occur when countries establish PA networks that are not compliant with the IUCN guidelines. The '*designated area*' provision offers no categorical classification and as mentioned earlier, regulations would vary on an individual basis. This would create confusion and inconsistencies. A lack of systematic classification that is consistent with recommended standards would cause global databases to omit the particular MPA, thereby causing it to lose international recognition.

An amendment to the Wildlife Act would be most suitable to accommodate all aspects of MPA designation and management in the EEZ and it is suggested that the proposed Angria Bank '*designated area*' should also be integrated into the same upon revision of the law.

Potential for Transboundary Conservation with Bangladesh

India's international boundary with Bangladesh slices through the Sundarbans. The deltaic coastline of Bangladesh is home to an array of mangroves that provide critical habitats for numerous terrestrial and aquatic species. In its coastal and marine waters, Bangladesh possesses 475 bony, and 50 cartilaginous fish species, 185 crustacean species, 50 crab species, 36 species of shrimp, among others.²⁵ An expansive IMMA is also mapped across the maritime boundary with India, and oceanographic conditions here are known to support some of the threatened cetacean species better than other coastal areas in the Indo-Pacific.²⁶ Many of the pelagic as well as demersal species are also known to move across long distances, oblivious of the maritime boundary. Although, progress has been made in identifying the size and movement of important *hilsa* and mackerel stocks in the larger portion of the Bay,²⁷ further assessments are required to trace fish stocks between the EEZs of the two countries.²⁸

Notably, Bangladesh has established several coastal MPAs, conserving its many mangrove and estuarine ecosystems over the years. It declared its first offshore MPA, the *Swatch-of-No-Ground* MPA - a submarine canyon marked as an IMMA, in 2014. Marine conservation has gained much traction in the country, with consistently increasing MPA establishments and plans to improve marine and fisheries legislations

to account for environmental protection.²⁹ However, conservation efforts are being threatened by stressors from upstream land-based waste discharges as well as overexploitation and IUU fishing. *Hilsa* sanctuaries in Bangladesh have a seasonal 65-day ban to restore fish stocks. However, some studies suggest that as many as 60 per cent of fishers ignore the ban and that more than 90 per cent use illegal gear within the sanctuaries.³⁰ Indian fishers have also been known to cross over in search for catch during the ban period. As a consequence, social inequity pervades between fishers who comply with the bans and those who do not. Ban periods in the *hilsa* sanctuaries place serious strains on the livelihood of compliant fishers and the current compensation scheme is believed to be insufficient, non-inclusive, and poorly administered.³¹

Marine transboundary conservation between India and Bangladesh would go a long way to replenish fish stocks through biomass spillover and further assist in holistic biodiversity conservation. The IUCN also urges cooperation between the two neighbours in order to conduct detailed assessments on resident and migratory species and develop subsequent cooperative MPA networks.³² A 2019 study identified potential sites in the Bangladesh EEZ for MPA declaration.³³ Although, none of these delineations cross the IMBL with India, as per the IUCN guidelines, transboundary conservation can occur between PAs located between two countries that might be separated by non-protected areas and does not necessitate contiguity across international borders.

However, if such efforts are to be undertaken, they would require conflict resolution, rigorous enforcement, and compliance mechanisms. It is necessary to inculcate responsible attitudes towards conservation amongst the non-compliant fisher groups. In this context, integrating effective community-level management along with top-down management models are essential for the long-term success and sustenance of shared MPAs.

Potential for Transboundary Conservation with Sri Lanka

The IMBL with Sri Lanka is situated across the Gulf of Mannar and Palk Bay between the south-eastern tip of the Indian subcontinent and the north-western

coast of Sri Lanka. The region is famous for its biodiversity, with 130 species of corals, 17 species of mangroves, 147 species of seaweeds, 79 species of crustaceans, 108 species of sponges, 260 species of molluscs, and 1182 fish species.³⁴ The shallow waters of the Gulf possess seagrass, seaweed, corals, and mudflats. These, along with the coastal estuaries and lagoons, serve as breeding grounds for many fish species.³⁵ Additionally, the Gulf also hosts migratory whales, dolphins, and four of the seven existing species of sea turtles, and is also home to the endangered Dugong.

On the Indian side, conservation is carried out through the “Gulf of Mannar Marine National Park”, established in 1986, and covering 21 islands and their adjacent coral reefs off the coast between Tuticorin and Dhanushkodi, with a total area of 560 sq km. The National Park forms a core area to the larger “Gulf of Mannar Biosphere Reserve”, established in 1989 under the UNESCO Man and Biodiversity programme, covering an area of 10,500 sq km. Across the Gulf, Sri Lanka has established the “Bar Reef Sanctuary” making it the country’s largest MPA covering approximately 310 sq km. Coastal MPAs such as “Vankalai Sanctuary” and the “Adam’s Bridge Marine National Park” have also been established under the “Flora and Fauna Ordinance”.

Maritime governance in the Gulf of Mannar and Palk Bay has had its own set of historical challenges. IUU fishing is a common occurrence, with Indian trawler fishers often crossing the IMBL in search of catch, quoting “traditional rights” as justification. The disputed Katchatheevu Island, which is Sri Lankan territory but to which the people of Tamil Nadu assert their claim, has also been at the centre of confrontational politics. Fishers in mechanised craft seasonally migrate from different regions in Tamil Nadu to find catch and are encouraged by state-level politicians.³⁶

Bilateral engagements between the two countries have constantly attempted to resolve this complex issue. Artisanal fishers arrested by Sri Lanka are often released based on a mutual understanding with India, considering the humanitarian aspect of the problem. However, Sri Lanka has usually been somewhat more reluctant to release mechanised vessels, as there is a genuine fear of destruction of fisheries on their side. More recently, at the fourth meeting of the “India-Sri Lanka Joint Working Group on Fisheries”, the Indian representation reiterated the need to release the boats in their custody, as per a commitment made by the Sri Lankan President.

The development of deep-sea fishing boats to replace mechanised trawlers in the Palk Bay has been repeatedly suggested as a solution and efforts in this direction have begun, albeit at a slow pace.³⁷ This transition is expected to take time as it requires adequate capacity-building (suitably equipped vessels, cold storage, on-board canning facilities, etc.) as well as capability-enhancement (fisherfolk training).³⁸ However, these advancements will not restore the heavily overfished and severely depleted fish stocks at the Indian side, upon which millions of artisanal fisherfolk are reliant for their daily sustenance.³⁹ Local communities are rarely involved in the decision-making process related to new fisheries development policies and projects. Admittedly, some projects, such as those implemented by the “Gulf of Mannar Biosphere Reserve Trust”, have attempted to incorporate livelihood development programs, albeit with limited success.⁴⁰

Joint governance and management between the two countries in the region has been proposed as the most suitable long-term solution to resolve the fishing problem.⁴¹ The same is true for conservation as they share a single highly productive ecosystem that is ecologically connected with cross movement of many species. The existing MPAs off each coast form a fragmented approach to protection. Moreover, the area under the “Gulf of Mannar Biosphere Reserve” does not enjoy adequate protection and is merely seen as a buffer zone to the “Gulf of Mannar Marine National Park”. Along with biodiversity conservation, the larger challenge is to rejuvenate fish stocks in these waters, which could be achieved through the creation of a Transboundary MPA that would potentially lead to high biomass spill over across boundaries. As trawler fishers make the switch to deep sea fishing, it would provide time for the fish stocks to recover and for the benefits of spill over to accrue. Moreover, fisher populations on both sides (who are tied by shared Tamil ethnicity) could be integrated to create community-level management and monitoring mechanisms. Some of these groups have already been assisting the Forest Department in tracking illegal activities, poaching, and narcotics trafficking around the “Gulf of Mannar Marine National Park”. However, there is still a large trust-deficit between local fishers and authorities, on both, the Indian and the Lankan sides.⁴²

Efforts for MPA creation in Sri Lanka also show difficulties in gaining community support, as the communities fear that they will lose their livelihoods if fishing

restrictions are enforced.⁴³ Thus, it becomes all the more critical to better educate the local communities about the benefits of MPAs. The long-term success of the conservation efforts will undoubtedly depend on effective community-engagement and the degree to which they can be meaningfully involved in the various management processes.

Management and Effectiveness

The creation of MPAs is only the beginning of a long and arduous process of practicing, monitoring, and revisiting measures to conserve marine biodiversity. Assessing the management practices and their efficacy at actually achieving the desired goals is just as important, if not more so, as is the identification and designation of the MPAs themselves. To measure the impacts of the conservation measures, Protected Areas are required to undergo periodic assessments. The 1992 World Parks Congress in Venezuela was an influential juncture where the discussion on evaluation methods for PAs were debated at the international level. It led to the development of the “Management Effectiveness Evaluation” (MEE) framework, which has come to be defined as ‘an assessment of how well PAs are being managed- primarily, whether they are protecting their values and achieving the goals and objectives agreed upon.’⁴⁴ Information gained from MEE assessments can be used to improve the performance of PAs by revisiting the management methods, changing resource allocation, and enhancing transparency for the various stakeholders.

The last two decades have seen the development of a variety of methodologies for MEEs, varying from questionnaire-type approaches to detailed monitoring systems that rely upon factors such as the significance of the site, available time and resources, and stakeholder pressure.⁴⁵ However, most of these revolve around the IUCN’s “World Commission on Protected Areas Framework for Assessing MEE”. The WCPA Framework is a globally endorsed best-practice guide that fractionates the MEE into six key stages as presented in Table 2.

The CBD Programme of Work for Protected Areas calls on all member States to continue to expand and institutionalise management effectiveness assessments and

aim towards assessing 60 per cent of the country's total area of National Parks and Wildlife Sanctuaries.

Table 2: Summary of the IUCN's World Commission on Protected Areas (WCPA) Framework

Elements of Evaluation	Explanation	Criteria Assessed	Focus of Evaluation
Context	Where are we now? Assessment of importance, threats, and policy environments	<ul style="list-style-type: none"> • Significance • Threats • Vulnerability • National Context • Partners 	Status
Planning	Where do we want to be? Assessment of PA design and planning	<ul style="list-style-type: none"> • Protected area legislation and policy • Protected area system design • Reserve design • Management planning 	Appropriateness
Inputs	What do we need? Assessment of resources needed to carry out management	<ul style="list-style-type: none"> • Resourcing of agency • Resourcing of site 	Resources
Processes	How do we go about it? Assessment of the way in which management is conducted	<ul style="list-style-type: none"> • Suitability of management processes 	Efficiency and appropriateness
Outputs	What were the results? Assessment of the implementation of management programmes and actions; delivery of products and services	<ul style="list-style-type: none"> • Results of management actions • Services and products 	Effectiveness
Outcomes	What did we achieve? Assessment of the outcomes and the extent to which they achieved the objectives	<ul style="list-style-type: none"> • Impacts: effects of management in relation to objectives 	Effectiveness and appropriateness

Source: Sue Stolton et al, Management Effectiveness Tracking Tool, Reporting Progress at Protected Area Sites: Second (Revised) Edition (Gland, Switzerland: WWF International, 2007)

In India, the MEE process has been institutionalised to some extent, with the country having evaluated many of its World Heritage Sites, National Parks, Wildlife Sanctuaries and Tiger Reserves.⁴⁶ The most recent evaluation was undertaken between 2018-19 for 146 National Parks and Wildlife Sanctuaries, which included 5 MPAs, namely, the *Gulf of Mannar Marine National Park*, the *Krishna Wildlife Sanctuary*, the *Bhitarkanika Wildlife Sanctuary*, the *Thane Creek Flamingo Wildlife Sanctuary*, and, the *Pitti Wildlife Sanctuary*. The evaluation abided by the WCPA Framework and used a “Rapid Expert-Based Scorecard” method where different parameters concerning the biophysical, socio-economic, and governance aspects, each having multiple criteria, were given a score and, subsequently, a total score was generated to measure overall performance. The management strengths, weaknesses, and actionable points were also highlighted in the evaluation.

However, because such an assessment framework is meant to apply across all PAs of all regions and terrains, it is likely to overlook certain parameters specific to MPAs, given the vastly different challenges of the marine environment. It is very encouraging to note that in order to address this potential infirmity, plans to create an MPA-specific-MEE were, indeed, announced earlier this year. This is currently being jointly developed by the WII and the MoEFCC and can be expected soon.⁴⁷ Of course, there is no gainsaying that while this represents a step in the right direction, much remains to be done to overcome the issues in the management of Indian MPAs. Clear evidence of this is to be found in the findings of the latest MEE assessment (2018-19) mentioned above. According to the report, four of the five MPAs that were evaluated face threats to water quality from industrial wastewater, untreated domestic sewage, discharge from mining activities, increasing salinity, and reduced freshwater flow. Three of the five MPAs lack adequate staff to ensure efficient day-to-day monitoring and also lack the technical staff to address scientific and communal issues. The *Pitti Wildlife Sanctuary* also faces a shortage of both, budget and infrastructure. Additionally, lack of consolidated and well-documented data is a common problem across these MPAs.⁴⁸ The *Malvan Marine Wildlife Sanctuary* was also evaluated, with poor performance being reflected in the 2017-18 MEE report. It faces a number of problems such as inadequate management, pollution from unregulated tourism and untreated domestic sewage disposal, and failure to settle rights and provide concessions to local residents. According to an independent

analysis from 2018, the many MPAs in the Andaman and Nicobar Islands also face similar challenges especially in terms of lack of public infrastructure and inadequate staffing.⁴⁹

Moreover, some conservation experts argue that the role of the Forest Department as the central authority for MPA management (which has conventionally been the case) results in suboptimal governance because of their ‘terrestrial lens’ on conservation.⁵⁰ In India, almost all the MPAs are coastal but the focus of conservation is reported to be towards the terrestrial component to the neglect of the marine component. Therefore, there is a need for better inter-departmental coordination between the Fisheries Department, the Coast Guard, and the Department of Tourism, for a more holistic approach to MPA management.

Challenges and Opportunities in Transboundary Conservation

Marine species do not understand the concept of international boundaries. For them, there is only one *global* ocean. It is often the case that ecologically significant regions and species transcend maritime boundaries, where all the countries involved must play their part in protecting and conserving the region. The IUCN recognises three forms of transboundary conservation: (a) Transboundary Protected Areas; (b) Transboundary Conservation Landscapes and/or Seascapes; and (c) Transboundary Migration Conservation Areas. Additionally, each of the above can be given the status of a “Peace Park” to promote/ celebrate/ commemorate peace between countries.⁵¹ In the marine environment, too, transboundary conservation takes shape in one of the above forms. Table 3 displays the key features of each category.

Maintaining ecological connectivity to build greater integrity amongst common ecosystems (especially in the face of accelerating climate change) is the primary argument for undertaking transboundary conservation. Such cooperative conservation is especially essential in the marine environment since its inherently fluid nature does not give heed to arbitrary international boundaries. This is being increasingly acknowledged by the international community. A few prominent examples of transboundary conservation efforts include the “Pelagos Sanctuary for Cetaceans in the Mediterranean”, involving cooperation amongst France, Italy, and Monaco; the

Table 3: Comparison of Key Characteristics of Types of Transboundary Conservation Areas

Characteristic	Transbound-ary Protected Area	Transboundary Conservation Landscape/ Seascape	Transbound-ary Migration Conservation Area
Cooperation across international boundary	Yes	Yes	Yes
Contains protected areas	Yes	Yes	Not necessarily
Contains areas that are not protected but, are sustainably managed	No	Yes	Not necessarily
Shared ecosystem(s)	Yes	Yes	Not necessarily
Relative physical proximity between units within a TBCA	Yes	Yes	Not necessarily
Transboundary cooperation in species/ habitat management	Yes	Yes	Yes
Protection of migratory species is the key mission for cooperation	Not necessarily	Not necessarily	Yes
Transboundary cooperation in the day-to-day management, strengthening of local community relations, visitor management, security considerations	Yes	Yes	Not necessarily

Source: Maja Vasilijevic et al, *Transboundary Conservation: A Systematic and Integrated Approach* (Gland: IUCN, 2015)

“Wadden Sea MPA Network” governed by Germany, Netherlands, and Denmark; the “Ombai Strait Transboundary Corridor” between Indonesia and Timor Leste, and the “Red Sea Marine Peace Park” between Jordan and Israel.

However, as outlined by the IUCN and shown in Table 4, the extent and nature of cooperation between countries engaging in transboundary conservation could vary quite a lot depending on the specific model being used. These models of cooperation may overlap and be adopted simultaneously. The selection of the specific model is situation-dependent and should be chosen according to the needs, interests,

and political and socio-economic circumstances of the conservation area and the countries involved.⁵²

Table 4: Models of Cooperation in Transboundary Conservation

Model of Cooperation	Example
Communication- or Information Sharing	<ul style="list-style-type: none"> • Regular communication on actions, problems, opportunities or other relevant issues • Regular sharing of information, e.g., notifying one another about various management actions in a particular site
Consultation	<ul style="list-style-type: none"> • Seeking opinions, feedback or advice from one another; for instance, on how to solve a problem, how to improve a management action, etc. • Cooperative processes aimed at harmonising management
Coordinated Action	<ul style="list-style-type: none"> • Jointly coordinated management actions implemented within the sovereign areas of each party, which contribute to the conservation goals of the entire transboundary ecosystem, e.g., the monitoring of species and ecological processes occurs as regular activity on the territory of each party, but the shared results contribute to conservation of species or ecosystems in the whole shared ecosystem • This model is considered to be a form of cooperative management
Joint Implementation of Decisions	<ul style="list-style-type: none"> • Jointly coordinated and implemented management actions across the sovereign boundaries, e.g., joint law-enforcement patrols, joint fundraising and project implementation, the production of marketing material that profiles the TBCA as a single entity, etc. • This model is considered to be a form of cooperative management

Source: Maja Vasilijevic et al, *Transboundary Conservation: a Systematic and Integrated Approach* (Gland: IUCN, 2015)

India shares its International Maritime Boundary Line (IMBL) notionally with Pakistan, and via international agreement with Maldives, Sri Lanka, Bangladesh, and Myanmar. It also shares a mutually agreed EEZ boundary with Thailand, and a Continental Shelf boundary with Indonesia. Yet, as things presently stand, there is

no form of marine transboundary conservation in place across these boundaries. As discussed earlier, in India, a rigorous legal framework for MPA designation beyond the Territorial Sea is yet to be formally adopted, but it is being formulated as part of the NWAP (2017-2031). Assuming that appropriate amendments will, indeed, soon be adopted, this section briefly analyses the potential to establish transboundary MPAs with Bangladesh and Sri Lanka as a mechanism to operationalise the commitments made by these nations and India to tackle marine environmental and fisheries issues under initiatives such as the “Bay of Bengal Large Marine Ecosystems” (BOBLME) Project.⁵³

Future Outlook

In the current absence of updated NBTs for the next decade, the “National Wildlife Action Plan” (NWAP) 2017-2030 provides a foundational conservation strategy.⁵⁴ Drafted by the Wildlife Institute of India, which operates under the Ministry of Forests, Environment and Climate Change (MoEFCC), the plan is commendably comprehensive and introduces hitherto excluded factors such as recognising the impacts of climate change on wildlife and biodiversity, and undertaking relevant mitigation measures. It also implements a ‘landscape approach’ to conservation, which ensures traditional socio-economic/ cultural use along with ecological conservation. Numerous challenges in coastal and marine conservation are acknowledged and adequate measures have been proposed to strengthen the MPA network.⁵⁵ Importantly, however, while the NWAP acknowledges the absence of MPAs in the EEZ, it fails in providing satisfactory remedial interventions.

Recommendations for the Way Ahead

The NWAP (2017-2031) also pointed out the need to identify potential areas for the establishment of MPAs in the EEZ and extended the responsibility to a number of government and academic institutions, including the Ministry of Environment, Forests and Climate Change (MoEFCC), State Forest Departments, State Fisheries Departments, the Indian Coast Guard, the Indian Navy, the Centre for Marine

Living Resources and Ecology (CMLRE), the National Institute of Oceanography (NIO), the National Centre for Polar and Ocean Research (NCPOR), the National Institute of Ocean Technology (NIOT), the Central Marine Fisheries Research Institute (CMFRI), the Fishery Survey of India (FSI), the Zoological Survey of India (ZSI), and, the Wildlife Institute of India (WII).⁵⁶ Work on this score began in 2017 and is expected to continue throughout the period of the action plan. Considering this growing interest in establishing MPAs in the EEZ, along with more ambitious global biodiversity conservation targets, this sub-section provides some suggestions for a way forward based on lessons learnt from global best-practices.

