National Maritime Foundation

MAKING WAVES

A maritime news brief covering:

- MARITIME SECURITY
- MARITIME FORCES
- SHIPPING, PORTS AND OCEAN ECONOMY
- MARINE ENVIRONMENT
- GEOPOLITICS

EDITED BY:

Capt Sarabjeet S Parmar

execdir.nmf@gmail.com

Dr Oliver N Gonsalves

associatefellow1.nmf@gmail.com

CONTENTS

MARITIME SECURITY

THE 7TH FLEET COMMANDER STATEMENT SHOWS JUST ONE THING—UNITED STATES' STUPIDITY

- Vice Admiral Pradeep Chauhan

The propensity of the US to periodically shoot itself in the foot, completely unexpectedly and completely unnecessarily, is really quite remarkable. Perhaps, at least some of the causes lie in the sheer number of the US interlocutors that are actors on the world stage wherein the law of averages indicates that every now and then, one of them will say or do something exceptionally stupid. The statement of the 7th Fleet commander is the latest manifestation of this. It is not that the USA's Freedom of Navigation programme and the activities undertaken within it are new or novel. They certainly predate the present maritime framework, which has been set out under the provisions of the United Nations Convention on the Law of the Sea or the UNCLOS, 1982. Consequently, the shrillness of the debate about whether or not the US has ratified the UNCLOS certainly makes for great TRPs for the electronic media and boosts the circulation of the print media, but has little real relevance. Amidst all the breast-beating and wailing in the Indian media, generated by the utterly intemperate, unnecessary and downright unintelligent statement of the 7th Fleet that on April 7, 2021, the USS John Paul Jones, an Arleigh Burke Class-guided missile destroyer (DDG) of the US Navy, passed through India's Exclusive Economic Zone, 130 nautical miles west of the Lakshadweep Islands, on a Freedom of Navigation (FoN) patrol, the following points should be borne in mind:

* The USA's Freedom of Navigation Programme involves the US Department of State (the US equivalent of our own MEA) and the US Department of Defence (the US equivalent of our own MoD).

* The US Department of State concentrates on that segment of the FoN Programme that involves diplomatic measures, such as lodging protests and rendering advice.

* The US Department of Defence, using the instruments of the US Navy and the US Coast Guard (the latter unlike the case in India is a full-fledged part of the USA's defence services/armed forces—in fact, it is the oldest of the lot), concentrates on the Freedom of Navigation Operations (FONOPS) and related capability-enhancement activities, such as the provision of legal training in the nuances of public international maritime law, as also operational training such as the conduct of table-top exercises, wargaming and at-sea exercises.

* One of the main reasons why FONOPS are conducted is to prevent "excessive" claims that could place restrictions on the freedoms of navigation and overflight so that they remain unchallenged and acquire the status of customary international law.

* FONOPS have been implemented with regularity at least since 1979, but are generally kept low-key, which is why they have seldom attracted much attention.

* Details of FONOPs undertaken each year are formally presented to the US Congress in an "Annual Freedom of Navigation Report." These are freely and readily available on the internet, from 1981 to-date. A perusal of these reports will show that FONOPS against India (and also, amongst others, against Bangladesh, Maldives, Pakistan, Sri Lanka, Taiwan, etc.) have been a regular feature, right from 1981, without any of the present brouhaha. Clearly, several of these countries are acknowledged partners.

Therefore, any emotive conclusion that India has been cast among countries inimical to the US interests may require to be jettisoned.

For the most part, these FONOPS have challenged the following aspects of what the US considers to be "excessive" claims:

Prior consent required for military exercises or manoeuvres within the EEZ, in particular those involving the use of weapons or explosives (this is a formal legally well-founded declaration made by India upon ratification of the 1982 UNCLOS, on June 29, 1995).

India's requirement for prior notification for foreign warships to enter its territorial sea, including while exercising the right of innocent passage.