Spatial conservation in the EEZ of nations is often done through the creation of “Large-scale Marine Protected Areas” (LMPAs), i.e., MPAs exceeding 1,00,000 sq.km in area. There has been an increase in LMPAs, globally, since the turn of the century, going from a total of 5 in the year 2000 to 33 in 2019.⁵⁷ Although, their effectiveness has been hotly debated, with critics highlighting the difficulties in managing such large areas, the high costs for relatively low socio-ecological benefits, and, more significantly, the assertion that LMPAs can be used as a convenient tool to show greater ‘protected area’ coverage to fulfil area-based conservation targets.⁵⁸ Be that as it may, with careful site selection and well-thought-out management strategies, many scientists and conservationists believe that the benefits of LMPAs would outweigh the costs. One of the more significant gains is through large ‘biomass spill-over’ to regions outside the boundaries of the LMPA. Fish-stock replenishment ‘within’ as well as ‘outside’ the LMPA can be ensured, so long as the LMPA strategically covers critical habitats and biodiversity hotspots.⁵⁹

Deep-sea fish beyond 200m depths of the Indian EEZ have an estimated standing stock of 3.81 million tonnes.⁶⁰ The country has been planning to expand its domestic infrastructural capacity and operational capabilities in deep-sea fishing in the EEZ. In 2017, India withdrew permission for foreign deep-sea fishers in the EEZ,⁶¹ and initiated a three-year pilot project that seeks to replace trawlers in the Palk Bay with 2,000 deep-sea vessels in the Bay of Bengal.⁶² Considering the adverse impacts of climate change and other human activities on fisheries production on the one hand, and the growing demand for food production on the other, it is obvious that there would be an increased emphasis towards utilising the under-exploited fish stocks in the EEZ in the near future. In this context, the establishment of

appropriately positioned LMPAs, which provide better fisheries-returns along with complementary high-value ecosystem services, becomes even more important.

Interestingly, for large mobile species such as tuna, sharks, and even turtles, research suggests that establishing a network of smaller MPAs along migratory corridors and breeding (spawning) grounds proves more beneficial than the LMPA approach.⁶³ Four species of tuna are available in the deeper regions of the Indian EEZ, namely, the yellowfin tuna, the skipjack tuna, the dogtooth tuna, and the bigeye tuna.⁶⁴ The rapid decline of yellowfin tuna catch in the Indian Ocean, due to overfishing, is said to have had knock-on effects on the more commonly available skipjack tuna.⁶⁵ In order to realise the full potential of Indian fisheries, domestic deep sea tuna longlining is being actively promoted and pursued in the EEZ.⁶⁶ Fostering strategically formulated and well-managed MPA networks could prove beneficial in restoring stock and ensuring sustained extraction for the country. Migratory networks of MPAs could also be applied for many of the other large cetacean species that pass through Indian waters. When it comes to migratory species that routinely cross state or national boundaries, overexploitation in any one of the regions in their paths can lead to an overall decline of stock (as has been the case with yellowfin tuna across the Indian Ocean). This, therefore, demands greater cooperation between and consistent efforts by Indian Ocean littoral and island States to protect and preserve the common marine biodiversity so that *all* States can reap the socio-economic and ecological benefits. As such, this has foreign-policy implications for regional cooperation, particularly (but certainly not limited to) cooperative sub-regional multilateral structures such as BIMSTEC and the India-Maldives-Sri Lanka trilateral. Such cooperative approaches would provide much-needed substance to India's frequently articulated vision of SAGAR. In short, it is high time that the Ministry of External Affairs (MEA) is brought firmly into the regional maritime conservation/food-security loop.

Conclusion

The global ocean is facing the threats of climate change, including that of rising ocean-temperatures, ocean acidification, and increasing extreme weather events such

as prolonged marine heatwaves. These impacts, also evident in the Indian Ocean region is leading to significant changes in the distribution and absolute populations of marine species and ecosystems,⁶⁷ and is expected to only get worse in the near- and long-term future.

Similarly, while there are limitless untapped resources in the EEZ that present significant opportunities for the expansion of India's Blue Economy, the responsibility for the protection, conservation, and sustainable utilisation of these resources, particularly the living marine biodiversity, also falls upon Indian authorities. At the national level, there is a need to better acknowledge and incorporate legal and governance frameworks in the differences between marine and terrestrial PAs, and to create more robust monitoring and evaluation mechanisms to achieve the long-term conservation objectives.

However, scientists and conservation experts estimate that in order to ensure long-term sustainability of critical ecosystems and the services that they provide, we must conserve an area equivalent to 30 per cent of the global ocean area, spread out across multiple biodiversity hotspots. Therefore, there is an urgent need to develop mechanisms and establish practices to protect and conserve these areas of high ecological, socio-economic, and cultural relevance. Clearly, there is a long way still to go!

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Sea Level Rise and Climate Refugees: A Case of Inadequate International Law

Priyanka Gautam

Climate Change Impact and Sea Level Rise

Sea level rise in the last few years has been the most visible symptom of climate change. Projections about the same were made by the scientists from the late 1970s onwards when they first noticed the disintegration of West Antarctic Ice Sheet that had the potential to displace hundreds of people in the coastal cities. The Internal Displacement Monitoring Centre published statistical research, concluding that a forced displacement of around 26.4 million people has been taking place every year since 2008 because of natural calamities like floods and windstorms. As per the recent IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, released in 2019, last few decades have seen a considerable loss of ice in Antarctica and Greenland, so much so that, even in a low emission scenario, sea level will rise by 1.4 feet in 2100. A high emission scenario, during the same period, will entail a rise of 2.8 feet. This rise will be regionally differentiated depending on thermal expansion, ice loss from the land and ocean dynamics.

All this evidence cements a clear case of sea level rise and its implications for the idea of security in international politics, which needs an expanded understanding. For instance, even if steps are taken for climate mitigation on immediate basis, more and more land will continue to be vulnerable to coastal flooding for centuries. This means a minimum-security plan has to be charted out globally. In the current century, as per the research published in Nature journal in 2019, global mean sea level will rise 0.5 meters more despite all the reductions in climate emissions and in

extreme circumstances, it can be 2 meters. Already by 2050, global sea levels are expected to rise by 20-30 centimetres, which can endanger the lives and land of 150 (140–170) million people. Further it is estimated that by 2300, sea level rise will affect a global population in the range of 1.5% to 5.4%, based on the population numbers until 2100 which has implications for displacement of people. This brings us to the idea of security defined in terms of territory and sovereignty in the context of sea level rise.

Sea Level Rise and Questions of Territory and Sovereignty

Sea level rise presents peculiar set of political problems as opposed to other natural calamities. First and foremost is the question of territory and sovereignty. Countries that are gradually losing land will be faced with the difficult task of defining their territorial jurisdiction in future. For instance, as per the United Nations Convention on the Law of the Sea (UNCLOS), a state has full jurisdiction and sovereign power over the territorial sea up till 12 nautical miles from the baseline and has limited jurisdiction in the Exclusive Economic Zone, which is, 200 nautical miles from the baseline. So, losing land to sea level rise might result in a reduced territorial jurisdiction, against which no sufficient remedy is currently available in international law. In this regard, many legal scholars have found the definition and laws pertaining to baselines in UNCLOS inadequate and have suggested a revision of the same.

As far as the inhabitants of Small Island countries are concerned, sea level rise will mean absolute statelessness in some cases, thus further complicating the idea of citizenship for them. Questions like, the process or criteria for acquiring citizenship for displaced people; consideration of cultural affinity to the neighbouring countries in rehabilitating displaced population; entitlements of climate refugees in the host country until they get citizenship, will require the construction of a comprehensive policy structure. One proposal of such a policy is the novel idea of ‘climate passport’ suggested by Dirk Messner, President of the German Environment Agency, so as to allow mobility to climate refugees until they get the citizenship of a country.

Climate Refugees and International Law

As of now, there is no international legal recognition to 'climate refugees' despite the fact that 'environmental refugees' as a term has been used regularly by a number of NGOs in their position papers, academicians, and media reports, since the 1970s to bring attention to forced displacement due to environmental factors. Despite the usage of the term in public discourse, the 1951 Refugee Convention makes no mention of environmental factors as a reason for displacement. Even Paris Agreement has failed to recognize this particular group and has limited its provisions to "developing recommendations for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change", as mentioned in Article 50.

Nonetheless, the issue of the rights of climate refugees has reached the doors of the office of United Nations. The Republic of Kiribati in the Pacific has been facing devastating impacts of rising sea level to the point of becoming almost inhabitable. It might soon become the first country to be completely submerged under the sea. As a result, one of its citizens, Ioane Teitiota, sought refugee status in New Zealand in 2013, presenting the case that his family members' life is endangered because of the rising sea level. The application was, however, rejected by the Immigration and Protection Tribunal of New Zealand, a decision also supported by the Supreme Court.

The complaint was then communicated to UN Human Rights Committee, which ruled that in the absence of active national and international efforts, the individuals in countries at the receiving end of climate change can be considered the victims of human rights violations, "thereby triggering the non-refoulement obligations of sending states". The principle of non-refoulement, the touchstone of international law on refugees, guarantees a person's right to not be returned back to a country where he/she is threatened with "torture, cruel, inhuman or degrading treatment/punishment". Furthermore, the Committee recognized that the possibility of an entire country submerging under the water is a risk so extreme that the "conditions of life in such a country may become incompatible with the right to life with dignity before the risk is realized". Hence, the ruling underlined the violation of the rights of an individual not just when the calamity has taken place, but even before that.

Apart from the above important observations, the Committee also reiterated Articles 6 and 7 of the International Covenant on Civil and Political Rights that ensure the inherent right to life of an individual. On the whole, it was the first time that existing legal principles were applied to acknowledge the rights of climate refugees who might face imminent danger due to climate change. Sadly, in this case, in spite of acknowledging the rights of ‘climate refugees’, the request of the complainant was turned down by the UN Human Rights Committee based on the argument that the concerned person did not face ‘imminent danger’ in the given circumstances.

So, although international organizations have been proactively pushing forward the agenda on climate change, member states have been reluctant to make drastic commitments. However, some countries are now recognizing the massive displacement they will face in future as a result of sea level rise. In this respect, Bangladesh has already started working on a mega building project called Bishesh Asrayan Prakaalpa, which aims to provide shelter to thousands of climate refugees and generate employment for them in the process, thereby also reducing poverty. Other refugee related solutions can be humanitarian visas, temporary protection measures, signing of regional and bilateral free movement agreements and many more.

Such initiatives should be considered by all countries given that cross-border climate migration will open up new pathways and corridors, that are vulnerable to criminalization, exploitation of women and children, human trafficking, expansion of slums as well as homelessness. Plus, the absence of proper jobs or work permit for refugees will further aggravate the above problems. Worst case scenario, as even noted by United Nations, could be the possible fall of governments due to wars and social chaos multiplied by climate change. Countries on relatively higher grounds with stable governments will then have the choice to either allow these displaced people inside their borders or seal off their borders, trapping thousands of people in highly unlivable conditions, some leading to sure death. The latter choice already seems to be driving the populist agenda across the world, which not only raises ethical questions but also questions about the future of globalization and world economy. Considering these long-term implications, refugee management must form an integral part of a country’s climate change adaptation and mitigation policy.

The Way Forward

There is an urgent need to clearly define the term ‘climate refugee’ in international law and identify the rights of such refugees for any concrete action to be taken. And given the minute complexities of law, it is important that a distinction is made between climate refugees and climate migrants, as the status of a refugee will entail the application of critical legal provisions like the principle of non-refoulement. Once that is accomplished, a global fund must be created to provide support for rehabilitation and employment. Only if instrumental changes are made in the international law with regards to climate refugees, a trickle-down effect can take place in terms of domestic laws on the official acceptance of such refugees in the host countries.

If we are able to make right choices to arrest the increase in greenhouse gas emissions now, the impact of sea level rise can be reduced to an extent and so can the number of climate refugees. Overall, climate refugees are a problem that still remains unaddressed in the international law, which has the possibility to escalate into a humanitarian crisis, both for the native country and the host country. Hence, it will be pragmatic on the part of governments worldwide to treat climate refugees as one of the key issues in their national climate change policy and response.

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Note

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UNCLOS and Climate-Induced Maritime Challenges in The Indian Ocean Region: Strategic Implications for India

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The climate change, as one of the greatest concerns of the 21st Century, has brought immense challenges to maritime domain and international law governing use of the oceans and seas, as reflected in the 1982 UN Convention on the Law of the Sea (UNCLOS).¹ Sea-level rise resulting from climate change can change the existing maritime boundaries of a coastal State with significant political, economic, and security implications.

The 1992 United Nations Framework Convention on Climate Change (UNFCCC) provides the legal basis for international cooperation on climate change.² It is supplemented by the 2016 Paris Agreement to strengthen the global response to the threat of climate change.³ The Ocean and Climate Change Dialogue under the UNFCCC and the Paris Agreement together, deal with integrated action on ocean and climate change adaptation and mitigation measures.

The climate change, by definition, refers to 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere; and which is in addition to natural climate variability observed over comparable time periods.'⁴ The latest IPCC report (AR6, 2021) unequivocally states that Greenhouse Gas Emissions (GHGs) from human activities have warmed the atmosphere, oceans and the adjoining landmass. It states that emissions of greenhouse gases from human activities are responsible for approximately 1.1°C of global warming in the 1850-1900 time period. It is however posited that climate

change should not be looked at from a purely scientific perspective. There is a strong inter-relation between the scientific, economic and political dimensions related to the climate change.⁵ It would therefore not be wrong to aver that climate change affects everything from human security to geo-economics to geo-politics.

This article therefore provides an overview of the climate change-induced maritime challenges in general; and challenges of accelerating sea-level rise on maritime zones and related rights under the 1982 United Nations Convention on the Law of the Sea. Thereafter, its strategic implications for the Indian Ocean Region (IOR) and India in particular, are assessed. Finally, India's policy options to collaborate with the IOR countries on human and environmental security — with a view to ensure that opportunistic extra-regional third parties like China do not derive unfair geo-political advantages by leveraging climate change induced vulnerabilities of IOR littorals — are suggested.

Oceans and Climate Change

Oceans' role in regulating climate change

The oceans underpin the Earth's climate system and are a critical element in the Earth's natural response mechanism to rising greenhouse gas (GHG) levels in the Anthropocene.⁶ The oceans not only store heat, but they also remove the greenhouse gas carbon dioxide from the atmosphere. They are instrumental in capturing about one-third of anthropogenic carbon emissions emitted into the atmosphere; and absorb about 90 percent of the heat resulting from global warming. A portion of this is absorbed heat stored in the deep sea, which helps to buffer against global warming.⁷ While the Earth has warmed by 1°C (2°F) since 1880; the oceans' surface temperature has risen by about 1.5°F in this time period.

Impact of climate change in maritime domain

The adverse impacts of global warming due to climate change in maritime domain include thermal expansion of water resulting in sea-level rise; risks to marine ecosystem and biodiversity such as fisheries, corals and aquaculture; risks to infrastructures;

increase in extreme events such as cyclones, tides and flooding; and consequent human migration and population displacement. Increase in sea surface temperature also affects the atmospheric wind flow patterns — in both, direction as well as speed. As a result, there is a discernible increase in the frequency of forming of tropical revolving storms and their severity in the oceans.

Climate-change has inevitably caused thermal expansion of ocean water and melting of polar ice; thereby resulting in global mean sea-level rise. The IPCC special report places this phenomenon in perspective by mentioning that while the sea level registered an annual average rise of 1.3 mm over 70 years from 1901 to 1971; the rate of rise in the shorter time frame of 1971–2006 (25 years) was 1.9 mm annually. The rise in further compressed time period of 12 years (2006–2018) amounted to an even higher rate of 3.7 mm per annum, with the Report averring that human influence was the most likely driver for this huge uptick.⁸ The graph in Figure 1 enables better appreciation of these statistics.

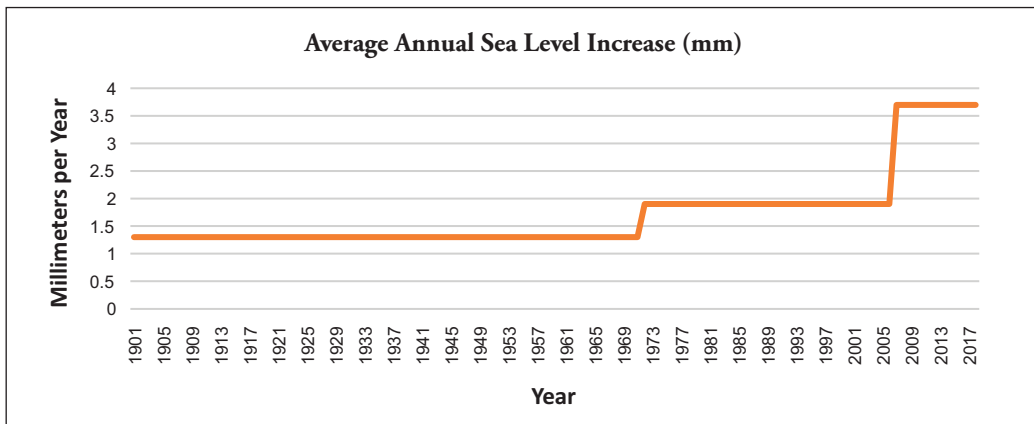


Figure 1: Annual Sea Level Rise from 1901-2018 (118 Years)
Source: Data from IPCC 2021 (AR6) WG-1 Report. Graph by Authors

This combination of mean sea level rise with extreme related events such as tides, tropical storm surges and waves would cause hugely adverse coastal impacts;⁹ threatening countless atolls and small island nations as well as extensive, often densely populated coastal regions around the world, with increasing recurrence.

According to the latest IPCC Assessment Report (AR6, 2021), global mean sea level (MSL) increased by 0.20 m between 1901 and 2018 and it is virtually certain that the same will continue to rise over the 21st Century.¹⁰ The IPCC AR6 has also concluded that human influence is likely the main driver of this rise in MSL since 1971. The global sea level rise will continue to accelerate, even if the World at large is successfully able to reduce greenhouse gas emissions to the levels ‘concluded to’ in the Paris Climate Agreement of 2015.¹¹ It has been projected that sea level rise of one meter will wipe out about 46 per cent of the world’s coastal wetlands.¹² In fact, one such scenario predicts that at this level — one meter — of sea rise, substantial landmass of Maldives would go under water in next 20 years; with the whole country being submerged by 2085.¹³ The Maldivian government decided to bring home this disastrous fate awaiting the country in a dramatically poignant fashion by holding a cabinet meeting under-water in 2009.¹⁴

A number of countries have set the oceans as a priority area in their national agenda; and have agreed to work under the UNFCCC.¹⁵ The 25th Conference of Parties (COP) of the UNFCCC initiated the ‘Ocean and Climate Change Dialogue’ to plan and implement the climate change adaptation and mitigation process in an integrated manner. The Ocean Dialogue — first edition of which was held in 2020 — provides an inclusive platform for inputs from both, UNFCCC Parties and all stakeholders, including academia and non-governmental organisations (NGOs).

Climate-Induced Maritime Challenges and Relevance of UNCLOS

The threat of climate change goes beyond the environmental concerns — as climate change is increasingly recognised as a threat-multiplier. In the maritime domain, two important concerns relate to the GHG emissions from ships, and potential implications of sea-level rise on the coastal states’ maritime boundaries. The sea-level rise also brings new maritime challenges, especially for low-lying states and islands. Their coastlines may shift or submerge as a result of sea-level rise. This scenario will have serious legal implications for a coastal states’ maritime entitlement and boundaries under the law of the sea. UNCLOS 1982, as the overarching international law framework, guiding many issues related to maritime order at sea, should be the

most suitable instrument for addressing climate-induced maritime challenges also. In pursuance of this endeavour, the existing provisions of UNCLOS which provide certain pointers, do require to be revisited.

UNCLOS as the Constitution for Ocean Governance

The UNCLOS, being considered *ipso facto* as the ‘constitution for ocean governance’, sets out the international legal framework for veritable uses of oceans and their resources, establishes maritime zones and enunciates the rights and duties of states within these zones.¹⁶ These include various aspects, such as the freedom of high seas, extent of maritime zones — territorial sea, contiguous zone, exclusive economic zone, and the continental shelf — delimitation of maritime boundary, marine environment, marine resources, status of merchant and government ships, and settlement of maritime disputes. It also provides legal authority for establishment of three institutions, namely, the International Tribunal for the Law of the Sea (ITLOS), the International Seabed Authority (ISA) and the Commission on the Limits of the Continental Shelf (CLCS).¹⁷

The ISA is entrusted with the management and just exploitation of the mineral resources of the seabed ‘Area’ beyond the national jurisdictions — also known as the common heritage of mankind. CLCS reviews the claim data submitted by a coastal state for extended continental shelf beyond 200 nautical miles; and submits its recommendations to the UN Secretary General with intimation to the concerned coastal state. ITLOS is the specialised international judicial body for settlement of disputes concerning the interpretation or application of UNCLOS provisions.

UNCLOS and GHG emissions

From an environmental perspective, UNLOS is also the most comprehensive international law framework for protection of ocean and marine environment. Article 1(4) of UNLOS defines ‘marine environment pollution’ thus:

“Pollution of marine environment” means introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries,

which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate use of the sea, impairment of quality for use of sea water and reduction of amenities.

Secondly, Article 192 of UNCLOS stipulates that “States have general obligations to protect and preserve the marine environment”. This general obligation is supplemented with specific provisions to combat marine environment pollution from all sources, including land-based sources (Article 207), pollution by dumping (Article 210), and pollution from vessels (article 211). Article 212 of the UNCLOS in particular, obligates states to adopt laws and regulations and take other necessary measures “to prevent, reduce and control pollution of the marine environment from or through the atmosphere”. These obligations are sufficiently broad to accommodate measures to mitigate climate change issues also.¹⁸

The maritime means of transportation emit around 1076 million tonnes of greenhouse gases (GHG) annually; and are responsible for about 2.9% of global anthropogenic emissions.¹⁹ Though UNCLOS makes no explicit reference to climate change and GHG emissions, Part XII therein relating to ‘protection and preservation of the marine environment’ appears quite relevant, towards implied redressal of environmental challenges of climate change, and its impact in an indirect manner.

Further, Article 212 (3) makes reference to the role of ‘competent international organisations’ — the International Maritime Organisation (IMO), for instance — in enabling the States to establish global rules to combat marine pollution from- or through the atmosphere.²⁰ In pursuance of this mandate, IMO amended the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL Convention), wherein it added Annex VI titled ‘Regulations for the Prevention of Air Pollution from Ships.’²¹

Thus, even though GHG emissions are not specifically mentioned in the UNCLOS as a source of marine environment pollution, it appears quite reasonable to interpret Part XII to include this type of pollution. However, since climate change in recent years, has emerged as an issue which has gained its own sustainable traction, its governing modalities certainly beg consideration for inclusion as a separate set of articles under Part XII of the UNCLOS. It will ensure that the envisioned balance

in the package deal of UNCLOS is maintained; while the convention concurrently, continues to adapt to new challenges of climate change, as has been done through the implementation agreements such as the '1995 UN Fish Stock Agreement'. The forthcoming instrument for the 'Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction' (BBNJ Instrument) is yet another example.

UNCLOS and legal consequences of sea-level rise

UNCLOS *inter alia* establishes the legal framework of baselines to determine outer-limits of maritime zones and delineation of maritime boundaries.²² Therefore, one of the most visible climate change-induced maritime challenges for the UNLOS regime concerns the shifting of baselines from which maritime zones are measured. UNCLOS provisions that specifically rule on the extent of maritime zones are as follows:

- Article 3 (Territorial Sea): Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention.
- Article 33.2 (Contiguous Zone): The contiguous zone may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured.
- Article 57 (EEZ): The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.
- Article 76.1 (Continental Shelf): The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin; or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, where the outer edge of the continental margin does not extend up to that distance.

The diagrammatic representation of these maritime zones with respect to the territorial sea baseline is shown in Figure 2.

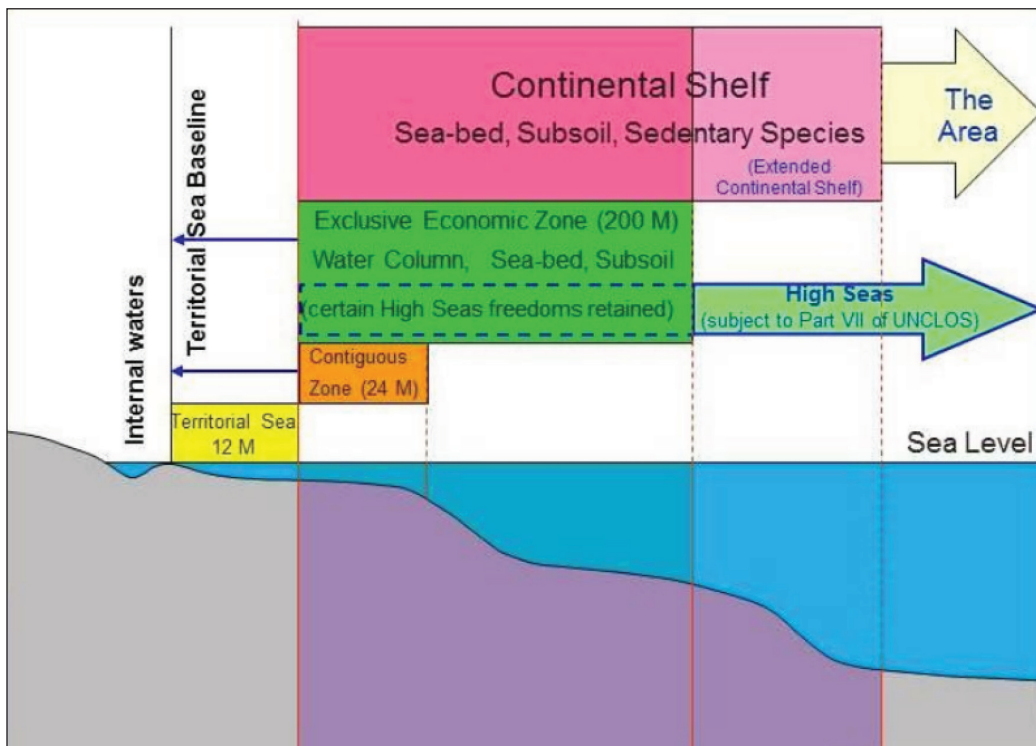


Figure 2: Diagram to illustrate Maritime Zones of a Coastal State
Source: IHO Manual on Technical Aspects of the UNCLOS (TALOS)

It is clear from the aforesaid UNCLOS provisions that a coastal state measures all its maritime zones from baselines. The important aspect is that the baselines being used to measure these maritime zones — also called normal baselines — are located along the low-water line; and refer to the lowest water line when the seas are receding.²³

It is thus, obvious that when the low-water line moves back or landwards because of rise in MSL; the normal baselines or straight baselines will also shift inward. An interesting implication of this phenomenon would be that archipelagic states such as Indonesia are likely to lose their legal archipelagic status as per the extant UNCLOS

regime. They could then, become just island states like UK or Japan. It may also be noted that some coastal countries have already taken steps to pursue legal recognition of defined baselines as permanent, irrespective of the impacts of sea level rise. These countries include Polynesian states and territories, Marshall Islands, and Pacific countries which are parties to Nauru Agreement. Most coastal countries, however, are neither aware nor have taken any response measures.

Impact on Existing Maritime Boundaries

The possibility of inundation of low-lying island states and landward movement of the low water line will tend to reduce their entitled extent of maritime zones, as explained earlier.²⁴ Such shifting of existing, promulgated and broadly accepted baselines will certainly affect bilateral treaties on maritime boundaries. This could virtually open a Pandora's box of acrimonious claim and counter-claim cycles, with states endeavouring to maximise their own benefits and national interests. The complexity will further exacerbate, particularly when states are located adjacent to each other, or do not have the full extent of entitled maritime zones between them.

As regards existing maritime boundaries established under the bilateral treaties, the 1969 Vienna Convention on the 'Law of the Treaties' stipulates that the fundamental change of circumstances principle (*rebus sic substantibus*) does not apply to boundary treaties (Article 62(2)(a)).²⁵ For instance, the Vienna Convention may apply to India-Indonesia bilateral continental shelf treaty. In that case, the previously agreed to maritime boundary may still exist. However, the Vienna Convention does not specifically mention about the nature of boundary—whether land or maritime. Thus, there is still an element of legal ambiguity about the impact of sea-level rise on existing maritime boundaries.

These climate-change induced anomalies will have detrimental impact on the legal basis of a coastal state's existing sovereign rights and potential claims over adjoining maritime space under the UNCLOS. This issue has spawned great debate about whether baselines should be ambulatory or fixed.²⁶ Yet another question that begs solution is whether the promulgated and legally accepted base lines as on a cut-

off date can be treated as fixed or not. In this regard, International Law Association (ILA) has published a report titled ‘International Law and Sea Level Rise’ post its Sydney Conference in 2018. ILA has proposed a twin-approach for coastal states as follows:

- Maintain (or freeze) their existing baselines
- Maintain their existing defined outer limits of maritime zones.

Additionally, in acknowledgement of the nuances involved and serious sovereignty and jurisdictional implications thereof, the International Law Commission (ILC) submitted a report to the UN General Assembly on the legal effects of the sea-level rise on the UNCLOS framework in 2021.²⁷ As a follow-up of this Study Group’s Report, the ILC now aims to undertake further in-depth analysis of various principles and rules of international law and State practice and *opinio juris* on the subject. Therefore, amicable settlement of this hugely contentious issue — of impact of climate change on maritime zones — under the UNCLOS regime, should majorly concern the global governing body administering the provisions of UNCLOS, as the convention turns 40 — since its adoption in 1982.

Implications for the Indian Ocean Region (IOR)

Significance of the IOR

The Indian Ocean region consists of 28 littoral states²⁸ and extends over 68 million square kilometers.²⁹ The Asian continent runs along its northern border, with India forming a wide peninsula that divides the northern Indian Ocean into eastern and western parts.³⁰ The Strait of Malacca is the most convenient and economical crossing point between the Indian Ocean and the South China Sea — the other two being Sunda and Lombok straits, further to the south-east. The geographic centrality of India in the Indian Ocean can very well be gauged from the map at Figure 3.

Except Cambodia, Iran and the UAE; 25 Indian Ocean states have ratified the 1982 Law of the Sea Convention. As China proactively seeks to spread its influence in the region by developing economic relations through infrastructure projects like the Belt and Road Initiative (BRI) and bilateral trade pacts with IOR littorals;³¹



Figure 3: The Indian Ocean and geographical centrality of India therein
 Source: Background map by Microsoft Encarta. Markings by Authors

the IOR has started to witness tenuous geopolitical dynamics between China, the extra-regional entity and India, the resident power. The oft repeated dictum of ‘Flag’ following the ‘trade’ eventually leading to the Chinese military forces being positioned permanently in the IOR to protect its national interests, will add further complexity to these dynamics.

Regional Security Implication of Climate Change in IOR

The IOR figures among the most highly impacted regions due to climate change phenomenon; and the IOR littoral countries, consequently, count amongst those most vulnerable to coastal environmental risks.³² According to the IPCC 2021 Report, the global Ocean surface temperature has, on average, increased by 0.88°C between 1850-1900 time period and 2011-2020 time frame.³³ Further, the fastest surface warming since the 1950s has occurred in the Indian Ocean. Sea surface

temperature (SST) of the tropical Indian Ocean has risen by 1°C on average during 1951–2015 time period, which is comparatively higher than the global average SST rise over the same period.³⁴ Moreover, the tropical Indian Ocean has shown a continued increase in SST triggered by the El Niño events during 2002-2012.³⁵ As a consequence of temperature rise, the Indian Ocean is likely to witness more marine heatwaves in the future, resulting in changes to ecosystem functioning and dynamics; with subsequent impact on the fishing communities in the region.³⁶

High rates of sea level rise in the north Indian Ocean (NIO) are accompanied by a weakening of summer-time South-Asian monsoon circulation. Sea-level rise in the NIO occurred at a rate of only 1.06-1.75 mm per year during 130 years (1874-2004); but has accelerated to 3.3 mm per year in the 25 year period between 1993-2017.³⁷ Since significant Indian population — and the majority of the Asian population too — is located near coastal regions, the rise in sea level will pose a growing challenge to the national economy, coastal infrastructure and marine ecosystems.³⁸

A US National Intelligence Council (NIC) report of 2021 has, in fact, specifically identified 11 countries of concern which are highly vulnerable to climate change effects; and where lack of proactive measures to mitigate such vulnerabilities could threaten the US interests in future. Virtually, the whole of the Indian sub-continent comprising India, Pakistan, Afghanistan and Myanmar figures therein — Haiti, Columbia, Guatemala, Honduras, Nicaragua, Iraq and North Korea being the other seven.³⁹ The projected climate change impact on the Indian Ocean littorals will especially threaten the region's growing maritime infrastructure.⁴⁰

More importantly, climate change is likely to exacerbate existing threats to regional security in the IOR and socio-economic challenges that will diminish the resilience and increase the likelihood of conflict. The NIC report identifies cross-border water tension and conflict, as also cross-border migration attributed to climate impacts, and ungoverned unilateral geo-engineering, being few such flash points.⁴¹ The IOR littorals will per-force have to look for greater food security, and secure access to existentially vital resources like oil and gas, while coming to terms with human challenges presented by rising seas, arid farmlands, excessive precipitation, increased migration and population displacement. The climate induced sea-level

rise will further exacerbate the geopolitical dynamics due to impending shift of maritime boundaries. Against this ominous backdrop, a scenario built upon by China's aspirational inroads in the region — through initiatives like BRI — may trigger significant geopolitical competition for influence and consequent deepening of fault lines between the regional and extra-regional forces. Some Security experts have in fact, gone on to aver that climate change is the biggest threat to Indian ocean security.⁴²

Maritime Security Implications for India

India has a long coastline of 7517 km including that of island territories, extending along a total of 73 coastal districts comprising 14.2 percent of India's total population. India has been identified as one of the countries which are most vulnerable to the impact of accelerated sea level rise.⁴³ While India's average temperature — mainly on account of GHG-induced warming — has risen by about 0.7°C during 1901–2018; it is projected to rise by 4.4°C by the end of the 21st Century.⁴⁴

As climate patterns change, extreme weather events are being witnessed around various part of India. According to the latest IPCC Report, warming in the western Indian Ocean will affect the low-level monsoon westerlies moving towards the Indian subcontinent. This, in turn, may lead to the occurrence of precipitation extremes over central India.⁴⁵ Documented increase in heavy rain events since 1950s — particularly over central India — have been attributed to adverse effect of GHG and rapid warming of the equatorial Indian Ocean.⁴⁶

Studies also indicate that severe cyclones are expected to increase in number and intensity on both the coasts of the Indian subcontinent because of rapidly warming Indian Ocean. According to Odisha State Disaster Management Authority, Odisha has encountered 20 cyclones in the span of last 22 years. Further, the tropical cyclones (TCs) formed in Bay of Bengal in post-Monsoon period can intensify as more potent TCs in future, with serious risk to population, and cause severe as economic losses as well.⁴⁷ Further, the rise in sea levels, in general, poses serious threats to the coastal areas in the country. For instance, the rising sea levels and delta subsidence has already

led to submergence of low-lying islands in Sundarbans, resulting in displacement of thousands as well as contaminating freshwater reserves.⁴⁸

It is thus evident that while the Indian State will have to address many non-traditional challenges arising from climate change related events/incidents — draughts, uncertain monsoon, insufficient or extreme rainfall, resultant pandemics, migration to hinterland being some of them — those in the maritime domain would mainly relate to the following:

- Natural disasters like cyclones and the resultant coastal flooding
- Shift in maritime base lines due to coastal erosion and consequent change in the claimed maritime zones
- Damage to coastal ecology including mangroves, corals, and coastal biodiversity
- Further increase in GHG levels
- Ocean surface and seabed pollution

Role of Indian Navy in Mitigating climate Change induced Security Challenges

With India having taken on the mantle of ‘preferred security partner’ and ‘first responder’ in the Indian Ocean, as reiterated publicly by the President of India during the Presidential Fleet Review – 2022,⁴⁹ it becomes incumbent on the part of the Indian maritime security agencies — particularly the Indian Navy — as the executive instruments of the State, to take proactive measures to address the above non-traditional challenges for own country as well as for the extended neighbourhood in the region. These measures can be planned and executed at two distinct levels as follows:

- Those for collective mitigation of maritime security to benefit the IOR littorals

- Others aimed towards building capacities and augmenting capabilities to handle non-traditional challenges specifically faced by India.

The collective security approach can further be disaggregated into (1) strengthening the capability of IOR littoral states to manage present and anticipated challenges to maritime security; and (2) establishing multinational maritime cooperative mechanisms for better coordination of such measures.⁵⁰

The trilateral maritime dialogue involving the National Security Advisors (NSA) of India, Sri Lanka and Maldives — also referred to as the Colombo Security Conclave — which commenced in 2011, is the most relevant example of collective coordinated approach to address the shared maritime challenges. The latest edition of the conclave which was held in March 2022 — and admitted Mauritius as additional member — identified maritime safety and security, and humanitarian assistance and disaster relief (HADR) as two of the key five pillars to enhance cooperation and strengthen regional security.⁵¹ The Indian Ocean Naval Symposium (IONS) kickstarted in 2008 and the ‘Milan’⁵² series of multilateral exercises centered around ‘doing the most basic doables’ towards engendering a culture of interoperability, are some other India-led initiatives towards regional collaborative approach. The theme of ‘Milan’ 2022 exercise was aptly articulated as ‘Camaraderie – Cohesion – Collaboration’ to portray India as a responsible maritime power, always ready to interact with and assist friendly navies in the region.⁵³

At the next lower level, the mandated objectives, missions and tasks of Indian Navy in benign role, to respond to climate change related natural disasters/incidents are laid down in the Indian Maritime Doctrine of 2009.⁵⁴ These include HADR, aid to civil authorities, provision of relief materials, medical assistance and diving support, among others. At the internal organisational level, an Indian Navy Environment Conservation Roadmap (INECR) was adopted in June 2019, which comprised action plans to reduce energy consumption and diversify the sources of energy towards environmental sustainability and reduction in carbon footprint. The roadmap is spread across various functional domains of the Indian Navy, including its operations, maintenance, administration and infrastructure development.⁵⁵

One of the major initiatives of the Indian Navy to reduce carbon footprint and GHG emissions has been the introduction of new high-flash high-speed diesel — in collaboration with the State-owned Indian Oil Company — for its ships from January 2020 onwards. The fuel with revised nomenclature of ‘HFHSD-IN512’ reportedly meets the stringent International Standardisation Organisation (ISO), International Convention for the Prevention of Pollution from Ships (MARPOL) and North Atlantic Treaty Organisation (NATO) specifications with respect to critical parameters like cetane number, flash point, sulphur and sediment content, oxidation stability and cold filter plugging point.⁵⁶

Indian Navy as first responders — HADR and SAR

Notwithstanding the various conceptual and prescriptive measures mentioned above, the most visible and people-friendly benign face of the Indian Navy has been demonstrated again and again in the aftermath of umpteen disasters that the region has been contending with. The post-disaster humanitarian assistance provided to the IOR littoral governments, local authorities, port and harbour establishments and the affected populace across the entire IOR has brought unprecedented appreciation and resultant goodwill for India. These activities have spanned the entire spectrum of providing emergency relief supplies, clean drinking water, urgent medical intervention and medicines, pandemic control, diving assistance, aerial- and sea-based search and rescue, opening navigable channels and re-establishing navigational marks, and many more.

The Indian Navy became the first agency to respond to the urgent call for disaster relief by flood-ravaged Madagascar by launching ‘Operation VANILLA’ in January 2020. This was preceded by extensive HADR and SAR missions carried out by warships and helicopters of the Indian Navy to help Mozambique after the cyclone ‘IDAI’ tore through the island nation in March 2019.⁵⁷ The risky manoeuvres carried out by the Indian helicopter crew and rescue personnel in helping the distressed population in adverse weather conditions and trying circumstances, with scant regard to their own personal safety, drew international acclaim far and wide. While these missions drew maximum visibility, the Indian Navy has consistently been at the forefront of regional HADR and SAR missions throughout, thus providing

wholesome traction to the well-deserved moniker of ‘preferred security partner’ and ‘first responder’ in the Indian Ocean, for India.⁵⁸

Recommendations

India is getting increasingly concerned about China’s growing presence in the IOR under various pretexts — be it for deep-sea underwater research in ISA allocated site, hydrographic survey assistance, anti-piracy missions, or the Belt and Road Initiative. It is posited that the well-earned regional goodwill and confidence generated by being the ‘preferred security partner’ and ‘first responder’ must be leveraged adroitly, so as to consolidate the Indian influence over the IOR littorals. The wholesomeness of Indian maritime ‘soft power’ so assiduously built, has to sustain in intensity and frequency as the climate change related extreme events in IOR increase, so as not to cede any space for Beijing to further its influence as a zero-sum game.

It goes without saying that mere proactive maritime disaster response approach and outreach will not suffice in this endeavour; and will have to be well-backed by the whole-of-nation approach through the Indian diplomatic, economic, and informational facets of influence-building. It is, therefore, recommended that India should consider the following policy measures — the list not being exhaustive by any means — to retain its multi-faceted influence in the region, with an aim to leave little room for China to manoeuvre within:

- Integrate the common grounds, especially those relating to non-traditional security challenges — climate change related effects lying within — between IORA and IONS internally.
- Present a unified Indian approach while interacting with other international institutions, bodies, and mechanisms in suggesting mitigation measures to tackle climate change-induced security challenges, with an aim to safeguard peace and stability in IOR.
- Proactively assist countries in immediate neighbourhood with the resources and skills to address climate related incidents like draughts, flooding, cyclones, population displacement etc.

- Promote regional cooperation for human and environmental safety, especially arising from large-scale coastal inundation due to sea level rise in low lying area of countries like Bangladesh and Maldives.
- Provide survey support — in certain pre-decided priority — in establishing baselines, to countries which lack this capability. This must be done with utmost urgency, since Chinese maritime survey establishment will proactively move in to occupy any perceived vacuum in this domain.
- Render expert advice on the effect of sea-level rise on maritime baselines and associated maritime zones in future; along with robust dialogue — bilateral or multilateral — being conducted on interpretation of relevant provisions of UNCLOS in the prevalent circumstances and situation arising in future. This will prevent the extra-regional forces from offering their unilateral interpretation to the detriment of the Indian interests.
- Endeavour to provide cleaner diesel fuel — as is being used by the Indian Navy warships — to other IOR countries for their sea-borne transportation with an aim to reduce regional GHG emissions. This will further cement India's position of selfless friendliness in the region.
- The Indian Navy, all this while, must continue to prepare to respond to a wide range of future climate-induced challenges and contingencies in the IOR.