FONOPS are not primarily meant to demonstrate USA's 'deterrent-capability' or 'resolve', nor are they designed to reassure allies of the US support.

The 1982 UNCLOS has several residual ambiguities. For instance, the 'High Seas' are defined as waters lying seawards of the outer limit of the Exclusive Economic Zone (EEZ). However, 'high-seas freedoms'—of navigation and overflight, the laying of submarine cables & pipelines, the construction of artificial islands and other permissible installations, the conduct of scientific research, etc.—exist in waters seaward of the 'Territorial Sea'. That brings us to the question of what exactly is the EEZ? Is it a unique body of water distinct from the high seas, or, is it simply a body of water within the high seas to which some special regulations apply? What limitations exist in respect of 'scientific research' and by which agencies? How is the 'high seas freedom' of research to be reconciled with the 'consent of the coastal state'? These questions have far from straightforward answers and are, in fact, among the most vexed segments of the legacy of the 1982 UNCLOS.

The commonest way of defining the various maritime zones (including the EEZ) created by the 1982 UNCLOS is to proceed outwards from the land. However, if one were to proceed landwards from the high seas, as the following sequential diagrams indicate, perhaps one could arrive at a clearer understanding:

Even after all this, we find ourselves circling back to the question recently posed by a hugely respected former Chief of Navy Staff, Admiral Arun Prakash—"what is the signal the US is sending?"—and his recommendation that the US Navy needs to switch

its IFF (Identification 'Friend' or 'Foe') on. The former is probably addressed by the retort that "there is no cure for stupid". Stupid is just that. Stupid. The second is entirely agreed with. Perhaps, as a colleague of mine has presciently stated, India, too, needs to keep its IFF on.

Source: news18.com; 10 April 2021

MOZAMBIQUE'S GROWING INSURGENCY MAY POSE THREAT TO SHIPPING

- Brian Gicheru Kinyua

The insurgency in Northern Mozambique is steadily morphing into a serious maritime security threat in the Western Indian Ocean. On March 24, militants linked to the Islamic State (IS) group conducted a bloody ambush in Palma - a coastal town near Total's Mozambique LNG offshore gas project - leaving tens of people dead and others injured. This attack lends credence to speculation that the jihadist militants are growing in sophistication and capability. No sooner had Total resumed operations on its gas project after a two-month security hiatus than the insurgents descended on Palma. This suggests that the planning of the attack was informed by intelligence reports on when Total would resume the project. Some contractors and delivery company workers - most of them expatriates - who got caught in the ambush are still unaccounted for, and it appears to be another direct attack targeted at Total's operations in the area.

Since their first attack in 2017, the insurgents in Cabo Delgado province have shown increasing capability in conducting amphibious attacks. In one deadly strike last year, they managed to seize (and briefly hold) the key seaport of Mocimboa da Praia. In addition, maritime trafficking of Afghan heroin is believed to be a source of funding for the militants, although this is unconfirmed. With this adeptness in maritime activities, it may not take long for the insurgents to make a foray into piracy. This would be a new risk for the Southern African region and the Mozambique Channel, where 30 percent of the world's tanker traffic transits. In terms of its response to this rising insurgency, Mozambique's government seems hamstrung to maintain stability in Cabo Delgado. Its debt-ridden economy is reflected in a military funding deficit, which may have contributed to a delay in response to the most recent attack. A humanitarian crisis is already unfolding in the province, as approximately 600,000 people have been internally displaced by the chaos.

ISS Africa (Institute for Security Studies) once described Mozambique's government as adopting the African playbook in its response to terrorism and violent extremism. It is a similar strategy to Nigeria's initial approach to tackling Boko Haram - first, deny that the insurgency exists, but when overwhelmed, rush to the African Union to seek for help. Efforts to overwhelm the militants with military force have remained unsuccessful and foreign assistance from mercenaries appears uncoordinated. Although the insurgency is mainly a Mozambican national security concern at the

moment, it will be a matter of time before it spills over the borders and takes a transnational nature.