With the resultant environment favourably disposed towards India, the Indian government could work towards building regional consensus for suggesting amendments to existing provisions in Part XII of UNCLOS relating to 'protection and preservation of the marine environment'; and even seek insertion of new sections specifically meant to address climate change inducing maritime pollution like GHG emissions.

Conclusion

The recent sixth IPCC Working Group-III Assessment Report (IPCC AR6 WG III), released on April 4, 2022 has confirmed that Climate change is a reality now,

and that the ambitious target of limiting the global temperature rise to within 1.5°C above pre-industrial levels by 2030, will certainly be exceeded — unless temperature rise peaks by 2025 and thereafter declines by an incredible 43 per cent till the target year. The report also warns that it will become increasingly harder for the global community to limit the temperature rise to within 2°C above pre-industrial levels by the end of 21st Century, after 2030.⁵⁹

The resultant impact on natural and Ocean ecosystems from current global warming level — of 1.1C rise above pre-industrial age — is being observed across the world, as also in the Indian Ocean region. The global community, in response, is grappling with debilitating effects of climate change by resorting to varying degrees of mitigation and adaptation measures under the 1992 UN Framework Convention on the Climate Change (UNFCCC) and the 2015 Paris Agreement. The current trends of extreme weather events — like excessive precipitation and increasing number of tropical storms — do indicate that these mitigation and adaptation measures are proving to be quite insufficient to address the enormity of the problem at hand.

The IPCC-AR6-WG III report also warns that the quantum of nationally determined contributions of GHG emissions announced prior to COP26 will not be able to limit global warming even by 2°C, by the turn of 22nd Century. Therefore, the global community must get into emergency action mode now to ensure that the target of 2°C rise by 2100 should not be crossed at any cost, else the planet Earth will be forced into experiencing irreversible physical effects of the climate change. It is also important to recognise that ocean action and climate action are intrinsically linked; and that the ocean-based action should form the central pillar of the global response strategies for addressing climate change issues. The IPCC Special Report on the Ocean and Cryosphere (SROCC) also indicates that a broad range of ocean-based solutions can strengthen mitigation and adaptation efforts across existing UNFCCC processes. This approach will certainly be useful in achieving the IMO Initial Strategy (2018) to reduce GHG emissions from maritime transport.

One of the most important climate-induced maritime challenges is the legal implication of sea-level rise on a coastal state's maritime zones under the 1982 UNCLOS. The retreating baselines would in turn, affect the extent of maritime

zones within which sovereign rights, jurisdiction and economic entitlements accrue to a coastal state. Some coastal countries have sought legal recognition of existing baselines as permanent, irrespective of the impact of sea-level rise. These differing and sometimes unilateral interpretations of the UNCLOS stipulations will result in creation of new maritime disputes. The ensuing scenario has the potential to trigger geopolitical tensions in the maritime domain in near future.

Though a Study Group under the UN International Law Commission is currently examining the possible legal effects or implications of sea-level rise, the mandate of this ILC Group, however, is limited to outlining some key issues only. It cannot propose modifications to existing international law, such as the UNCLOS. Therefore, it will be more appropriate for UN Secretary General, under Article 319 (2) (e), to refer the matter to the State Parties to the UNCLOS (SPLOS) to examine the legal issues arising from the climate-induced sea level rise. This is critical for addressing the legal uncertainties over the impact of sea-level rise on baselines, and associated breadth of the maritime zones under the existing UNCLOS regime.

Climate change situation has the potential to severely affect the economies of Indian Ocean littorals, leading to adverse impact on their domestic stability and regional security. India as the resident and centrally located regional power in IOR, must take responsibility for spearheading collective awareness and education campaign to highlight the existential threats arising from climate change phenomenon. The same must be followed through by proactively rallying the IOR littorals towards a structured climate change response plan, by leveraging the 'soft power' and goodwill generated through being an erstwhile 'net provider of security,' and now graduating to being a 'preferred security partner' and 'first responder' in the IOR.

Since climate-induced human and natural challenges are likely to exacerbate as the 21st Century comes to pass, there should be clear focus on the part of India to take the region along in its fight against the physical effects of climate change. Though the collaborative route to be charted out will be full of geopolitical obstacles, trials and tribulations — as many a collaborative initiative of the past have shown — this is the only viable way forward if the region hopes to synergistically rise to the challenge without interference of extra-regional entities with dubious agendas. With

this realistic apprehension as the backdrop, the Indian strategic security establishment needs to consider the suggested policy recommendations, to pre-empt extra-regional countries — like China — from benefiting from climate-induced vulnerabilities of IOR countries towards expansion of their geopolitical influence therein.

11 July 2022

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*Legal Underpinnings of
Maritime Security*

Criminal Jurisdiction in International Law

Ms Mino Daryanani

Even almost a century after the seminal 1927 Permanent Court of International Justice (PCIJ) Judgment in the LOTUS Case, international law still does not provide clear rules for determining jurisdiction in case of overlapping, contesting claims of jurisdiction by two or more sovereign states. Recent judgments of the International Tribunal of the Law of the Sea (ITLOS) now provide a growing body of precedents under the 1982 UN Convention on the Law of the Sea (UNCLOS), that contain glimmers of potential rules, a skeletal framework of guiding principles to determine jurisdiction in disputes involving two or more sovereign states.

The maritime incident involving two Italian marines on board the tanker MT ENRICA LEXIE,¹ shooting Indian fishermen mistaking them to be pirates off the coast of Kerala, has once again catapulted the thorny issue of criminal jurisdiction in international law for judicial scrutiny. It may be pertinent to first review the various theories of jurisdiction that have evolved over the years,² then peruse the growing body of judgments by the International Tribunal of the Law of the Sea (ITLOS) to gain insight as to what constitutes criminal jurisdiction in international law.³ Specifically, what factors enable the jurisdiction to be decided in favour of a particular sovereign State when two or more contesting States claim the right to hold trial according to its national laws.

Criminal jurisprudence in international law, to a great extent, has been shaped and moulded by its various theories of jurisdiction. Although international law particularly focuses upon questions of criminal offences, essentially leaving civil matters to municipal law and national enforcement, in the actual implementation of punitive action for criminal offences international law has proven to be

ambivalent and lacking muscle. This may largely be to ensure that the practice or implementation of international law is in no way contrary to the tenets of sovereignty of even the smallest of nations. Also, without doubt to preserve if not enhance, without disturbing or disrupting, the carefully crafted goodwill amongst the comity of nations.⁴ Several principles over the years have emerged in international law that provide the touchstone for ascertaining and establishing jurisdiction, particularly for crimes committed at sea.

Theories of Jurisdiction

According to the 'territorial principle', States have exclusive authority to deal with crimes committed within their territories. This principle has been somewhat circumvented to permit officials from one State to act within another State in certain circumstances.⁵ The presence of US troops in war-torn countries like Taliban-dominated Afghanistan or in the ISIS traumatized regions of West Asia like Jordan, Syria, etc. would be good examples of such circumvention of the territorial principle.

In the case of the 'nationality principle',⁶ a country is entitled to exercise criminal jurisdiction over its citizens accused of criminal offenses committed in another State. Although this principle has been adopted mainly by civil-law systems, its adoption by common-law regimes increased in the late 20th century, evident in the legislation by Britain of the War Crimes Act in 1991 and the Sex Offenders Act in 1997.

States, based upon the 'passive personality' principle, may claim jurisdiction to try a foreign national for offenses, committed outside its territory, that adversely affect its own citizens. This principle has been often used by the United States to pursue, prosecute terrorists, even to arrest such criminals as seen in the kidnapping of the de facto President of Panama, Manuel Noriega. Noriega was subsequently convicted by an American court for cocaine trafficking, racketeering and money laundering.⁷

A number of Conventions, it is worth noting, have embodied the 'passive personality principle', such as the Convention Against the Taking of Hostages (1979),

the Convention on the Prevention and Punishment of Crimes Against Internationally Protected Persons (1973), and the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984).⁸

Similarly, the 'protective principle', reflected in the hostages and aircraft-hijacking Conventions and the Convention on the Safety of United Nations and Associated Personnel (1994), may be invoked by a State in cases where a foreigner has committed an act abroad deemed prejudicial to that State's interests, as distinct from harming the interests of its nationals.⁹

A recent example of extra-territorial State-action, reflecting both the 'protective' as well as the 'prescriptive' principles, would be the surgical killing of Osama bin Laden, the founder of Al Qaeda, the terrorist network of Islamic extremists. Osama bin Laden was the mastermind of the 9/11, 2001 most lethal terrorist attacks ever on U.S. soil, which left nearly 3,000 people dead. It is a significant instance of a State's unilateral action to eliminate the global menace of terror, a well-recognized crime against humanity. Soon after the 2001 attacks, President George W. Bush had declared Osama bin Laden would be captured dead or alive. Subsequently, on 02 May 2011, Navy SEALs descended on the Abbottabad compound, located behind high security walls in a posh residential neighbourhood, close to an elite military academy north of Pakistan's capital, Islamabad. It was later determined that Al Qaeda intended to assassinate President Barack Obama and carry out a series of terror attacks against America, including one on the anniversary of 11 September. *Operation Neptune Spear* was executed by the United States purportedly without informing the Pakistani government.

The 'universality principle', on the other hand, enjoins and imposes an obligation for exercise of jurisdiction in cases where the alleged crime may be prosecuted by all States (e.g., war crimes, crimes against the Peace, terrorism, crimes against humanity, slavery, drug trafficking and piracy).¹⁰ The 'universality principle' thus underscores the nature (gravity, inhumanity) of the Crime rather than a direct nexus with the State invoking the 'universality principle'. In practice universal jurisdiction is only exercised when the alleged perpetrator is, usually by use of force, compelled to be present in the asserting State's territory.¹¹

Operation Alondra Rainbow

Operation Alondra Rainbow is a sterling example of a State fulfilling its international obligations to curb piracy by capturing and prosecuting the pirates. It began as a routine interception at sea but within a few hours acquired serious international implications. It was in November 1999 that the Indian Coast Guard first received a tip-off that a vessel had been spotted off the Sri Lankan coast resembling the Japanese ship *ALONDRA RAINBOW* which had gone missing. Curiously, the name this vessel displayed was *MEGA RAMA*. Due to surveillance by aircrafts of the Indian Coast Guard, a vivid detailed description with photographs of *MEGA RAMA*, were flashed for verification to the International Piracy Centres worldwide.

When the vessel entered Indian territorial waters, it was pursued by the Indian Coast Guard interceptor boats. *MEGA RAMA* however managed to evade interception and slipped away into the mid-Arabian Sea. Confirmation was soon received from the International Piracy Centres and various shipping agencies that the physical characteristics of the vessel matched that of the pirated Japanese ship *ALONDRA RAINBOW*. The Indian Navy, which had been closely monitoring the Coast Guard action, upgraded its operational response to deploy a task force. The vessel was intercepted under Article 105 of the 1982 UNCLOS.¹²

What clearly emerges from the aforesaid perusal of the various principles of jurisdiction, is that in the law of jurisdiction primary focus has been predominantly devoted to ‘prescriptive’ or ‘legislative’ jurisdiction. Such jurisdiction refers to the power of a State to make its laws applicable to the perpetrators of certain offences, and/or the property owned by them located abroad, by legislation. Under this principle espoused by the Permanent Court of International Justice (PCIJ) in the seminal 1927 Lotus Case,¹³ States are in principle free to exercise prescriptive jurisdiction, unless a prohibitive rule to the contrary exists in international law or could be so identified. This caveat was expounded by the PCIJ that by exercise of jurisdiction in any given case, the State does not “overstep the limits which international law places upon its jurisdiction”. The words set between quotation marks are taken from the famous decision of the PCIJ in the Case of the *S.S. LOTUS* (France v. Turkey). The

PCIJ held that “[T]he first and foremost restriction imposed by international law upon a State is that – failing the existence of a permissive rule to the contrary – it may not exercise its power in any form in the territory of another State.”¹⁴

Case of the S.S. *LOTUS* (France v. Turkey) 1927

It may at this point be worth examining the facts of the *LOTUS* case. The case arose out of a collision on the high seas between the French mail steamer *LOTUS* and the Turkish collier *BOZ- KOURT*, in which the latter sank, and several Turkish citizens lost their lives. The arrest and conviction of the French first officer in Turkey, which was strongly contested by France, raised the question of the jurisdiction of the Turkish authorities to arrest the French national. The French Government had argued that under international law the fact that the victims were nationals of the forum (Turkey) would be insufficient to justify its exercise of jurisdiction over a foreigner for his extra-territorial acts in the high seas.

The PCIJ stated that that the offence of collision produced its effects on the Turkish vessel,¹⁵ demise of Turkish nationals, and consequently in a place assimilated to Turkish territory in which the application of Turkish criminal law cannot be challenged.¹⁶ Thus, by the process of assimilation the PCIJ did broaden the concept of territoriality.¹⁷ The final judgement however, it may be noted, was based on the rules of navigation as the offence arose out of collision between the two vessels in the high seas, for which reason the jurisdiction of the Flag State was upheld.

It may be categorically stated that the rules of the enforcement of jurisdiction are far stricter than the rules of prescriptive jurisdiction.¹⁸ As the PCIJ held in the *LOTUS CASE*, *supra*,¹⁹ States are not entitled to enforce their laws outside their territory, “*except by virtue of a permissive rule derived from international custom or from a convention,*” even when they have jurisdiction to prescribe and apply their laws extra-territorially as propounded in their national laws.

Based upon the law of ‘prescriptive jurisdiction’, States may exercise jurisdiction on an extra- territorial basis, especially in criminal matters.²⁰ Irrefutably, enforcement of prescriptive jurisdiction can only occur by arresting the accused person, who then

has to be present in its territory; or by seizing property of the defendant located within its territory and/or abroad. Often, consent by other States and their co-operation will be required to bring about the presence in its territory of the accused person by means of extradition. Alternatively, or in addition, to have a domestic court order enforced against assets of the accused person located abroad (“*global Mareva Injunction*”). Such consent or co-operation is not always forthcoming from other sovereign States, which explains why States have at times unilaterally resorted to extra-territorial enforcement measures, patently in violation of international law.²¹

The ‘Functional jurisdiction’ is a method by which the dilemma of establishing criminal jurisdiction in favour of one contesting State may be resolved. It is a term that is mostly used in the context of the law of the sea. In essence, it refers to the coastal State’s diminishing jurisdiction over activities in their maritime zones (the territorial sea, the contiguous zone, the exclusive economic zone, and the continental shelf). The device of functional jurisdiction, to a limited extent, may refer to any State’s jurisdiction over certain criminal activities (“universal crimes”) on the high seas, such as piracy, acts of terrorism, trade in enriched uranium, materials used for nuclear weapons, drug-trafficking, or the trade in slaves. Such functional jurisdiction is naturally geared towards protecting coastal States own legitimate interests first.²² Although exceptionally rather than the rule, functional jurisdiction is also amenable towards protecting common concerns of the comity of nations. This is exemplified by the guiding principle of common heritage of mankind, which accords preservation of the marine environment with cast-iron legal sanctity, making it to be an international obligation for nation States under the 1982 UNCLOS. The looming dangers of Climate Change galvanised the UN General Assembly in September 2015 to adopt the 2030 holistic Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs).

Functional jurisdiction involves both a prescriptive and an enforcement component, which do not necessarily coincide. For example, the coastal State may adopt laws and regulations relating to ‘innocent passage’ through its territorial sea in respect of a considerable number of activities impinging upon its maritime domain, but it may only enforce those laws (whether criminal or civil) in certain limited circumstances, depending upon its strategic priorities and national interest.

Finally, there is ‘jurisdictional immunity’ which applies to diplomats, including diplomatic missions and archives, under the Vienna Convention on Diplomatic Relations, 1961 and the Vienna Convention on Consular Relations, 1963. Immunity generally is from criminal prosecution, not for civil liabilities arising from contractual obligations, debts, traffic violations, etc. Immunity from local jurisdiction and local laws may also apply to International Organisations in accordance with the General Convention on the Privileges and Immunities of the United Nations, 1946 and agreements signed with the State in which they operate. Judges of International Courts and visiting armed forces personnel may also enjoy certain immunities from local jurisdiction and that State’s national laws.

Whether the prohibition of extra-territorial law enforcement applies to cyberwarfare, deliberate disabling of another State’s critical infrastructure, security, digital systems, etc.?

In recent years, with the steady increase in global communication, especially the explosion of the Internet, the ubiquitous nature of social media, omnipresence of the electronic and social media platforms allow and facilitate spatially remote individuals to connect and communicate even spread, propagate dangerous ideologies. Ever advancing cutting-edge technology has increased manifold the ever-present threat, which is real and hydra-headed, from cyber-crime, malware, the shadowy world of the dark web, etc.; capable of disabling and vitiating a nation’s vital assets including computer networks, security establishments, critical services and infrastructure. It is, however, not yet fully settled whether the prohibition of extra-territorial enforcement also applies to technological remote searches on computer networks located abroad.

Remote searches carried out by a State with respect to information held on websites, computers or servers located outside its territory are not contested in case where the information is publicly accessible or in the public domain (see Article 32 Cybercrime Convention, 2001); or when the territorial State allows such searches, or the information-holder gives its consent. Some States, however, carry out remote searches on foreign servers without relying on legal assistance and redress, or without seeking the consent of the territorial State where the foreign servers are located. Such action appears to be in conflict with the LOTUS-prescribed prohibition on

extra-territorial law enforcement, but arguably would be declared to be in defence of national interest and security.²³

No clearly defined rule of international law has yet evolved to resolve conflicts arising from overlapping jurisdictional claims

What may be concluded, from the above analysis of the theories of jurisdiction in international law, is that there is a patent presumption against extra-territoriality. A multitude of States may potentially claim jurisdiction on the basis of the real or perceived trans-boundary effects of the commission of just one single offense, as in the case of manslaughter at sea, accidental or mysterious death on board a vessel, or an oil-spill spreading towards the Coast of several States. Inevitably, this may give rise to international friction between contesting States claiming exclusive jurisdiction.

Unfortunately, to date, no clearly defined rule of international law has yet emerged that could resolve conflicts arising from overlapping, *prima facie*, lawful jurisdictional claims.²⁴ There is no rule giving priority to the “*most interested*” or “*affected*” State. Although it may appear logical to give the territorial State first preference and unhindered right of way for exercising jurisdiction, given the historic roots and the strong territorial anchoring of the law of jurisdiction bolstered by the thumb-rule of the place of occurrence of the Crime giving rise to the cause of action.²⁵

The *ENRICA LEXIE* case presented just such a dilemma of resolving overlapping, lawful jurisdictional claims based on territoriality and nationality. Some other recent judgments of the International Tribunal of the Law of the Sea (the Tribunal) may be perused to glean a set of rules for establishing jurisdiction between contesting States for the trial of persons committing criminal offences on the seas.²⁶ Such a perusal would also throw light on the factors that govern and weigh in favour of a particular contesting sovereign State.

Briefly, let us first consider the facts of *M/V SAIG* (No. 2) Case (Saint Vincent and the Grenadines v. Guinea). At the time of the incident, the *M/V SAIGA* served as a bunkering vessel supplying fuel oil to fishing vessels and other vessels operating off the coast of Guinea. *M/V SAIGA*, on crossing the maritime boundary between Guinea and Guinea Bissau, entered the exclusive economic zone of the Guinean island

of Alcatraz, when she was arrested by Guinean Customs patrol boats. The vessel was brought into Conakry, Guinea where the vessel and its crew were detained. No bond or other financial security was requested by Guinean authorities for the release of the vessel and its crew, nor was it offered by Saint Vincent and the Grenadines.

Thereafter, Saint Vincent and the Grenadines approached the International Tribunal for the Law of the Sea (the Tribunal) under Article 292 of the 1982 UNCLOS and submitted that the Tribunal should direct that the vessel, her cargo, and crew be released immediately. The Applicant was prepared to provide any security reasonably imposed by the Tribunal. Guinea requested the Tribunal to dismiss the Applicant's action.

The Tribunal, after considering the question of its jurisdiction under Article 292 of the 1982 UNCLOS to entertain the Application, was of the view that Article 73 did not apply as no bond, or any other security had been offered or bail posted. The Tribunal held that according to Article 292, the posting of a bond or security was a mandatory requirement. It noted that Guinea had not notified Saint Vincent and the Grenadines of the arrest and detention of *M/V SAIGA* as required by Article 73, paragraph 4. In the circumstances, it did not seem reasonable to the Tribunal to hold Saint Vincent and the Grenadines responsible for the fact that a bond had not been posted. Thus, the averments made by Saint Vincent and the Grenadines were well founded. Consequently, Guinea had to promptly release the *M/V SAIGA*, her crew, and cargo.