There is a proliferation of external military assistance from western nations - among them France, Portugal and the U.S. - but for purposes of a long term solution, the SADC (Southern African Development Community) and African Union (AU) should take the leading role. These are the institutions that are best placed to handle the local jihadist movement in Northern Mozambique, along with the local grievances that the militants leverage to radicalize young people. However, the priority right now is to regain control of the security situation. This is where the AU's Peace and Security Council (PSC) through SADC can render itself useful. As of now, these two institutions have not made any significant move to quell the Mozambique situation or to provide humanitarian aid to the displaced persons. A joint military exercise under the jurisdiction of SADC can greatly supplement the Mozambique Army with a central command center. SADC already boasts 16 member countries - including South Africa - which can be mobilized to offer ground, air and naval surveillance. Great economic damage has already been incurred, with the development of billions of dollars' worth offshore gas deposits stuck in limbo. There is a possibility that Total might decide to operate from the French island of Mayotte in the Mozambique Channel, costing employment opportunities on the mainland. Maritime security in the East and Southern African region is also at stake if Al-Sunnah's growth continues unabated.

Source: maritime-executive.com; 05 April 2021

MALAYSIA, VIETNAM EXPECTED TO INK MOU ON MARITIME SECURITY THIS YEAR, SAYS MMEA D-G

KUALA TERENGGANU, April 5 — Malaysia is expected to sign a Memorandum of Understanding (MoU) with Vietnam this year to strengthen cooperation in maritime security, including addressing the encroachment issue involving Vietnamese fishermen especially in the east coast waters. The Malaysian Maritime Enforcement Agency (MMEA) director-general Datuk Mohd Zubil Mat Som said the draft of the MoU was currently at the final stage and would be submitted to the Attorney General's Chambers to be reviewed. "Both parties, namely the MMEA and Vietnam Coast Guard have agreed to sign the MoU which involves cooperation in various fields including enforcement and search and rescue operations.

"With this cooperation, I'm confident that we can address the encroachment issue by Vietnamese fishermen, especially in the east coast waters through information sharing such as using the Automatic Identification System (AIS)." He said this to reporters after conducting a working visit to the Terengganu Maritime Headquarters here, today with state MMEA director Maritime Captain Muhammad Suffi Mohd Ramli also present.

In a related development, Mohd Zubil said the MMEA would receive three more coastal patrol vessels to tighten the security at the country's maritime borders. Besides

that, the agency has received an allocation totalling RM280 million for the acquisition of the high-technology Multi Purpose Mission Ship (MPMS) which is equipped with four interceptor boats and advanced drones. Meanwhile, he said from April 2019 to date, a total of 1,609 Vietnamese fishermen and 159 fishing vessels were arrested through the implementation of Op Naga and Op Kuda Laut, involving a total seizure amount of RM493.4 million. "Since the MMEA begins operating in 2006, we have successfully arrested almost 2,000 Vietnamese fishing vessels, whereby 80 per cent of the vessels have been disposed of," he said. — Bernama

Source: malaymail.com; 05 April 2021

SHARING MARITIME KNOWLEDGE TO HELP ENSURE SECURITY IN STRAIT OF HORMUZ

Rear-Admiral Tazakkor made the remarks in a meeting held in south of Iran on Monday with Khan Mahmood Asif, commander of Pakistani flotilla which docked at a harbor in Bandar Abbas two days ago. Rear-Admiral Tazakkor said, aim behind interaction between the two countries' naval forces is to strengthen military relations and reach agreement on a method to design and stage maritime drills. Bilateral cooperation also shows the two sides' determination to ensure security in sea transportation and trade, the Iranian official noted. The Pakistani commander, for his part, said exchange of naval delegations will lead to deepening friendly ties.

The two can also share experiences during the visits, Commander Asif added. The two commanders said that they gave importance to establishment of security in the Persian Gulf as the main global way. Pakistan attaches great importance to its relations with Iran, he underlined. Pakistani flotilla carries a message of peace, solidarity and friendship for the Islamic Republic of Iran and the region as well, Rear-Admiral Tazakkor said.

Source: Islamic Republic News Agency; 05 April 2021

THE QUESTION FOR SEAPOWER ADVOCATES IS 'WHAT KIND OF NAVY?'

- Bryan Clark

More than a century ago, U.S. Navy captain Arthur Thayer Mahan argued in his seminal "The Influence of Seapower Upon History" that a maritime nation's economic health and security depends on its navy and ability to control the seas. It was a straightforward assertion, but timely for a country poised to ride globalization's first wave to economic dominance. Today, as we experience the digitized second wave of globalization, a virtual explosion of advocacy is resurrecting Mahan's arguments. These new seapower evangelists, however, miss the point. The question is not whether to have a global navy, but what it should look like.

For Mahan's America, caught between the Civil War and the First World War, whether to exert influence and trade on a global scale was a live question. In the 21st Century, this question is answered—the United States is a great power that depends on worldwide economic networks and relationships. And just as there is no realistic or equitable way to restore an isolated America that never really existed, there is no discernable movement today to make the U.S. Navy a coastal defense force. Seapower advocates should move on to the hard work of describing the future fleet's design and operation, so the Congress and public know their money will be well-spent.

A Navy for what?

Today's seapower renaissance emerges in part from concerns the Navy may lose to other priorities or military services in a zero-sum budget environment. These fears may be misplaced. The Biden Administration's Interim National Security Strategy makes clear that the People's Republic of China constitutes America's most important strategic challenge, posing an economic and military threat to the United States and its allies as well as violating the human rights of its own people. Maritime forces, including the U.S. Coast Guard, have been central to thus far checking PRC aggression, channeling it into gray-zone operations that stay below the level of combat. However, as Indo-Pacific commander ADM Phil Davidson noted last month, PRC military modernization will allow it to confidently pursue conventional conflict against the United States and its allies within this decade. No longer confined to the gray-zone, the People's Liberation Army could attempt to force Taiwan to accept Beijing's rule, take disputed islands from Japan, or solidify its control of the South China Sea. U.S. naval services will remain essential for deterring PRC attacks on its neighbors; the question is what they are trying to deter and how. For example, if PRC leaders decide Taiwan's independence creates an existential threat to their rule, they are likely to go "all in" and devote whatever forces are necessary to bring the island to heel. Optimizing the Navy to beat the PLA in the PRC's backyard skews it toward large, multimission ships and aircraft designed to survive and fight in a highly contested environment. This fleet would be challenging to procure and unaffordable to sustain within anticipated budgets, which could result in a shrinking, unready fleet that ultimately undermines deterrence.

Instead of lowering risk for on a single high-intensity situation, Navy planning should seek to balance risk across a range of scenarios from an invasion of Taiwan to other situations such as an attempted seizure of smaller Taiwanese islands, a bombardment or blockade of Formosa, or a quarantine of Japan's Southwest Islands. As evidenced by the Navy's current readiness difficulties and inability to grow the fleet, protracted scenarios at sea could be more difficult for the Navy to address than a Taiwan invasion in which all Joint forces and capabilities can be brought to bear with permissive rules of engagement and ample supplemental funding.

A fleet for conflict and competition

Prolonged confrontations below the level of major power war would demand a Navy that can sustain an enhanced posture for months or years. However, the Navy's difficulty maintaining even a modest increase in Middle East presence during the past several years suggests it will need more deployable platforms and lower operations

and support costs than today's fleet of exquisite multimission ships and aircraft. Notably, although the Navy is currently growing, many of its newer vessels are unable to deploy, such as Zumwalt destroyers, Littoral Combat Ships, and the USS Gerald Ford. A Navy rebalanced from today's monolithic high-end warships and aircraft towards a growing number of smaller, deployable, platforms and unmanned vehicles would present more proportional options for Combatant Commanders to counter gray-zone operations and address maritime security at vulnerable chokepoints. Using the command, control, and communications capabilities being developed under Project Convergence, distributed platforms could aggregate and mass effects for larger, more intense combat situations.