The second case, *M/V VIRGINIA G* has somewhat similar facts. *M/V VIRGINIA G*, an oil tanker flying the flag of Panama, was arrested by the authorities of Guinea-Bissau for carrying out re-fuelling operations for foreign vessels fishing in Guinea-Bissau's exclusive economic zone. The Tribunal found that "*Guinea-Bissau had violated the Convention by confiscating the M/V VIRGINIA G and the gas oil on board*" and "*by failing to notify Panama, as the flag State, of the detention and arrest of the M/V VIRGINIA G and subsequent actions taken against the vessel and its cargo.*" The Tribunal held Guinea-Bissau "*to have exceeded its exclusive economic zone enforcement entitlements under the Convention by going beyond what was necessary and proportionate*" in the circumstances. Guinea-Bissau further violated the Convention by preventing

Panama, as the Flag State, from intervening at the outset by failing to notify Panama of the arrest and detention.²⁷

The Tribunal's decision in the *M/V VIRGINIA G* establishes, it is noteworthy, that Reparation would be awarded against coastal States that cause disproportionate damage or losses while exercising their rights and entitlements under the 1982 UNCLOS against foreign vessels operating within their maritime boundaries.

Reparations were also awarded to the Flag State in the *M/V NORSTAR* case (Panama v. Italy) which dates back to 1998, when Italy requested Spain to arrest the Panamanian-flagged ship *M/V NORSTAR* for supplying diesel to several yachts beyond the Italian, Spanish, and French territorial seas. Italy alleged that the vessel was also liable for smuggling and tax evasion. In this incident there were several coastal States and the Flag State involved, presenting a classic instance of overlapping jurisdictions. To complicate matters, the ship was on the high seas when it supplied diesel to other vessels. On entering the port of Palma de Mallorca, the Spanish authorities arrested the vessel, acting on the Italian request.

Panama, in accordance with Article 287 of the 1982 UNCLOS, invoked action against Italy for wrongful arrest and detention by Italy of *M/V NORSTAR*, an oil tanker that flew its flag. It requested the Tribunal to determine whether Italy, by arresting the *M/V NORSTAR*, had infringed upon the rights of Panama provided under Article 87. Italy's stand was that the arrest was primarily for probative purposes, for collecting evidence as their investigations had revealed that the *M/V NORSTAR* was involved in the business of the illegal sale of the fuel, purchased in Italy in evasion of tax duties, to a clientele of Italian and other EU leisure boats in international waters off the coast of the Italian city of Sanremo.

The Tribunal held that Article 87, which ensures the 'right of freedom of the high seas', which right includes irrefutably freedom of navigation, was applicable in favour of Panama. On the issue of Reparations, that the damages suffered by Panama were a direct consequence of "the arrest and detention by Italy of *M/V NORSTAR*," the Tribunal ordered a compensation of 285 thousand dollars to Panama for the violation of its irrevocable right of freedom of navigation.²⁸ Here again the Tribunal held in favour of the Flag State.

In the *ENRICA LEXIE* legal dispute, the arbitral proceedings were instituted under the 1982 UNCLOS on 26 June 2015, when Italy served on India a Notification under Article 287 and Annex VII, Article 1. The dispute arose from an incident that occurred approximately 20.5 nautical miles off the coast of India involving the *ENRICA LEXIE*, an oil tanker flying the Italian flag and India's subsequent exercise of criminal jurisdiction over the two accused, Italian marines from the Italian Navy on board the oil tanker. The incident concerned the killing of two Indian fishermen fast asleep on board the *ST. ANTONY*, an Indian fishing vessel, in Indian waters and India's subsequent rightful exercise of jurisdiction for crimes committed against its nationals and their property, the Indian flagged fishing boat. Purportedly, the two Italian marines aboard the *ENRICA LEXIE* killed the fishermen mistaking them to be pirates.

On 02 July 2020, the Permanent Court of Arbitration released an extract of its Award.²⁹ The Tribunal found that India had not violated sections of Articles 7, 92, 97, and 100 as Italy contended. However, it ruled that India was precluded from exercising its jurisdiction over the Marines. The Tribunal found that Italy had breached Articles 87 and 90 by interfering with the navigation of the *ST. ANTONY*, but had not violated Articles 56, 58, or 88. Regarding compensation, the Tribunal held that India was entitled to payment of compensation loss of life of its citizens, physical harm to its fishermen, material damage to property the fishing boat, mental agony and moral harm suffered by the crew members.³⁰

On 10 August 2020,³¹ the Award was published.³² The Tribunal reasoned that both claims for jurisdiction had distinct elements of both the nationality and territoriality principles, including flag state claims of both India and Italy, and ruled that both India and Italy had concurrent jurisdiction. Surprisingly, the Security element applicable to India, the territorial integrity of its contiguous zone and the sanctity of life of the fishermen, its citizens was not considered by the Tribunal at all, a serious lapse and flaw in the Award.

Russia-Ukraine dispute pending before ITLOS: Sovereign immunity of warships and other government vessels, the peacetime right of freedom of navigation by military vessels.

Interestingly, a provisional decision of the Tribunal in a yet to be resolved dispute between Russia and Ukraine provides vital clues to the future development of criminal jurisdiction in international law.³³ It was established before the Tribunal that Russian Coast Guard forces, in tandem with a Russian naval corvette and military aircraft, had fired on two Ukrainian warships and a naval auxiliary as they attempted to transit the narrow Kerch Strait, defying the warnings of Russian military authorities. The warships and their crew were captured and detained in Russia, charged with violating Russian criminal law.

Ukraine urgently approached the Tribunal requesting emergency relief through provisional measures,³⁴ for the immediate release of the warships. Under the 1982 UNCLOS, in urgent situations to prevent a real and imminent risk of irreparable harm and prejudice to the rights of one Party, in this case Ukraine, such measures are authorized under Article 290. Earlier, Russia had by declaration in accordance with Article 298 of the Convention exercised its right to exempt military activities from compulsory dispute resolution procedures. The sole issue, therefore, before the Tribunal was ‘whether Russia’s action constituted military activities’.

It was Ukraine’s contention that a dispute does not have to ‘concern military activities’ simply because it involves warships or because warships are present at the relevant time. According to Ukraine, it is not the type of vessel, but rather the type of activity the vessel is engaged in that matters. Concurring, the Tribunal was of the view that, “*the distinction between military and law enforcement activities must be based primarily on an objective evaluation of the nature of the activities in question, taking into account the relevant circumstances in each case*”.

The Tribunal determined that Russia’s actions were not military in nature but part of its law enforcement operations. The deciding factor, *inter alia*, which clinched the issue was the invocation by the Russian Federation of Article 30 of the 1982 UNCLOS – ‘Non-compliance by warships with the laws and regulations of the coastal State’, to justify its detention of the vessels.

The Tribunal considered the right of Ukrainian ships to transit the Kerch Strait to be a navigational issue under the regime of ‘innocent passage’ and not *per se* a military activity, as ‘innocent passage’ is a right enjoyed by all ships (Para 68, Order).

Further, the Tribunal noted that Russia had acted to enforce its 2015 navigational regulations and temporary suspension of the right of ‘innocent passage’, which were both law enforcement activities (Para 71, Order).

The Tribunal concluded, and categorically was of the view, that Russia’s use of force against the Ukrainian naval ships was in the context of a law enforcement operation rather than a military operation (Paras 73-74, Order). The subsequent arrest and detention of the Ukrainian naval ships and criminal proceedings against the Ukrainian sailors strengthened the finding that Russia had conducted a law enforcement action rather than a military operation (Paras 75-76, Order).

The Tribunal did, however, recognize, vindicate, and uphold two important customary rights: sovereign immunity of warships and other government vessels, and more importantly, the peacetime right of freedom of navigation by military vessels. The Tribunal had no hesitation to declare in no uncertain terms: ‘*Under the Convention, passage regimes, such as innocent or transit passage, apply to all ships*’ (Para 68, Order).

According to Prof James Kraska, the Tribunal has greatly reduced, diminished and diluted the right of States to opt for military activities exemption from international judicial scrutiny.³⁵ In a significant deviation from the broader view of military activities reflected in the 2016 Philippines v. China Arbitral Award, the Tribunal held that the confrontation over “innocent passage” was a navigational issue, rather than a military activity.³⁶ It based its conclusion upon the customary rule that ‘innocent passage’ is a widely-recognized norm of international law and thus a right enjoyed by all ships, including warships.

The Tribunal also determined that Russia’s temporary suspension of ‘innocent passage’, declared conveniently to halt the transit of Ukrainian warships, was a law enforcement activity rather than a military operation. These factors led the Tribunal to conclude that Russia’s actions were in the context of law enforcement measures rather than qualifying as a military operation.³⁷

Clearly, the interlocutory Order by ITLOS unambiguously recognizes and establishes that curtailment or prohibition of ‘innocent passage’, even to military

vessels, as violative of international law. Moreover, the invocation by the Russian Federation of Article 30 of the 1982 UNCLOS: ‘Non-compliance by warships with the laws and regulations of the coastal State’, to justify its detention of the Ukrainian naval vessels, was considered by ITLOS further proof of law enforcement by Russian authorities. Thus, could not be considered as conduct of “military activities.” This conclusion may be seen as indicative of the rationale behind ITLOS judgments to unreservedly recognize, reiterate, and uphold the customary rules and traditional norms of international law, *viz.*, freedom of navigation, “innocent passage”, flag state jurisdiction.

What emerges from the above forensic examination of recent ITLOS judgments is that Flag State jurisdiction continues to hold sway and reign supreme; it would be extremely difficult to dislodge in favour of either coastal or territorial jurisdiction. Evidently the well-established rule of international law that the law of the Flag State, which exclusively governs the affairs of the ship and crew, appears to be deeply entrenched, almost unassailable and irrevocable. Exceptional, perhaps even extenuating extraordinary, circumstances would be required to overturn, dislodge, whittle down, circumvent or even bypass this deep-rooted, impervious rule of Flag State supremacy in international law for criminal offences at sea.

14 July 2022

ENDNOTES

1. Cf. Footnotes 30 to 33 herein.
2. Britannica Online Dictionary, “Jurisdiction”, <https://www.britannica.com/topic/international-law/Jurisdiction>.
3. Legality of Law Enforcement Activities at Sea (ITLOS Cases No. 2, 19, 24 and 25).
4. “*States are in principle not allowed to assert jurisdiction over affairs which are in the domain of other States typically acts that take place extra-territorially as such would violate the sacrosanct principles of non-intervention and the sovereign equality of States.*” Cedric Ryngaert, Professor of International Law, Utrecht University in “The Concept of Jurisdiction in International Law (second edition ‘Jurisdiction in International Law’ 2015).

5. Channel Tunnel arrangements between the United Kingdom and France and the 1994 Peace Treaty between Israel and Jordan are illustrative examples of exception to the rules governing the territorial principle.
6. *Supra* 2.
7. Adolf Eichmann was kidnapped in Argentina by Israeli secret agents for 'crimes against the Jewish people and crimes against humanity'. The Israeli action exemplifies the passive personality, protective as well as the prescriptive principles of jurisdiction in international law.
8. *Supra* 2.
9. At times, States have exercised their law enforcement jurisdiction abroad, without the consent of the territorial State, by arresting persons outside their territory. Adolf Eichmann was kidnapped in Argentina by Israeli secret agents, without the consent of the territorial State, and charged with 'crimes against the Jewish people' and 'crimes against humanity' under the Nazis and Nazi Collaborators (Punishment) Law of August 1, 1950. Not surprisingly, such actions have usually met with considerable protestations by other States.
10. Articles 105 to 111 of the 1982 UN Convention on the Law of the Sea (1982 UNCLOS).
11. *ALONDRA RAINBOW* case, the first ever piracy trial was held in Mumbai, India. In October 1999 the Japanese owned & manned bulk carrier *ALONDRA RAINBOW*, plying under the Panamanian flag, was hijacked in Indonesian waters. Having set the Japanese master and crew members adrift mid-ocean to the perils of the sea, the pirates changed the ship's name to *MEGA RAMA*. The pirates then set sail westwards for the open waters of the Indian Ocean with \$14 million worth of cargo on board. The Singapore Piracy Reporting Centre raised an alarm, and the pirated vessel was sighted in Indian waters off Kochi. After a dramatic high seas chase involving first the Indian Coast Guard and then the Indian Navy, the vessel was captured, and the pirates brought ashore to the Yellow Gate marine police station in Mumbai. However, six years later, the pirates were set free by the Mumbai high court due to technical lacunae in the prosecution's case.
12. This empowers any State to seize a ship or aircraft captured by pirates.
13. PCIJ, *SS Lotus*, PCIJ Reports, Series A, No. 10, 18-19 (1927).
14. *Ibid.*, PCIJ, *SS LOTUS*, PCIJ Reports, Series A, No. 10, 18-19 (1927).
15. Ships and aircraft enjoy the nationality of the State whose flag they fly, in which they are registered and are thus subject to its jurisdiction.

16. *Ibid.*, PCIJ, SS LOTUS, PCIJ Reports, Series A, No. 10, (1927).
17. Arthur Lenhoff in “International Law and Rules on International Jurisdiction”, *Cornell Law Quarterly* (vol. 50 issue I Fall 1964 pp.5-23).
18. The rules of enforcement jurisdiction are stricter than the rules of prescriptive jurisdiction. As the Court held in the LOTUS case, States are not entitled to enforce their laws outside their territory, “except by virtue of a permissive rule derived from international custom or from a convention,” stated by Prof Cedric Ryngaert in “The Concept of Jurisdiction in International Law”: Utrecht University — (second ed. ‘Jurisdiction in International Law’ 2015).
19. It is a well-established rule of international law, that the law of the flag ordinarily governs the internal affairs of the ship. From the standpoint of international law, the foreign character of vessels, regardless of ownership, is determined by the fact of their registration in a foreign State. *supra* 7 and 9.
20. *Supra* 7 & 9, Adolf Eichmann was kidnapped in Argentina by Israeli secret agents, without the consent of the territorial State, and charged with “crimes against the Jewish people” and “crimes against humanity” under the Nazis and Nazi Collaborators (Punishment) Law of August 1, 1950.
21. Israeli kidnapping of Eichmann, the US kidnapping of Noriega, and the killing of Osama bin Laden in Abbottabad, Pakistan by the US Navy Seals, *supra*.
22. *Supra* 18.
23. The above-mentioned principles of jurisdiction are, to a large extent, founded on the premise of a link with the asserting State, notably nationality which ties jurisdiction to the nationality of the accused or perpetrator and/or the victim of the crime. In the case of the protective or security principle it is normally invoked and applied in the context of territorial sovereignty, preservation of the marine environment and the Resources therein, or political independence as a nation State.
24. *Supra* 18.
25. *Supra* 18.
26. Recent ITLOS cases referred to herein are :- 1. The M/V SAIGA Case No. 2 (Saint Vincent and the Grenadines v. Guinea); 2. The M/V VIRGINIA G Case No. 19 (Panama/Guinea-Bissau); 3. The M/V NORSTAR Case No. 24 (Panama v. Italy); and 4. The ENRICA LEXIE Incident Case No. 25; (Italy v. India).
27. On April 14, 2014, the Tribunal delivered its judgment.

28. On 10th April 2019, having ascertained the jurisdiction of the Tribunal, the Judges found that the activities of the vessel had been carried out on the high seas, which activities were the subject-matter of the wrongful seizure order of the Italian authorities.
29. Italy submitted that India had breached the 1982 UNCLOS in several ways, including by interdicting the ENRICA LEXIE, investigating those on board, and “exercising its criminal jurisdiction over two Italian Marines.” India asserted that the Tribunal did not have jurisdiction to decide this case and that Italy had committed several violations of UNCLOS “[b]y firing at the ST. ANTONY and killing two Indian fishermen (asleep) on board (the Indian-flagged fishing vessel within the Indian contiguous zone)”.
30. On 10 August 2020, the Award, with certain redactions made at the request of the Parties, was published on the PCA Case Repository.
31. From 8 July to 20 July 2019, the hearing was held at the seat of the Permanent Court of Arbitration (PCA) at the Peace Palace, The Hague, the Netherlands. The hearing addressed the jurisdiction of the Arbitral Tribunal as well as the merits of Italy’s claims and India’s counterclaims.
32. On 10 August 2020, the Award, with certain redactions made at the request of the Parties, was published on the PCA Case Repository.
33. On May 25, 2019, by way of an interlocutory Order, the Tribunal prescribed provisional measures in the case brought by Ukraine against Russia, ordering Russia to release three Ukrainian naval vessels and 24 Ukrainian service members seized on November 25, 2018, in an incident in the Kerch Strait.
34. According to Judge Kriangsak Kittichaisaree, Judge of the International Tribunal for the Law of the Sea (ITLOS), at a lecture on 11 May to the IMLI Class of 2020-2021 entitled “Legality of Enforcement Activities at Sea” (Cases No. 2, 19, 24 and 25) [“Four issues shall have to be considered to determine the legality of law enforcement at sea by a sovereign State. These include the compatibility of the national law of the sovereign State with international law; the maritime zone in which law enforcement is being carried out; the context of the activities, the circumstances of the incident which gives rise to the cause of action; and lastly, the rules of engagement”].
35. James Kraska, Chairman and Charles H. Stockton Professor of International Maritime Law in the Stockton Center for International Law at the U.S. Naval War College in his blog: “Did ITLOS Just Kill the Military Activities Exemption in Article 298?”
36. *Ibid.*
37. *Ibid.*

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Note

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International Straits of Relevance to India

Devika Radha, Priyasha Dixit and Zoya Raj Singh

International straits, by way of geography—resulting in their reference as ‘choke points’— and function, are a crucial component of the maritime domain. This is particularly true of the Indian Ocean Region within which India holds a prime position while being surrounded by ‘choke points’ on both its eastern and western seaboard. While these choke points are of significant strategic importance to India, they can only be comprehensively understood and entirely appreciated through a clear picture of the legal regimes that govern them. Thus, this article endeavours to provide readers with an understanding of the geographic, functional, and legal criticality of international straits located within the IOR vis-à-vis India.

Over the last decade, both in India and globally, there has been a marked refocusing of attention towards the maritime domain, specifically towards the Indian Ocean Region (IOR) and the adjacent Pacific Ocean. This refocusing reflects a global acknowledgement of the critical contribution of oceans to States’ growth and prosperity. For India, this refocusing is of particular importance given its central location in the IOR, ensconced by international straits that provide military and economic access to and out of the region. The international straits in reference here are those of Hormuz and Bab-el-Mandeb flanking India on the West and the Indonesian choke points located on the East. In light of this, an overview of the legal regimes applicable to international straits within the IOR is imperative to understanding and appreciating the criticality of these international straits to India.¹ In doing so, the article will begin with a definition of an international strait and its types, followed by an overview of the legal regimes applicable to straits used for international navigation as codified in the United Nations Convention on the Law of the Sea (hereinafter,

UNCLOS). Thereafter, the article will address in detail the international straits found in the IOR and the peculiarities of legal regimes applicable there.

International Straits

By definition, an international strait is a narrow waterway of limited width which is bordered by land and used by both commercial and military vessels and aircrafts for international navigation between the open seas and regions of the world.² The first attempt at defining international straits was made in the 1949 Corfu Channel Case at the International Court of Justice,³ wherein the court stipulated that an international strait is a waterway that connects two parts of the high seas and is used for international navigation.⁴ This precludes man-made structures such as canals which are not considered to be straits and are usually governed by separate agreements concluded between concerned States.⁵

In being used for navigation between different regions of the world, international straits sit at a critical junction of world geography which, in turn, can be seen to dictate navigational terms of use for both small and large countries alike. Their geographical position contributes to their criticality as strategic straits of economic and military importance and has resulted in their reference as ‘choke points’. There are, in fact, seven types of international straits found around the globe,⁶ namely:

1. Geographic straits, characterized by a width wider than 24 nautical miles (nm), such as the Taiwan Strait.
2. Straits governed by longstanding international conventions, such as the Turkish Straits, which are governed by the 1936 Montreux Convention.
3. Straits formed between a State and its islands, such as the Strait of Messina in Italy.
4. Dead-end straits, known to connect one end of the high seas or EEZ to the territorial sea of one or more State, such as the Strait of Tiran between the Sinai Peninsula and Arabian Peninsula.

5. Straits that contain routes of similar convenience, that is, a route through the high seas or an EEZ of similar navigational and hydrographic characteristics as the strait, such as the four straits of Japan.
6. Straits used for international navigation that connect one end of the high seas or Exclusive Economic Zone (EEZ) to the other and may contain overlapping territorial seas of bordering States, such as the Straits of Malacca and Singapore.
7. Straits found within the waters of an archipelagic State, such as those of Indonesia.

Since it is impractical, given the constrained length of this article, to address each of the abovementioned straits in detail, primary focus is retained upon the two types of straits most commonly encountered in the IOR, namely, straits used for international navigation, and straits found in archipelagic waters.

Legal Regime Applicable to Straits Used for International Navigation

The legal regime of international straits *per se* is driven by navigational considerations. This is owed, in large part, to the deliberations undertaken during the third United Nations Conference on the Law of the Sea (UNCLOS III) held between 1973 and 1982, wherein two critical arguments surfaced and were subsequently included in the 1982 UN Convention on the Law of the Sea (UNCLOS).⁷ (It is important to remember that UNCLOS III [the Conference] has the same basic acronym as UNCLOS [the Convention]). The first was the expansion of the territorial sea from 3 nm to 12 nm, and the second was the compromise reached between naval powers and bordering States vis-à-vis the navigation of international straits with the introduction of ‘Transit Passage’.⁸ The latter is a passage regime applicable particularly to straits used for international navigation and is governed by Part III of the UNCLOS, titled “Straits Used for International Navigation”.

India signed the UNCLOS during its adoption in 1982 and ratified it thirteen years later in 1995. However, any discourse into the applicability of international

treaty law in India is premised on the position that India has a dualist legal system, which requires the Parliament to enact legislations giving effect to the particular international treaty in the domestic sphere.⁹ Thus, even a ratified treaty will become the ‘law of the land’ only when a law is passed to that effect.¹⁰ Interestingly, the statute giving effect to many UNCLOS provisions was adopted by India during UNCLOS III (and well before adoption of the Convention itself) by way of the “Territorial Waters, Continental Shelf, Exclusive Economic Zone And Other Maritime Zones Act, 1976”. Perhaps due to the absence of international straits within the Maritime Zones of India (MZI), this piece of legislation does not elaborate upon passage through international straits. Hence, to understand the nuances of the regimes applicable to the various types of international straits, one must return to UNCLOS.

Codified in Part III of UNCLOS, international straits are afforded an independent regime which is further subdivided into that of ‘transit passage’ (Section 2) and ‘innocent passage’ (Section 3). Where ‘transit passage’ is concerned:

“The regime of ‘transit passage’ falls squarely between the ‘right of freedom of navigation’ and ‘innocent passage’ wherein, amongst other things, vessels and aircrafts of user-States may navigate an international strait in a continuous, expeditious, and unimpeded fashion in their normal mode of operation.¹¹ Although there remains a grey area with regards the precise definition of the term ‘normal mode’,¹² it is widely believed that it includes submerged passage rights for submarines by virtue of usage of the phrase ‘freedom of navigation’ in Article 38.¹³ This sets ‘transit passage’ apart from ‘innocent passage’, since submerged passage of underwater vehicles is expressly prohibited in the latter.¹⁴ Further, vessels undertaking ‘transit passage’ must do so in compliance with established safety and environmental protection regulations as codified in the 1974 Safety of Life at Sea (SOLAS) Convention and the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL), as well as regulations set by States bordering straits, formed in compliance with international standards.”¹⁵

The regime of ‘innocent passage’ is applicable to international straits of two kinds: the first comprises those straits that lie between the high seas (or exclusive economic zone [EEZ]) and the territory of a bordering-State, and the second as formed between the mainland and islands of the bordering-State.¹⁶ In both cases, the right of innocent passage remains in compliance with UNCLOS Part II Section 3 on innocent passage in the territorial sea. In innocent passage, coastal States have wide regulatory powers that extend to temporary and conditional suspension of passage rights.¹⁷ All such regulatory powers, with the exception of the power to suspend

innocent passage, applies to this category of straits, justifying the appellation, “*non-suspendable innocent passage*”.

A notable distinction between the two regimes is also with regard to the status of warships. While warships are immune to the jurisdiction of coastal States during ‘innocent passage’, they may be required to leave the territorial sea if found to be in violation of the coastal State’s rules and regulations concerning ‘passage’.¹⁸ However, no such power can be exercised by bordering-States where transit passage is applicable.

In addition to the above-mentioned passage-regimes, there exists a separate regime that applies to archipelagic waters: the Archipelagic Sea Lanes Passage (ASLP), which will be elaborated upon in the succeeding paragraphs, using Indonesia as an example.

Rights and Duties of User-States and Bordering-States

With regard to transit passage, Article 39 lists the circumstances under which vessels and aircraft may undertake passage in international straits wherein, *ipso facto*, vessels and aircrafts must proceed without delay and avoid the threat or use of force against the bordering-State. The rights and obligations of bordering-States are listed in Articles 41 and 42 wherein bordering- States may, *ipso facto*, designate sea-lanes and traffic-separation schemes (TSS) as well as adopt legislation on transit passage so long as the legislation is, in compliance with international standards and does not hamper the regime of passage applicable to the strait. Such legislations could include pollution control, navigational safety, maritime traffic, etc.¹⁹

International Straits of Relevance to India

Maritime transport accounts for 95% of India’s international trade by volume and 65% by value,²⁰ much of which passes through the international straits located within the Indian Ocean. Historically, a number of ports of India have enjoyed great positional significance vis-à-vis maritime trading routes. They continue to do so

even in contemporary times. Even today, the bulk of India's export and import of merchandise goods — most significantly the millions of barrels of oil and liquified natural gas — flows through one or another of the international straits of the Indian Ocean. To the west of India, these straits include the Strait of Hormuz, the Strait of Bab-el-Mandeb, and the Mozambique Channel. It is, therefore, hardly surprising that a rise in geopolitical tensions within the Persian Gulf (such as the recent faceoff between Iran and USA in 2019), or within the Gulf of Aden (such as the ongoing conflict in Yemen), has an immediate and profound impact upon India. A constant endeavour to assure the security and safety of India's merchandise trade is also the major reason for India's careful attention to the geopolitical moves in and around international straits of regional and extra-regional State- and multi-national entities. In this context, warship activity such as that relating to Operation AGENOR within the European-led Maritime Awareness in the Strait of Hormuz (EMASOH) initiative,²¹ is as carefully monitored by India as are the gameplays of the USA or China. The same is the case with the Gulf of Aden (at whose western extremity lies the Strait of Bab-el-Mandeb) where even *"after 7 years of war, Yemen remains one of the world's worst humanitarian crises. The violence has increased since the second half of 2021, with a marked escalation in the first quarter of 2022."*²²

Insofar as the relevance of public international maritime law is concerned, it should be noted that at its narrowest point, the Strait of Hormuz is only about 18 nautical miles wide. Thus, one passes through the territorial sea of either Iran or Oman while transiting, making the two countries' approach-to and acceptability-of UNCLOS crucial. Oman has ratified the UNCLOS, whereas UAE and Iran are signatories but have not ratified the Convention. While the status of a signatory is distinguished from a ratifying party on the basis of the legally binding nature of ratification, it is nevertheless true that the act of signing reflects a willing recognition to uphold the principles of the Convention. Another significant legal nuance is that even at the time of signing UNCLOS, Iran had made an interpretative declaration with respect to its understanding of certain provisions in the Convention. The declaration clarified Iran's application of customary international law and elaborated upon the right of coastal States to take measures to protect their security interests, reserving the power to adopt laws and regulations regarding the prior authorisation for warships that were willing to exercise the right of 'innocent passage' through the

country's territorial sea.²³ In a similar fashion, Oman too subjects the passage of warships and submarines through its territorial waters to prior permission through a declaration made upon ratification.²⁴ Iran's declaration further makes it clear that it adheres to the 12 nautical mile limit that has been set for the extension of territorial waters, and it applies the principles derived from customary international law and the 1958 Convention on the Territorial Sea and the Contiguous Zone,²⁵ in its territorial waters.²⁶ However, as far as passage through international straits is concerned, Article 16 (4) of the 1958 Convention provides for 'non-suspendable innocent passage' similar to the 1982 UNCLOS. Moreover, a declaration made by a State does not in and of itself constitute any variation-to or deviation-of the law (in this case, UNCLOS). That said, it is easy to see the room for legal debate or lawfare. This could well impact India and hence, the need to have a legal strategy, a policy-approach, and an advocacy-plan, all in place well before any incident involving Indian entities occurs, is a pressing one.

With regard to the Strait of Bab-el-Mandeb, while the bordering-States here are Djibouti and Yemen, a general overview would reveal that this strait connects the Exclusive Economic Zones (EEZs) of a far larger number of States, which includes Sudan, Saudi Arabia, Somalia, Eritrea and Egypt in addition to Djibouti and Yemen. The adverse impact of the ongoing conflict in Yemen has already been touched upon, and control of the strait by any of the parties to the conflict, State or non-State, would not bode well for the region in terms of both security as well as movement of international trade therein.²⁷ Insofar as international navigation and the legal regime laid down by the UNCLOS goes, all concerned States, apart from Eritrea, have ratified the 1982 UNCLOS.²⁸ While the applicability of the passage-regime in the Strait of Bab- el-Mandeb would appear rather straightforward — given that the strait is one used for international navigation — the same has in fact come under impending threat from the spill-over effect of the ongoing conflict in Yemen. The strait is, in and of itself, a crucial chokepoint whose significance has been enhanced ever since the opening of the Suez Canal in 1869 and its periodic widening — including the latest (2021) project to expand parts of the Suez Canal consequent upon the grounding of the container ship, the *Ever Given*, which blocked the waterway for six days in March of 2021. This project, according to the Suez Canal Authority (SCA) will be completed in July 2023.²⁹

On the eastern flank of the Indian Ocean, the Indonesian choke points are of very considerable strategic significance for India. Some 190 billion US dollar worth of India's merchandise trade pass through the narrow (2.7 kilometres at its narrowest),³⁰ and relatively- shallow Straits of Malacca and Singapore, and the neighbouring straits of Sunda (situated between the islands of Sumatra and Java) and Lombok (between the islands of Bali and Lombok). The Andaman and Nicobar island-chain provides India with geographical proximity to these international straits and enable it to monitor traffic in the region, thereby providing New Delhi with considerable political leverage.³¹ The Strait of Ombai-Wetar is another international strait that is of great military (naval) significance to India, as also to all countries that operate nuclear-powered (SSNs) in the Indo-Pacific, since it is the only strait whose hydrography permits safe underwater transit-passage to be undertaken by such submarines.³² Once again, as in was the case with the international straits of western Indian Ocean, a comprehensive understanding of these straits needs to factor the legal regimes applicable therein, especially as Indonesia is an archipelagic State. It is, in fact, the largest archipelagic State — going by definition found in Article 46 of UNCLOS — in the world. Indonesia ratified UNCLOS in 1986 and was one of the first States to claim archipelagic status after its Independence in 1953. However, it was only after nine years of deliberation between the predominant maritime powers of that time and the bordering-States, on the status of passage applicable to archipelagic waters that had thus far been used for unfettered international navigation, that the concept of an archipelagic State and the corresponding regime was incorporated into UNCLOS 1982.³³ These deliberations gave rise to the promulgation of “archipelagic sea lanes” and the consequent right of Archipelagic Sea Lane Passage (ASLP) found in Article 53 of UNCLOS. This article, *inter alia*, stipulates that “*Archipelagic Sea lanes passage means the exercise in accordance with this Convention of the rights of navigation and overflight in the normal mode solely for the purpose of continuous, expeditious and unobstructed transit between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone*”.³⁴

The procedure for promulgation of ASLs begins with the submission of a proposal by the archipelagic state to the IMO — considered to be the “*competent international organisation*” stated in Article 53 (9) of UNCLOS — following which

the IMO assess the conformity of the proposed ASLs with the relevant provisions of UNCLOS. The IMO may only adopt such ASLs as proposed and jointly agreed by the bordering-State. Any objection to the proposed ASLs, or the archipelagic State's failure to designate ASLs would render such sea lanes as non-existent, allowing vessels and aircrafts to traverse through routes designated as those "*normally used for international navigation*".³⁵

Thus, as a recognised archipelagic State, Indonesia is empowered to designate archipelagic sea lanes (ASL), albeit with due notification to the IMO.³⁶ In this regard, through the Maritime Safety Resolution 72(69) and subsequently Government Decree No. 37/2002, also referred to as *Alur Laut Kepulauan Indonesia*, Indonesia has promulgated the north/south passages of Sunda-Bangka, Lombok-Makassar, and Ombai-Wetar, as archipelagic sea lanes while the Strait of Malacca and Singapore remains an international strait and not an ASL.³⁷ However, the three north/south ASLs are considered by the IMO to be only partially designated, since Indonesia's proposal did not make mention of the required normal passage routes nor did it designate ASLs along the east/west axis through the Java Sea.³⁸ Indonesia has been apprehensive about promulgating east/west ASLs for a number of reasons:

*"First, Indonesia did not see a unified proposal from other countries of what the east west ASL should ideally look like. Instead, it received different ASL proposals from the United States, Great Britain, Japan, and Australia, among others. Second, Indonesia is concerned about the potential security implications of east west ASLs since they must pass through the Java Sea and would thus expose the heavily populated and economically vital cities on Java's north to the risks of foreign maritime traffic. For example, a tanker oil spill in the Java Sea could be economically disastrous since the Java Sea provides a significant source of fish and a major location of offshore oil and gas platforms. Finally, the Indonesian government, especially the navy, saw no harm inflicted in the absence of the east west ASL. Even without the east west ASL, foreign shipping could still make transits under 'innocent passage through the archipelagic waters'."*³⁹

As India develops her maritime capacities and capabilities and assumes greater regional responsibilities within the Indo-Pacific, the importance of understanding, advocating, and executing legally sustainable passage-regimes through archipelagic

States such as Indonesia (and Philippines) cannot be overstated. In doing so, India and its seagoing agencies (the Indian Navy and the Indian Coast Guard in particular) will need to be respectful of Indonesian (and Filipino) sensitivities.

Conclusion

The foregoing baseline information in respect of international straits contained within the IOR would make it evident that such straits entail two predominant features: geographical position and usage. Taken together, these would enable India to better extend the requisite degree of stabilising-influence across the region.

Even as New Delhi broadens, deepens, and strengthens its maritime engagement with its partners in the Quad, as also with the several nations with which it has concluded strategic partnerships of one or another hierarchical level, it must not allow itself to be perceived as having acquiesced in the approaches adopted by maritime-powers of the colonial period or, for that matter, those of the WW-II or the Cold War periods. The perception that India needs to generate and sustain is that of a responsible, mature and reliable partner whose own adherence to the provisions of public international maritime is unequivocal, equitable, and mindful of the imperatives of comity. This will require the Indian merchant marine, the Coast Guard, and the Indian Navy, as also officials and bureaucrats across a wide swath of governmental ministries, departments and agencies, to comprehend and internalise the legal regimes applicable to international straits, especially those within the Indian Ocean segment of the Indo-Pacific.

20 March 2022

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Undersea Communication Cables: Vulnerabilities and Protective Measures Relevant to India

Soham Agarwal and Vice Admiral Pradeep Chauhan

This article aims to provide Indian policy-makers and lay readers alike with an overview of submarine communications cable systems in India, highlighting their criticality, their vulnerabilities, and the inadequate protection they receive under national and international law. The article strongly recommends that submarine communications cables landing in India be included within India's "Critical Information Infrastructure System" (CIIS), and, that India exercise prescriptive jurisdiction over such submarine cables even under the High Seas, under the principle of "protective jurisdiction". This piece speaks directly to authorities within the Indian Navy and the Indian Coast Guard, as well as to other organisational structures concerned with India's national security and the physical and electronic protection of India critical infrastructure. In seeking to mitigate the vulnerabilities attending submarine cables in India, this article will address legal aspects that ought to be of interest (and concern) to the Indian Navy's Judge Advocate General's Branch, the Legal & Treaties Division of the Ministry of External Affairs, the Ministry of Telecommunications, and the Ministry of Law and Justice, as also to legal academic and research institutes in India and the larger Indian Ocean Region.

While rapid technological advancements have transformed the submarine communications cable from a copper-based telegraph cable in 1850 to advanced fibre-optic cables today connecting continents across the globe (see Figure 1),¹ the development of the legal and regulatory mechanism to protect such cables from damage and interception leaves much to be desired.

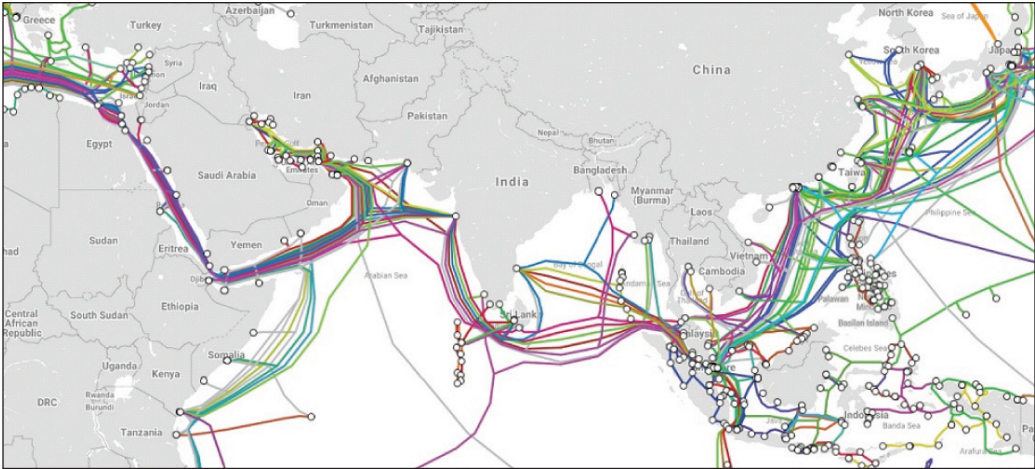


Figure 1: HMN TeleGeography Submarine Cables Map.
 Source: <https://www.submarinecablemap.com/#/submarine-cable>

The term “submarine cable” has been widely used, including in international treaties such as the United Nations Convention on the Laws of the Sea,² but very little attempt appears to have been made to define it or to address the systems and networks associated with the term, at the international level. Even at the domestic level, at least amongst countries of the Indo-Pacific, there appears to be a very worrisome dearth in the degree of legal comprehensiveness with which this subject has been dealt. An exception is Australia, which “...is one of only a few nations with a dedicated regime for the protection of submarine cables”.³ Schedule 3A of Australia’s “Telecommunications Act 1997” (as amended and in force on 2 March 2019) specifies in considerable detail, the legal regime for the protection of international submarine cables landing in Australia.⁴ As such, it offers an excellent example of a “best practice” that India’s own legal and maritime-strategic communities would do exceedingly well to study.

Australia’s domestic “Telecommunications Act” under reference defines a submarine cable as a specific type of “line link”. Within this expression, a ‘line’ itself “is defined as a wire, cable, optical fibre, tube, conduit, waveguide or other physical medium used, or for use, as a continuous artificial guide for or in connection with carrying communications by means of guided electromagnetic energy”.⁵ A “line link”, therefore, links two distinct places. Continuing on, an international submarine cable is defined

(albeit for the purposes of that legislation) as *“that part of a line link that is laid on or beneath the seabed that lies beneath Australian waters or for purposes that include connecting a place in Australia with a place outside Australia (whether or not the cable is laid via another place in Australia) ... and includes any device attached to that part of the line link... used in or in connection with the line link”*.⁶

Indian legislation, on the other hand, does not define a submarine cable. The term ‘international submarine cable’ has been used and defined in the *“International Telecommunication Access to Essential Facilities at Cable Landing Stations Regulations 2007”*,⁷ but has been defined using the term ‘submarine cable’ without elaborating on what it constitutes. Further this term has been used in the context of facilitating access of submarine cables to cable landing stations in India rather than ensuring their protection.

The closest that Indian legislation comes to addressing communication cables is “The Indian Telegraph Act 1885” (1885 Act).⁸ The broad definition of ‘telegraph’ as *“any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means”* (emphasis added), read with the definition of a ‘telegraph line’ as a *“wire or wires used for the purpose of a telegraph”*, does seem to suggest that the 1885 Act may extend its application to the version of the communication cable evolved from the telegraph, the optical fibre cable which uses modified pulses of infrared light (an electro-magnetic emission) to carry data.⁹ This interpretation is supported by the completion of a domestic underwater optical fibre cable system from Chennai to Andaman & Nicobar Islands (Ser 16 in Table 1 below) under the Universal Service Obligation Fund (USOF) project set up under Section 9A-9D [inserted vide Act 8 of 2004 w.e.f. 1.04.2002] of the 1885 Act.¹⁰

However, the 1885 Act does not explicitly identify optical fibre submarine cables. This is hardly surprising, as the 1885 Act was conceptualised at a time long before the development of such a network, and its need within our society. Further there is no clarity whether it also includes ‘international’ submarine cables connecting India to places outside India. There has been an indication that the Department of Telecom’s

optical fibre cable projects connecting India's neighbouring countries would not fall under the USOF project.¹¹ The focus of the USOF project, which uses funds appropriated from the Consolidated Fund of India, is to provide connectivity to the hinterlands and unconnected areas within India.¹² Therefore, the present regime in India is far from being a dedicated regime for the protection of submarine cables connecting India to the rest of the world. The necessity for such a dedicated regime is highlighted below.

Of course, submarine cables are not limited to communications cables alone. The term includes submarine communications cables as well as submarine power cables used to transmit power from one place to another.¹³ This article, however, concentrates upon submarine communication cables, which, taken in aggregate, form part of a network designed to transmit data from one place to another. This is schematically depicted in Figure 2.