A rebalanced fleet would also be more adaptable compared to the current naval force, creating more uncertainty for opponents regarding the units to be employed and the tactics they will use. Using adaptability to attack an enemy's orientation and decision-making could enhance the Navy's effectiveness at deterring aggression by increasing the PRC's uncertainty regarding the costs and ease of a military operation. This is obviously only a sketch of what Navy planning should consider—but it represents the debate Navy advocates need to have instead of recycling century-old arguments that are not in contention. America knows it needs a Navy, but today's seapower renaissance needs to produce a clear vision for the future fleet that is relevant for America's 21st century challenges.

Source: Forbes; 05 April 2021

MARITIME FORCES

DRDO DEVELOPS NEW TECHNOLOGY THAT WILL PROTECT NAVAL SHIPS FROM MISSILE ATTACKS

- Abhishek Bhalla

The Indian Navy recently carried out trials of an indigenous technology that will protect ships from missile attacks, the Ministry of Defence said. "The Defence Research and Development Organisation (DRDO) has developed an Advanced Chaff Technology to safeguard the naval ships against enemy missile attack," a state said. Defence Laboratory Jodhpur (DLJ), a DRDO laboratory, has indigenously developed three variants of this critical technology christened Short Range Chaff Rocket (SRCR), Medium Range Chaff Rocket (MRCR) and Long Range Chaff Rocket (LRCR). All three met Indian Navy's qualitative requirements.

"The successful development of Advanced Chaff Technology by DLJ is another step towards Atmanirbhar Bharat," said sources. The Indian Armed forces are trying to be self-reliant and plan to reduce its dependency on foreign manufacturers. "Recently, the Navy conducted trials of all the three variants in the Arabian Sea on an Indian Naval Ship and found the performance satisfactory," the MoD said. Chaff is a passive expendable electronic countermeasure technology used worldwide to protect naval ships from enemy's radar and Radio Frequency (RF) missile seekers. The importance of this development lies in the fact that very less quantity of chaff material deployed in the air acts as decoy to deflect enemy's missiles for safety of the ships.

The DRDO has gained the expertise to meet the futuristic threats from adversaries. The technology is being given to the industry for production in large quantities. Defence Minister Rajnath Singh has congratulated DRDO, Indian Navy and Industry for the achievement. Dr G Satheesh Reddy, Secretary, Department of Defence R&D and Chairman, DRDO appreciated the efforts of the teams involved in the indigenous development of this vital technology to safeguard Indian Naval Ships. Vice chief of Naval Staff, Vice Admiral G Ashok Kumar has applauded DRDO's efforts in developing the strategically important technology indigenously in a short span and cleared for bulk production.

Source: indiatoday.in; 06 April 2021

TURKEY DETAINS 10 RETIRED ADMIRALS OVER CRITICISM OF ERDOGAN-BACKED CANAL PROJECT

Turkey on Monday detained 10 retired admirals after they openly criticised a canal project dear to President Recep Tayyip Erdogan in a country where the hint of military insubordination raises the spectre of past coups. The official approval last month of plans to develop a 45-kilometre (28-mile) shipping lane in Istanbul comparable to the Panama or Suez canals has opened up debate about Turkey's commitment to the 1936 Montreux Convention. The pact is aimed at demilitarising the Black Sea by setting strict commercial and naval rules on passage through the Bosphorus and Dardanelles straits leading to the Mediterranean.