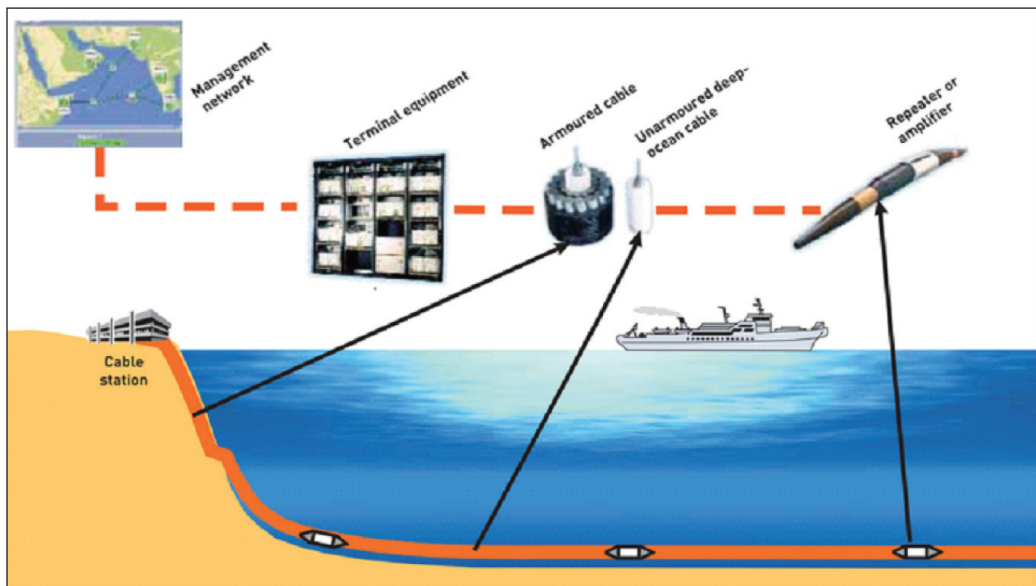


Figure 2: Simplified Schematic of a Submarine Cable System
Source: Submarine Cables and the Oceans — Connecting the World

The cable network begins with an armoured submarine cable connected to a cable station, which contains the servers from/to which data is to be transmitted. Cables that are laid in depths shallower than 1,500 metres (m) are often buried some

60 cm under the seabed in order to prevent them from damage by ships working their anchors, or other activity such as mining and dredging.¹⁴ However, those laid in depths in excess of 1,500 m are not buried but simply laid upon the seabed, because the chance of accidental damage at such depths is unlikely.¹⁵

In India, the opportunity to provide international telecommunication links was made available to the private sector in 2002 and private players could operate in this industry after being issued an appropriate license. These private players are known as International Long Distance (ILD) providers. Cable systems in India are currently owned almost uniformly by private operators, who also undertake operations associated with these systems. While there are currently 16 operational submarine cable systems in India, at least 4 additional cable systems are planned.¹⁶

Two ownership models are prevalent in India, namely, private ownership and consortium-based ownership. A 'private ownership model', as the name suggests, refers to a system wherein the cable is constructed and managed by a single entity who sells the international capacity to other telecom operators.¹⁷ The 'consortium model', on the other hand, is one wherein a group of international operators form a club to fund, build, operate and own the cable system. The members of the consortium build the cable landing stations in their respective countries and lay cables in accordance with the agreement executed between them.¹⁸ The capacity on the cable is then allocated according to the financial contribution and responsibilities of the telecom operator.¹⁹ Table 1 indicates the cable systems existing in India as of 2021, with details of ownership and location:

For example, in the SEA-ME-WE 4 cable system (Ser 6 in Table 1), with Bharti Airtel and TCL as consortium members, TCL owns the landing station at Mumbai and would have laid the cables for that segment of the cable network, while Bharti Airtel owns the landing station in Chennai and probably laid the Chennai segment of the network. However, it is unclear whether the ownership is only of the landing station and the cable segment connecting it, or ownership extends to the entire cable network to the extent of the cable capacity allocated.

Table 1: Cable Systems in India (2021)

	Name of Cable System	Type of Cable System		Cable Landing Station (CLS) Ownership	Location of CLS
		Consortium/ Private (Members)	Protected/ Unprotected		
1	FEA	Private	Unprotected	Global Cloud Xchange (GCX)	Mumbai
2	SEA-ME-WE 3	Consortium (54)	Unprotected	Tata Communications Ltd. (TCL)	Mumbai, Kochi
3	SAFE	Consortium (29)	Protected (Ring Network)	TCL	Kochi
4	I2I	Private	Unprotected	Bharti Airtel	Chennai
5	TIC	Private	Unprotected	TCL	Chennai
6	SEA-ME-WE 4	Consortium (16)	Unprotected	TCL	Mumbai
				Bharti Airtel	Chennai
7	BLCS	Consortium (2)	Unprotected	BSNL	Tuticorin
8	FALCON	Private	Unprotected	GCX	Mumbai Trivandrum
9	WARF	Consortium (3)	Unprotected	GCX	Kochi
10	IMEWE	Consortium (9)	Unprotected	Bharti Airtel	Mumbai (Santacruz)
				TCL	Mumbai (BKC)
11	TGN Indicom + EA/ SEACOM	Private (Co- ownership in certain EA segment)	Unprotected	TCL	Mumbai, Chennai
12	EIG	Consortium (16)	Protected (MESH Restoration Architecture)	Bharti Airtel	Mumbai
13	GBIC/MENA	Private	Partly Protected (Self-Healing Core Ring in the Gulf)	Sify Technologies	Mumbai
14	BBG	Consortium (10)	Unprotected	Vodafone	Mumbai
				Reliance Jio	Chennai
15	AAE-1	Consortium (19)	Unprotected	Reliance Jio	Mumbai
16	CANI-SMC	Private	Unprotected	BSNL	Chennai, Port Blair

Source: Compiled by Authors from: Consultation Paper No 08/12 on “*Access Facilitation Charges and Co-Location Charges at Cable Landing Stations*”, Telecom Regulatory Authority of India 2012 and Suyesh Chattopadhyay, “Questionable State of Submarine Cables that globalises India”, 09 April 2019

Vulnerabilities and Threats

Our interconnected, tech-enabled, globalised world, which allows for a message to be sent from India to the United States in ‘real time’, owes its existence to these physical cables travelling across continents. 97 per cent of global communications are transmitted over 213 independent cable systems traversing 545,018 miles of fibre.²⁰ These submarine communication cables are the backbone of the modern-day Internet and are heavily relied-upon by critical sectors such as financial markets, industries, and military and diplomatic organisations, making them critical to a State’s economic and political functioning. For instance, the Society for Worldwide Interbank Financial Telecommunication (SWIFT) relies primarily upon undersea fibre-optic cables to transmit more than 15 million messages a day valuing \$10 trillion of financial transfers to 208 countries, including India.²¹

This reliance is even more critical for India as there is evidence of the extent of loss to India on the disruption of these communication cables. In 2008, the severance of multiple undersea cables off the coast of Egypt and Dubai caused India to lose more than 80 per cent of its international service.²² India lost 60 million users for over two weeks and India’s business- processing industry (which is one of India’s biggest exports) faced decreased connectivity of upwards of 60 per cent .²³ Such outages have extreme economic consequences for India.

Lack of route-diversity is, in and of itself, a major vulnerability. Three main factors account for this bunching-up of undersea cables. The first is the cost (and ease) of laying the cables, which itself is dependent upon the topography of the seabed. The second is the cost- implications of ensuring the protection of marine environments (or at least the cost of convincing national and local authorities that such protection will be assured). The third is simply the ease with which States — and, in India’s case, the states of the Union — allow and encourage or discourage the building of infrastructure such as landing stations to be built. As a result, a large number of cable routes (and the physical cables themselves) tend to converge a given landing point. An analysis of the undersea cables between India and Europe demonstrates that five interdictions to the cables, would completely isolate India

from Europe.²⁴ Figure 3 depicts the percentage loss of data traffic to/from India with each successive interdiction. It may be noted that 70 per cent of the traffic from/to India is lost with just three simultaneous interdictions.

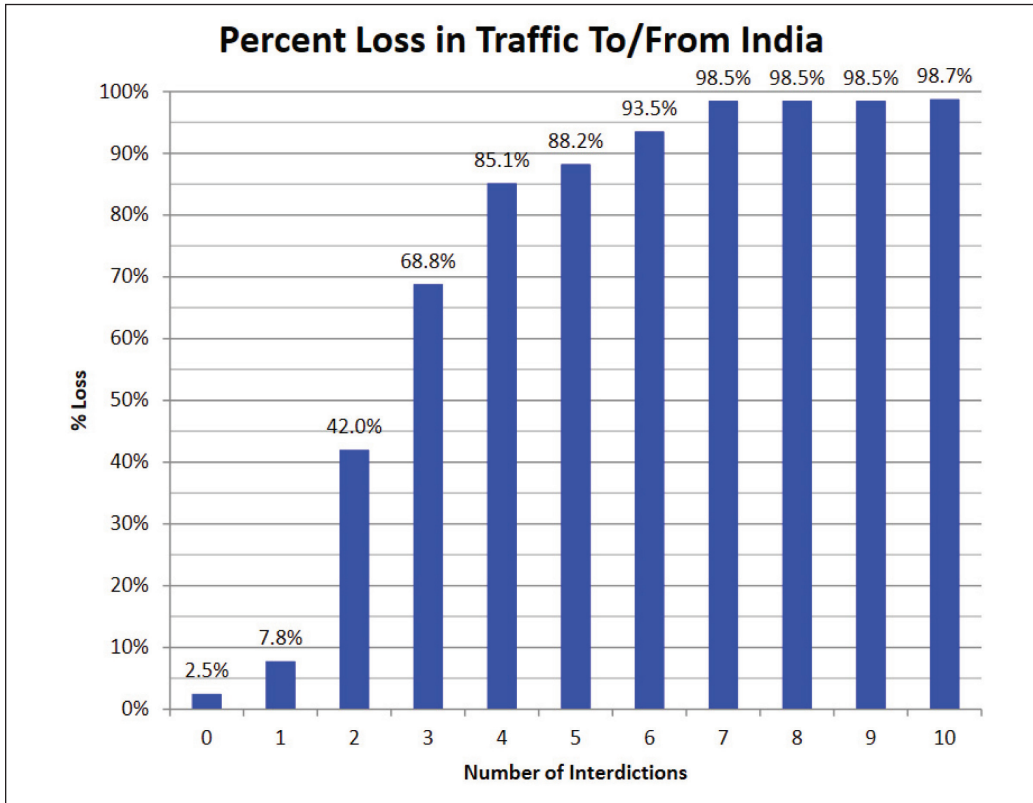


Figure 3: Percent Loss in Traffic To/From India

Source: John K. Crain, “Assessing Resilience in the Global Undersea Cable Infrastructure”, PhD diss., Naval

It has been found that the optimal locations of attack lie between Europe and Africa in the Mediterranean Sea.²⁵ Therefore, India faces substantial loss in its communications traffic to/from Europe and the Middle East, even without a single cable being interdicted in or near Indian territory.²⁶ Even more critical are attacks against the cable landing stations. Just two simultaneous interdictions on cable landing systems (especially in Alexandria, Egypt, through which most of the cables

passing from India to Europe traverse) is enough to isolate India from Europe.²⁷ This accurately represents the nature of the problem. India needs to protect its communications network against disruptions that may take place more than 1,000 miles away.

However, disruptions may be of many types. Damage that affects transmission is known as a “fault”.²⁸ A “fault” may arise from the complete severing of the cable (as when the cable is physically pulled apart). Such severance could include the optical fibres carrying the communications, and/or the copper conductors that provide electricity to the repeaters that boost the signal. Another type of “fault”, called a “shunt fault”, occurs when there is damage to the electrical cable, which cause the repeaters to cease functioning even while the optical fibre remains intact. Such faults are often caused by external human activity, external natural calamities, or component-level failure.²⁹

To mitigate vulnerability, submarine cables are either lightly or heavily armoured, with the breaking strength of these cables varying from a few tonnes to more than 40 tonnes.³⁰ When laid on the seabed beneath relatively shallow waters, relatively heavy armour is preferred and, as stated earlier in this article, the cable is additionally buried to a depth of about 60 centimetres. In deep waters, however, the cables are more fragile in that they are less heavily armoured, largely because heavier cables are far more difficult to handle and deploy at greater depths.

A major cause of cable faults caused by human activity is the result of fishing (especially bottom trawling) and dredging. It is to protect from this kind of damage that cables close to shore, where most bottom-trawling occurs, are not only armoured but also buried in the seabed. However, burying the cable does mitigate the risk from fishing to some extent, but does little to address the risk from dredging activities. Moreover, burying the cable is not always possible, especially where a rocky seabed or one strewn with rocky mounts are concerned. In such cases, the cable segment between two such rocky seamounts might even lie suspended above the seabed and the chances of the cable being snagged by demersal or benthic fishing gear rise exponentially. Moreover, if a vessel that is trying to locate and/or recover lost fishing gear or anchoring gear (such as chain cables or anchor themselves) uses grapnels

or lightweight kedge anchors, there is a significant danger of such gear ‘hooking’ the cable and causing very significant damage.³¹ Demersal fishing is not limited to bottom-trawling alone. In deeper water, static fishing gear, involving lobster-pots that are weighted by heavy, grapnel-shaped multi-fluked anchors are used. If these happen to be laid in the immediate proximity of an underwater cable (which in deep waters is generally very lightly armoured), the chances of a fault ensuing are bright. Likewise, vulnerabilities arise from competing offshore activities such as oil and gas development, the setting-up and maintenance of infrastructure for offshore wind energy and other ocean-mechanical and ocean-thermal renewable-energy resources, exploration and operations related to seabed mining, and so forth. Natural disasters, such as earthquakes, tsunamis, typhoons, and subsea landslides, pose other but equally significant threats to undersea cable networks.

A darker and an increasingly more serious threat that has resulted from the rise of the non-State malevolent actor in general and the State-sponsored non-State malevolent actor in particular. This threat manifests itself in intentional and targeted damage to submarine cables. Some sources believe that Egypt’s internet outage in 2008, in which three cables were cut, was intentional, especially as the Egyptian Coast Guard caught divers trying to cut a fourth cable.³² There have also been incidents of intentional sabotage in Bangladesh in 2007 and in the United States in 2009.³³ There is clearly a pressing need to protect these submarine communications cables as they provide a critical, yet difficult to defend, target in the oceans of the world.

Protection under International Law

Where legal protection to underwater/ submarine communication cables is concerned, the basic issue revolves about the exercise of “jurisdiction”. While surveillance, alerting and warning systems are necessary to prevent human activity from damaging cables in the first place, the existence and robustness of rules and enforcement mechanisms required to ensure deterrence are equally important. However, since much of the damage can occur outside the territory of the concerned State, extending a State’s jurisdiction, especially criminal jurisdiction, is problematic.

Submarine cables (albeit in the form of telegraph cables) have, of course, been around since the 1850s. As early as 1884, the international community understood the need to reach a consensus to protect these cables even in areas outside national jurisdiction. Thus, the “*Convention for the Protection of Submarine Telegraph Cables, 1884*”³⁴ focussed upon interference with telegraph cables. The jury is still out on whether this treaty has a fundamental norm-creating character and whether it has the force of customary international law.³⁵ The non-reliance of many articles in the 1884 Convention by the International Law Commission while developing UNCLOS 1982, as also the small number of signatory State Parties are strong arguments against it.³⁶ The Convention is nevertheless important as it is applicable “*outside territorial waters to all legally established submarine cables landed on the territories... of one or more of the High Contracting Parties*”³⁷ and hence sets a precedent for the exercise of jurisdiction. Article 2 of this Convention made the breaking or injury of a submarine cable, done wilfully or through culpable negligence that results in partial or total interruption in telegraphic communication, a punishable offence. While Article 8 of the Convention adheres to the principle of Flag State jurisdiction by providing competence to take cognizance of the offence, to the Flag State of the vessel aboard which the infraction took place, Article 10 empowers other High Contracting Parties to collect evidence for violations of this Convention and transmit them to the Flag State.

The attribution of jurisdiction was, however, slightly altered with the coming into force of the 1982 UNCLOS, due to the newly created/clarified maritime zones and the rights within these zones, which were afforded to coastal States. The coastal State has sovereignty in its Territorial Sea and is competent to enact rules and regulations to protect submarine cables within its Territorial Sea (Article 21(c) UNCLOS). The jurisdiction of the coastal State in the Exclusive Economic Zone (EEZ), however, is limited to the exercise of ‘sovereign rights’ with respect to the exploration and exploitation of resources. Therefore, the coastal State may restrict only such activities within its EEZ over which it has jurisdiction. This has been used effectively by Australia and New Zealand by creating ‘cable protection zones’ in which certain activities are restricted in an area declared as such with respect to identified submarine cable(s). Schedule 3 of the Telecommunications Act (Australia), *inter alia*, prohibits anchoring and the use of trawls and other fishing gear designed

to work on the seabed, within these ‘cable protection zones’. This has been done to prevent bottom fishing or any such activity in these areas that may cause damage to a submarine cable. Similarly, Section 12 and Section 13 of the “*Submarine Cables and Pipelines Protection Act, 1996*”³⁸ of New Zealand, empower the Governor-General to declare an area — including within the EEZ — a ‘protected area’ within which fishing operations and anchoring of a ship is an offence. In this way, a common cause of damage to submarine communication cables has been sought to be addressed.

However, the issue of intentional human damage does not get addressed by this measure. UNCLOS, 1982, does provide for measures for the protection of submarine cables on the High Seas but affords jurisdiction to the Flag State of the vessel/nationals that effect the protection.

Article 113 of the UNCLOS, in terms similar to those of the 1885 Convention, obligate the Flag State exercising jurisdiction over nationals/vessels to adopt laws and regulations necessary to provide that the breaking or injury of a submarine cable below the high seas, or any conduct calculated or likely to result in such breaking or injury, done wilfully or through culpable negligence, is a punishable offence if it obstructs telegraphic or telephonic communications. Article 58(2) UNCLOS extends this provision and makes it applicable within the EEZ as well.

This notwithstanding, there has been very poor compliance, with this provision, with the majority of States, including the Republic of India, not having enacted any comprehensive domestic legislation to this effect. Even a liberal reading of the 1988 Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA)³⁹ would, at a minimum, require “*Flag State authorisation*” and give preference to “*Flag State jurisdiction*”.⁴⁰ It would appear that submarine cables fall into a legal gap and are left inadequately protected, particularly in the absence of vigorous measures to enact domestic legislation.

It is also not clear whether the State that owns the cables or the nationals of the State(s) which own or have laid the cables, can exercise jurisdiction (criminal or otherwise) over cables laid on the seabed under the high seas. It is quite doubtful, therefore, whether they would be able to enforce their own national laws over an incident damaging ‘their’ submarine cables in Areas Beyond National Jurisdiction (ABNJ).

Alternative Bases of Jurisdiction

Solutions to this problem of the protection of submarine communications cables laid on the seabed under the high seas may, perhaps, be more readily found in alternative bases of attributing jurisdiction. Jurisdiction essentially concerns the extent of each State's right to regulate the conduct or the consequences of events.⁴¹ Currently, under UNCLOS, the right to regulate an incident on the High Seas rests with the Flag State of the perpetrator. However, it is questionable whether this confers exclusive jurisdiction to the Flag State. Is no other State competent to exercise jurisdiction, especially when the Flag State has not exercised their jurisdiction by enacting laws and regulations to that effect? This is a vital question that needs to be squarely and urgently addressed.

The extra-territorial application of the laws of a State was addressed in the *MV Lotus* case,⁴² which made clear the proposition that a State may exercise its jurisdiction only within its territory, i.e., 'enforcement jurisdiction', but there is nothing prohibiting a State from extending the application of its laws and jurisdiction of their courts to persons, property, and acts outside their territory, i.e., exercising its 'prescriptive jurisdiction'.⁴³ Therefore, a State may, if it so wishes, extend its laws to persons and acts outside its territory but may only enforce them within its territory. This principle has been refined to require a 'linking point' or connecting factor between the act to be legislated and the legislating State.⁴⁴ These connecting factors are the recognised 'bases of jurisdiction' in international law.

The recognised bases of jurisdiction of particular interest to this scenario are the "passive personality", the "protective principle", and the "universality principle".