In their letter, 104 retired admirals said the existing treaty "best protects Turkish interests". "Recently, the opening of the Montreux Convention to debate within the scope of the authority to withdraw from international treaties and the Canal Istanbul project is a cause for concern," the letter read. Erdogan on Monday accused the 104 retired admirals of "hinting at a political coup" by criticising his plans for a new canal linking the Black Sea to the Mediterranean. "In a country whose past is filled with coups, (another) attempt by a group of retired admirals can never be accepted," said Erdogan in a statement. While the Ankara chief public prosecutor's office has issued arrest warrants for 10 former admirals who signed the letter, four others had to report to police in the Turkish capital within three days since the prosecutor opted not to detain the other four due to their advanced age. They are accused of "using force and violence to get rid of the constitutional order", NTV broadcaster reported.

Father of sea doctrine

The prosecutor's office opened a probe on Sunday into the retired admirals on suspicion of an "agreement to commit a crime against the state's security and constitutional order". The wording is similar to that prosecutors have used against other Erdogan critics who have been jailed in a crackdown that followed a failed putsch in 2016. The retired admirals detained on Monday included some of Turkey's most famous naval commanders. They included Cem Gurdeniz, often described as the father of Turkey's controversial new maritime doctrine known as "Blue Homeland". The doctrine has grown in prominence, especially during tensions last year between Greece and Turkey over Ankara's gas exploration in the eastern Mediterranean. It argues Turkey has rights to substantial maritime borders including the water surrounding some Greek islands, much to Athens' chagrin. Also detained was Alaettin Sevim, who had previously been arrested in 2011 as part of the so-called Ergenekon alleged coup plot against the government, which was later discredited.

Before the arrest warrants were issued, state news agency Anadolu said the prosecutor's office had determined who the "leaders" were of the open letter.

'Evoking coups'

Turkish officials have reacted angrily to the letter, claiming it appears to be a call for a coup. "Stating one's thoughts is one thing, preparing a declaration evoking a coup is another," parliament speaker Mustafa Sentop said on Sunday. Coups are a sensitive subject in Turkey since the military, which has long seen itself as the guarantor of the country's secular constitution, staged three coups between 1960 and 1980. The attempt to overthrow Erdogan in 2016 was blamed on followers of US-based Muslim preacher Fethullah Gulen in the military. "This is upsetting in the name of democracy," Turkish Justice Minister Abdulhamit Gul said on Monday. "Our struggle against this dark mentality continues. The necessary response will be given within a legal framework," Gul added.

Erdogan's proposed 75-billion-lira ($9.8-billion) alternative to the Bosphorus and Dardanelles raises questions on whether existing agreements would apply to the new route. Last month, parliament speaker Sentop said the president "could" withdraw from the convention. "He has the power," he told HaberTurk channel on March 24. "But there is a difference between possible and probable." Erdogan assumed the power to pull Turkey out of treaties without parliament's approval in 2018. Last month he withdrew Turkey from the world's first binding treaty to prevent and combat violence against women.

Source: france24.com; 05 April 2021

EISENHOWER CARRIER STRIKE GROUP ENTERS 5TH FLEET'S AREA OF RESPONSIBILITY

- Naval Air Force Atlantic Public Affairs release

The aircraft carrier USS Dwight D. Eisenhower (CVN 69), flagship of the Eisenhower Carrier Strike Group (IKE CSG), along with guided-missile cruiser USS Monterey (CG 61) and guided-missile destroyers USS Mitscher (DDG 57) and USS Thomas Hudner (DDG 116), completed a southbound Suez Canal transit into the Red Sea, April 02. The IKE CSG's transit marks the first U.S. warships to pass through the Suez Canal since it reopened on March 29. "We appreciate the Government of Egypt and Suez Canal Authority's efforts to ensure the safety of navigation in this critical waterway for all ships, and in allowing the IKE CSG to transit so quickly," said Vice Adm. Samuel Paparo, Commander U.S. Naval Forces Central Command, U.S. 5th Fleet and Combined Maritime Forces. While in the U.S. 5th Fleet area of operations, the IKE CSG will operate and train alongside regional and coalition partners, and provide naval aviation support to Operation Inherent Resolve. "Our strike group is excited to sail and fly in the conduct of our operations in the Red Sea," said Rear Adm. Scott F. Robertson, Commander Carrier Strike Group TWO. "The importance of our regional partnerships throughout U.S. Fifth Fleet Area of Responsibility cannot be overstated,

and enhancing our relationship with Egypt is a continuation in fostering both trust and unity in our enduring maritime efforts."

As an inherently flexible maneuver force, capable of supporting routine and contingency operations, the carrier's presence demonstrates the U.S. Navy's commitment to regional partners and maritime security. Deploying ships and aircraft of the strike group, commanded by Rear Adm. Scott F. Robertson, include flagship USS Dwight D. Eisenhower (CVN 69); the Ticonderoga-class guided-missile cruiser USS Monterey (CG 61); Destroyer Squadron 22 ships include Arleigh Burke-class guided-missile destroyers USS Mitscher (DDG 57), USS Laboon (DDG 58), USS Mahan (DDG 72) and USS Thomas Hudner (DDG 116).

The 5th Fleet area of operations encompasses about 2.5 million square miles of water area and includes the Arabian Gulf, Gulf of Oman, Red Sea and parts of the Indian Ocean. The expanse is comprised of 20 countries and includes three chokepoints, critical to the free flow of global commerce.

Source: US Embassy in Egypt; 04 April 2021

THE PHILIPPINE COAST GUARD AUXILIARY

- Marlon Iñigo T. Tronqued

THE Philippine Coast Guard (PCG) has existed since the turn of the 20th century. From 1901 until after World War 2, the PCG was under various departments of the national government, including the Department of Commerce and Police, Bureau of Navigation, Bureau of Customs and Bureau of Public Works. In 1967, Congress enacted Republic Act 5173 (RA 5173) which placed the PCG under the Philippine Navy. In 2009, Congress enacted RA 9993, which amended RA 5173 and established the PCG as an armed and uniformed service attached to the Department of Transportation and Communication, now known solely as the Department of Transportation. Notwithstanding, Section 2 of RA 9993 provides that in times of war, as declared by Congress, the PCG then becomes attached to the Department of National Defense.

The Philippine Coast Guard Auxiliary (PCGA) represents a significant civilian uniformed organization under the direct control and supervision of the PCG Commandant. Predicated on member volunteerism, the PCGA assists the Philippine Coast Guard in functional areas including: 1) the promotion of safety of life and property at sea; 2) the preservation of the marine environment and its resources; 3) the conduct of maritime search-and-rescue operations; 4) the maintenance of aid to navigation; and 5) other activities, which enhance maritime community relations. Enhanced maritime community relations under the fifth functional area include civic activities, participation under the National Service Training Program, youth development and activities that promote recreational safety. These functional areas of the PCGA are particularly provided for in Section 11 of RA 9993. With its own chain of command, the PCGA has an organizational structure parallel to the PCG. Today, the PCGA has nationwide operations spread among 13 auxiliary districts in Luzon, the Visayas and Mindanao. There are almost 5,000 member volunteers which form part

of the core auxiliary membership. Each auxiliary district is further subdivided into auxiliary squadrons which are headed by officers designated by the PCG Commandant.

The Manila Yacht Club (MYC), a historical landmark, is considered as one of the most prestigious yacht clubs in Southeast Asia. The MYC, which was established in 1927, has produced active members of the PCGA. In fact, the MYC 101st PCGA Squadron remains the oldest active squadron of the PCGA in the country. On March 10, 1973, the MYC 101st PCGA Squadron was activated by then head of the PCG, Commodore Hilario Ruiz, together with the regular members of the MYC, including Commodore Richard L. Brown. In the ceremony that was held at the MYC, Commodore Brown was made the Squadron Commander of the first auxiliary Coast Guard Squadron. During that time, the MYC 101st PCGA Squadron was the only auxiliary squadron in the Philippines. Ever since the squadron's inception, the MYC 101st PCGA Squadron, which was then mainly composed of regular members of the Yacht Club, has been a reliable partner of the PCG. To date, the MYC 101st PCGA Squadron has consistently rendered assistance to the PCG in the functional areas mentioned. In fact, members of the MYC 101st PCGA Squadron have even provided for the use of personally owned yachts and vessels for the conduct of search and rescue operations and maritime clean-up operations.