Passive Personality

The principle of "passive personality" draws from the "principle of nationality". It holds that sovereign States have a right to extend their laws over their nationals and have the prerogative to define the scope of 'nationality'. States have, in the past, ascribed nationality to offshore oilrigs on the basis of the State of registry.⁴⁵ Therefore, it is possible that submarine cables too could be brought under the scope of this

principle and ‘nationality’ may also be ascribed on the basis of the nationality of ownership of the cables. Unfortunately, however, the ascertaining of nationality over private and consortium-based ownership is riddled with significant complexities. As explained earlier, it is difficult to ascertain the ownership of cables under consortium ownership. If the SEA-ME-WE 4 (Serial 6 of Table 1 in Part 1 of this article refers) is cut in the Mediterranean Sea, but all that TCL owns is the cable and landing station in Indian territory, a nationality claim would probably not suffice for the exercise of prescriptive jurisdiction. Even though the Government of India has a 26.1% stake in TCL (which it is, in any case, in the process of divesting),⁴⁶ establishing nationality over TCL would not amount to establishing nationality over the Mediterranean Sea portion of the cable. Under the private ownership model, too, the establishment of nationality is at the mercy of complicated corporate ownership structures. For instance, FALCON-1 (see Serial 8 of Table 1 in Part 1 of this article), which lands in Mumbai, is not directly owned by Reliance Communications (an Indian registered entity). Instead, it is owned by Global Cloud Xchange, which is a wholly owned subsidiary of Reliance Globalcom BV (registered in Netherlands), which itself is a wholly owned subsidiary of Reliance Communications.⁴⁷ Therefore, establishing Indian nationality in this case would be a significantly convoluted process that would give rise to multiple competing jurisdictions. Perhaps the promotion of public-private partnerships within the ownership of cable systems may be effective in addressing this issue.⁴⁸

Protective Principle

In some States, but not yet in India, the “Protective Principle” has been recognised as a legitimate exercise of a State’s prescriptive jurisdiction when the vital interests of a State are threatened, even if such a threat is posed by non-nationals outside the territory of the State.⁴⁹ What constitutes ‘vital interests’ is not an exhaustive list, but it does, nevertheless, have some limited scope for expansion.⁵⁰ The United States has utilised this principle to extend jurisdiction to tackle drug trafficking on the High Seas as it considers such trafficking to be an attack on vital American interests. In the US Court of Appeals, 11th Circuit Judgment of *US vs Gonzales*,⁵¹

the arrest of six crew members aboard a Honduran vessel in the High Seas for the possession of a controlled substance under US legislation was not held to be an *ultra vires* exercise of American jurisdiction. However, it may be pertinent to note that a crucial factor was the consent (albeit verbal) taken by the US authorities from the Flag State (Honduras) to board and arrest their nationals. It is clear that here, too, Flag State authorisation does play a role but only to the extent of permitting the boarding of the vessel and the arrest of the crew. This, too, comes within the scope of the enforcement jurisdiction of a State. It has been argued, especially within the USA, that the US was competent to exercise “prescriptive jurisdiction” even without the consent of the Flag State.

Thus, protection to submarine cables too could (and should) be afforded under the protective principle, at least until States build consensus to ascribe “universal jurisdiction”, i.e., one in which all States have jurisdiction (as in the case of piracy) for the protection of submarine cables, due to the sheer value of submarine cables to the international community as a whole. There has been growing regional cooperation to address this issue. An example is that of the Indian Ocean Commission (IOC) working with United Nations Office for Drug Control (UNODC), where the responsibility of UNODC could possibly indicate a push towards ascribing “universal jurisdiction”, in order to draft a Submarine Cables Protection and Resilience Plan to “promote international law and best practices in the region”.⁵²

However, the ‘vital interests’ position needs to be reflected within national law to justify its vital nature, not least due to the restrictive pressure on increasing the scope of the term. This pressure is why the USA has sought to adopt the “effects doctrine” to exert jurisdiction and prosecute economic effects felt in the US for acts committed by non-nationals abroad, rather than opting for the “protective principle”.⁵³

The UN General Assembly Resolution 58/199 on the protection of critical information infrastructure, too, recognises that each country has the right to determine its own critical infrastructure.⁵⁴ Likewise, a recent experts-meeting of the UNODC concludes that designating submarine cables as critical communications infrastructure and supporting national and international legislation to criminalise wilful or grossly negligent damage, are, indeed, the next logical steps.⁵⁵

Regrettably, while India does have a Critical Information Infrastructure (CII) structure, submarine cable systems have not yet been made a part of it.

India's Critical Information Infrastructure (CII)

India's CII derives its status, protection, and authority from the "*Information Technology Act 2000*" (ITA).⁵⁶ Article 70 of the ITA authorises the "*appropriate Government*" to declare by notification, any "*computer resource*" that directly or indirectly affects "*the facility of CII*", a "*protected system*". The 'Explanation' to this Section defines CII as any 'computer resource' the incapacitation of which shall have a debilitating impact on national security, economy, public health or safety.

A "computer resource" under Section 2 (k) of the ITA is defined as a "*computer, computer system, computer network, data, computer database or software*". These terms have been further individually defined.

Section 2 (j) of the ITA [inserted in 2009 via an amendment] defines a 'computer network' as the: "*inter-connection of one or more computers or computer systems or communication device through:*

1. *the use of satellite, microwave, terrestrial line, wire, wireless, or other communications media; and*
2. *terminals or a complex consisting of two or more interconnected computers or communication device"*

Section 2 (l) of the ITA defines a "*computer system*" as a "*device or collection of devices including output and input support devices... which contain computer programs... input data and output data that performs... data storage and retrieval, communication control and other functions*".

It is unclear whether submarine communications cables would fall under the definition of a computer network, and therefore, a 'computer resource' for the purposes of being classified as a CII. While the cable landing stations may well fall under the ambit of a 'computer system', the use of the term 'terrestrial' line would seem to exclude submarine cables. Submarine cables could, on the other hand, albeit

under a very broad interpretation, be included within the term ‘wire’, owing to the physical ‘wires’ in the cables.

The other alternative is to interpret the whole cable system as a terminal or a complex consisting of two or more interconnected communication devices. This, too, would be a matter of interpretation because there is no explicit recognition as such. Further, there is an issue as to whether the status as a CII needs to be notified. Section 70 of the ITA requires a “*protected system*” that “*affects the facility*” of a CII to be notified. It is unclear whether a CII is a distinct category from a protected system, and whether it is only the latter which needs be officially notified.

The National Critical Information Infrastructure Protection Centre (NCIIPC), which is the national nodal agency notified on 16th Jan 2014 by the Central Government under Section 70A of the ITA,⁵⁷ has released guidelines on the identification and protection of CII. However, these guidelines do not even once use the term ‘protected system’ but, instead, use the expression, ‘protected CII’.⁵⁸ Further, the definitions of CII elaborated in the guidelines seem to hinge on the “*impact of any sudden failure or outage on our national wellbeing or national security*”. They also seem to include information infrastructure (defined in guidelines as the totality of inter-connected computers and networks and information flowing through them) that support operations of critical sectors. Five broad ‘critical sectors’ that have been recognised are:⁵⁹

- Power & Energy
- Banking, Financial Institutions & Insurance
- Information and Communication Technology
- Transportation
- E-Governance and Strategic Public Enterprises

Since submarine cables are the lifeline of these sectors, it is intuitively a CII and should be declared as such. However, in somewhat sharp contrast to the Australian domestic legislation alluded to earlier in this article, this has yet to be done in specific terms. The benefits that would accrue from such a designation

is that the protection of these submarine cables would come within the ambit of the NCIIPC, which has a mandate to facilitate protection of CII. There would then be a dedicated agency looking to highlight and advocate for the protection of vulnerabilities of submarine cables. It is pertinent to note that Rule 4(5) of the *“Information Technology (National Critical Information Infrastructure Protection Centre and Manner of Performing Functions and Duties) Rules, 2013”* makes it clear that the basic responsibility of protecting the CII system shall be with the agency running the CII. The role of the NCIIPC is research, policy-guidance and expertise-sharing with the agency responsible for protection. Therefore, it promotes Public- Private synergy in protection of these cable systems.

The *“Information Technology (Information Security Practices and Procedures for Protected System) Rules, 2018”* further prescribes rules and best practices for private agencies running these systems, such as the appointment of an “Information Security Steering Committee” with representatives of the organisation, NCIIPC and experts. Therefore, the State would be invested in the protection of these cables.

Further it would bring submarine cables under Section 66F of the ITA, which prescribes life imprisonment as a penalty for the damage inflicted to a CII, as the infliction of such damage is classified as an act of ‘cyber terrorism’. This would be a substantial development from the present provisions in the Indian Telegraph Act 1885 which in section 25 stipulates meagre penal provisions of imprisonment for three years or fine for wilful or negligent damage to telegraphs. Only the former truly reflects the gravity of the offence.

Recommendations

It is a matter of utmost priority for the NCIIPC to advise the central government to notify the submarine cable system and bring it within the CII system of India, thereby affording it better protection and enabling the possibility of extra-territorial application of Indian law.

The government should also enact specific legislation for the protection of these cables by identifying ‘cable protection zones’ and exercising Flag State jurisdiction

by penalising wilful or culpably negligent acts aboard Indian vessels that damage submarine cables.

It is important for this study to now move to its next stage of examining comparative legislation obtaining in the various States of the Indian Ocean Region, as well as those of the Indo-Pacific, on the subject of underwater communication cables. Such a comparison should be undertaken specifically in order to draw out best practices that can then be contextualised to India, so as to generate a first-draft of an Indian piece of legislation that would address this vital facet of ‘maritime India’.

This is what the NMF would be undertaking, hopefully in conjunction with other leading academic, legal and strategic institutions of the country.

08 April 2021

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*Illegal, Unreported,
and Unregulated Fishing*

The International Day for the Fight Against Illegal, Unreported and Unregulated Fishing

John J Vachaparambil

In December 2017, the United Nations General Assembly in its annual resolution on sustainable fisheries declared 05 June as the ‘International Day for the Fight against Illegal, Unreported and Unregulated (IUU) Fishing’. The UN also declared 2022 as the ‘International Year of Artisanal Fisheries and Aquaculture’ (IYAFA) (Figure 1).¹ With disruptive, illegal, unreported and unregulated fishing practices affecting the livelihood of an estimated 20 million people who rely on the seas for their sustenance,² it is important to raise awareness about the ‘International Day’ so that India being a coastal State can fight against IUU fishing, and this short piece seeks to be a small step in this direction.



Figure 1: International Year of Artisanal Fisheries and Aquaculture
Source: Food and Agriculture Organisation of the United Nations

The proceedings that led to the official declaration of the ‘International Day’ initially began in 2015 when the General Fisheries Commission for the Mediterranean (GFCM) proposed an initiative be launched to declare an ‘International Day for the

Fight against IUU fishing’ during the thirty-ninth session of the FAO Conference.³ Subsequently, the GFCM submitted a proposal during the thirty-second session of the FAO Committee of Fisheries (COFI) held in Rome from 11-15 July 2016.⁴ In its proposal, the GFCM requested that 05 June be declared as the ‘International Day for the Fight against IUU Fishing’ and the same was endorsed by COFI in its April 2016 Report.⁵ In the fortieth session Report of the FAO Conference released in 2017, two resolutions were passed, the first for declaring 2022 as the ‘International Year of Artisanal Fisheries and Aquaculture’ and the latter for declaring 05 June as the ‘International Day for the Fight against IUU Fishing’, both addressed to the UN Secretary General.⁶

05 June is of importance as it was on this date, after a gap of seven years, the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSM Agreement) came into force. The PSM Agreement is the first international legally binding agreement devoted specifically to the fight against IUU fishing. The Agreement stipulates port state measures to prevent, deter and eliminate IUU fishing by preventing vessels engaged in such fishing activities from using ports and landing their catches. This helps in reducing the incentives provided to such vessels that would then prevent them from operating and thus reducing such fish products from reaching both national and international markets. The provisions of the PSM agreement applies to fishing vessels seeking entry into a designated port of a State that is different from their flag State.⁷

The ‘International Day’ was for the first time observed on 05 June 2018.⁸ The United Nations mention that ‘International Days’ are occasions to educate the general public on issues of concern, to mobilise political will and resources to address global problems, and to celebrate and reinforce achievements of humanity.⁹ In this regard, the purpose of observing the ‘International Day for the Fight against IUU fishing’ is (a) to promote awareness about the threats posed by IUU fishing and its impact on sustainable fisheries and (b) to urge the international community to effectively regulate harvesting and end IUU fishing activities.¹⁰ Considering the impact of IUU fishing on the marine environment and marine biodiversity, it is befitting that the United Nations have asked the nations to commemorate the ‘World Environment Day’ on 05 June every year,¹¹ and theme for 2022 is ‘Only One Earth’, focusing on living sustainably in harmony with nature.¹²

The gravity of IUU fishing, also referred to as ‘pirate fishing’,¹³ as a global threat was initially highlighted by the COFI.¹⁴ According to the FAO, ‘IUU fishing’ is a very broad term that captures a wide variety of fishing activities, in all types and dimensions of fisheries, occurring both on the high seas and in areas within national jurisdiction. The FAO also opined that IUU fishing also covers all aspects and stages of the capture and utilisation of fish, and it may sometimes be associated with organised crime (including drug trafficking, contraband trafficking, human trafficking, etc).¹⁵ The FAO further mention that IUU fishing activities not just violate both international and national regulations but also impact national and regional efforts for conservation and management of fish stocks and as result reduce the scope of achieving sustainability long-term.¹⁶ Available data on IUU fishing shows that such fishing activities are responsible for the loss of 11-26 tons of fish each year, corresponding to an economic value of US\$10-23 billion.¹⁷

Being a coastal State India has about 8118 km of coastline, nearly 2 million sq.km of exclusive economic zone (EEZ) and half a million sq.km of continental shelf, bringing the estimated fisheries potential from these areas to around 4.41 million tons. Total combined potential derived from 3.15 million hectares of reservoirs, 2.5 million hectares of ponds and tanks, 1.25 million hectares of brackish water area, cold water resources of hilly states and all other inland fishery resources, is 15 million tons.¹⁸

The nation also have 131 Marine Protected Areas (MPAs) covering a total area of sq.km and these include sanctuaries, national parks, and community reserves.¹⁹ Even with such diverse environments, as per the IUCN Red List most species of fish in India are categorised as either vulnerable, endangered or critically endangered.²⁰ This could also be the reason for the fall in the production of fish from inland sectors which stood at a mere 7.77 million tons during 2016-17.²¹ Also there is a stark contrast between the definition of the term ‘fish’ as per the provisions of the Maritime Zones of India Act 1981 and the Indian Marine Fisheries Bill 2021. While the term ‘fish’ as per the MZI Act 1981 means ‘any aquatic animal, whether piscine or not, and includes shellfish crustaceans, molluscs, turtle (*chelonina*), aquatic mammal (the young, fry, eggs, and spawn thereof), *holothurians*, coelenterates, seaweed, coral (*porifera*), and any other aquatic life,²² the definition of the term ‘fish’ under the 2021 Bill excludes marine mammals, reptiles and sea birds.²³ Another issue of concern

is that even though India became a member of the FAO on 16 October 1945,²⁴ the nation till date, have not ratified the PSM Agreement.²⁵ Most of the Indian laws, regulations, policies and plans to curb IUU fishing are based on the FAO non-binding soft law instruments which include:

1. 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU).²⁶
2. 2007 Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing.²⁷
3. 2014 Voluntary Guidelines for Flag State Performance.²⁸
4. 2014 Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the context of Food Security and Poverty Eradication (SSF Guidelines).²⁹
5. 2014 Global Record of Fishing Vessels, Refrigerated Transport and Supply Vessels.³⁰
6. 2017 Voluntary Guidelines on Catch Documentation Schemes.³¹
7. 2018 Voluntary Guidelines on Marking of Fishing Gear.³²

Also, based on the data retrieved from the IUCN Red List, especially on selected crustaceans, sharks and rays, there is an urgent need to protect marine biodiversity and end IUU fishing activities globally (Figure 2).³³

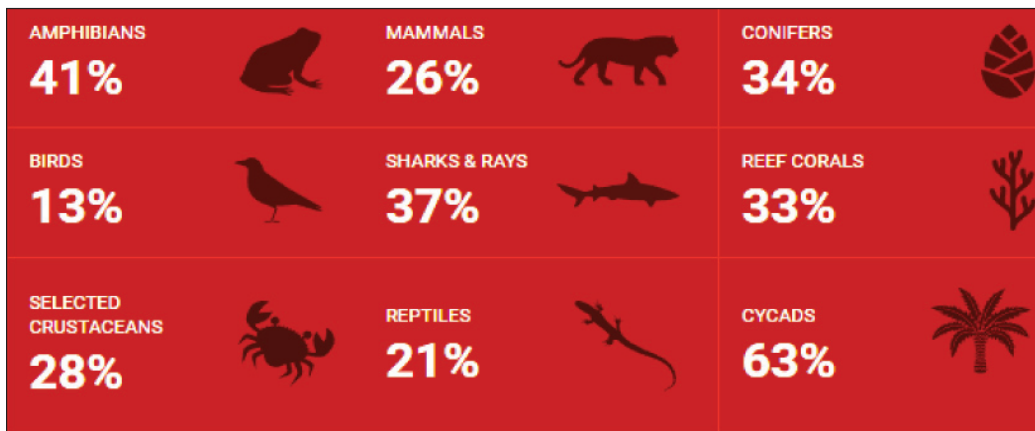


Figure 2: IUCN Red List of Threatened Species

Source: IUCN Website

As India is trying its best to achieve SDG 14 by 2030 with the aim of (a) increasing the benefits to small island developing states and to the least developed countries from sustainable use of marine resources, including, through sustainable management of fisheries, aquaculture and tourism, and (b) enhancing the conservation and sustainable use of the oceans and their resources by implementing international law as reflected in the 1982 UNCLOS, which provides the legal framework for the conservation and sustainable use of the oceans and their resources,³⁴ the National Maritime Foundation (NMF) being India's first and only think-tank that conduct independent and policy-relevant research on all 'matters-maritime' should play a vital role in not only helping the nation achieve SDG 14 but also in creating awareness about the threat of IUU fishing on the 'International Day' via scholarly research, collaborations, discussions and dialogues with relevant stake holders (national and international), which could also include the IFC-IOR (Information Fusion Centre- Indian Ocean Region), the BOBP-IGO (Bay of Bengal Programme Inter-Governmental Organisation), among others.

05 June 2022

ENDNOTES

1. United Nations General Assembly, "Resolution adopted by the General Assembly on 05 December 2017 – A/RES/72/72", 19 January 2018.

Artisanal Fisheries are traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, mainly for local consumption. They are sometimes referred to as small-scale fisheries.

Aquaculture is the breeding, rearing and harvesting of fish, shellfish, algae, and other organisms in all types of water environments.

2. UNDP India, "People and Seas – Coastal and Marine Biodiversity in Sindhudurg", 22 May 2014.
3. Food and Agriculture Organisation of the United Nations, "Declaring an International Day for the Fight against Illegal, Unreported and Unregulated fishing", General Fisheries Commission for the Mediterranean.

The Food and Agriculture Organisation (FAO) is a specialised agency of the UN that leads international efforts to defeat hunger, with a goal, i.e., to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active and healthy lives.

The General Fisheries Commission for the Mediterranean (GFCM) was established under Article XIV of the FAO Constitution as a regional fisheries management organisation (RFMO) having a critical role in fisheries governance and the authority to make binding recommendations for fisheries conservation and management and for aquaculture development.

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Appendix G – Resolution 6/2017 – 2022 International Year for Artisanal Fisheries and Aquaculture.

Appendix J – Resolution 9/2017 – 05 June as International Day for the Fight against IUU Fishing.

7. Food and Agriculture Organisation of the United Nations, “Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing”, <https://www.fao.org/3/i5469t/I5469T.pdf>.

Flag State is a country where a company registers its commercial and merchant ships.

8. CareOurEarth, “International Day against Illegal Fishing 2022”, 24 April 2022, <https://www.careourearth.com/international-day-against-illegal-fishing/>.
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11. Chime Youdon, “World Environment Day”, 05 June 2020. <https://maritimeindia.org/world-environment-day/>.
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13. Vijay Sakhuja, “Six steps to combating IUU fishing”, 29 February 2016, <https://maritimeindia.org/six-steps-to-combatting-iuu-fishing/>.

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The Committee of Fisheries (COFI) is a subsidiary body of the FAO Council and was established by the FAO Conference in 1963. It is the only inter-governmental global forum where FAO Members meet to review and consider the issues and challenges related to fisheries and aquaculture.

15. Food and Agriculture Organisation of the United Nations, “What is IUU fishing?” <https://www.fao.org/iuu-fishing/background/what-is-iuu-fishing/en/> .
16. Ibid.
17. United Nations, “International Day for the Fight against Illegal, Unreported and Unregulated Fishing”, <https://www.un.org/en/observances/end-illegal-fishing-day>.
18. Department of Fisheries, Government of India, “Marine Fisheries”, <https://dof.gov.in/marine-fisheries>, <https://maritimeindia.org/biodiversity-conservation-in-india-the-security-dimension/>.
19. Captain Himadri Das, “Biodiversity Conservation in India: The Security Dimension”, 07 March 2022, <https://maritimeindia.org/biodiversity-conservation-in-india-the-security-dimension/>.
20. AGK Menon, “Threatened Fishes of India and their conservation”, January 2004, Zoological Survey of India, <http://faunaofindia.nic.in/PDFVolumes/spb/032/index.pdf>.
21. Ibid. 18, Department of Fisheries, “Marine Fisheries”.
22. Section 2(b), The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act, 1981, <https://www.indiacode.nic.in/bitstream/123456789/1817/1/198142.pdf>.

Piscine means of, relating to, or resembling a fish.

Holothurians are marine animals with a leathery skin and an elongated body containing a single, branched gonad (Example: Sea cucumber).

Coelenterates includes invertebrates, having a saclike body with a single opening (mouth), which occurs in polyp and medusa forms (Example: Jellyfish).

23. Section 2(d), The Indian Marine Fisheries Bill, 2021.
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Also see: United Nations in India, “SDG 14: Life Below Water – Targets”.

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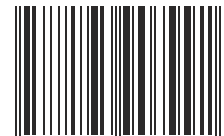
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