Under the 1982 United Nations Convention on the Law of the Sea (Unclos), coastal States have the obligation to ensure the protection of the marine environment and the promotion of maritime safety. Furthermore, Article 194 of Unclos provides for the general obligation of all state Parties to prevent, reduce and control pollution of the marine environment, to wit: "States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection." The mandate of the PCGA certainly strengthens the country's compliance with international law and the nation's maritime capabilities in the preservation and protection of the marine environment. Undoubtedly, the PCGA volunteer force remain integral partners of the PCG in enforcing both domestic and international maritime laws.

Source: manilatimes.net; 05 April 2021

CHINA'S PLA NAVY DEPLOYS 'LIAONING' CARRIER GROUP TO COUNTER US-LED QUAD IN THE PACIFIC

Upping its ante against the US-led QUAD, China has deployed warships in the Pacific. As a response to the American provocation, the PLA Navy has deployed a carrier task group led by the aircraft carrier Liaoning, accompanied by the latest Type 055 destroyer for the first time this year in the region. The Japanese Maritime Self Defense Force (JMSDF) reported the movement of Liaoning, escorted by 5 other warships,

sailing through international waters between Okinawa and Miyako Island, and moving south towards the Pacific Ocean on the weekend.

The carrier group consists of the lead ship Liaoning, with a Type 055 class stealth guided-missile destroyer Nanchang, two Type 052D destroyers Chengdu and Taiyuan, the Type 054A frigate Huanggang and the Type 901 comprehensive supply ship Hulunhu. In a press release, the Japanese Defense Ministry said a Y-9 patrol aircraft had flown across the Miyako Strait and returned on Sunday (April 4). To counter this combined Chinese movement, the Japanese government sent a destroyer JS Suzutski and a P-1 Maritime Patrol Aircraft (MPA), along with a P-3C anti-submarine warfare aircraft "to monitor and gather information on the Chinese vessels". The Liaoning sailed through this waterway in April last year as well. The recent passage follows a joint QUAD+ exercise "La Perouse" in the Bay of Bengal in the Indian Ocean, led by the French Navy and involving the Indian, American, Australian, and Japanese navies. Last week, the US Navy also conducted a two-day joint drill with their Australian counterparts in the Eastern Pacific, and on Sunday the American supercarrier USS Theodore Roosevelt entered the South China Sea after conducting joint drills with the Indian Navy and the Indian Air Force.

Analysts told the Chinese state media Global Times that the Type 55 destroyers accompanying aircraft carriers would be the standard carrier formation for the People's Liberation Army Navy. The Type 055 destroyers, also called the Renhai-class, have a multi-mission design; the combination of sensors and weapons suggests the main role of area air defense, with anti-submarine warfare capabilities which surpass previous Chinese surface combatant ships. Last month, the Renhai-class destroyer Nanchang sailed through the Tsushima Strait along with a Type 052D class guided-missile destroyer Chengdu and the Type 054A guided-missile frigate Daqing towards the Sea of Japan. The Chinese aircraft incursions were also reported by Taiwan on Monday, over the Bashi Channel, which connects the Pacific Ocean to the South China Sea. The aircraft included four J-16 flankers and four J-10 dragons along with an early-warning plane and a submarine warfare aircraft.

Source: eurasiantimes.com; 06 April 2021

SHIPPING, PORTS AND OCEAN ECONOMY

FREIGHT TRAFFIC HANDLED BY 12 MAJOR PORTS IN INDIA CONTRACTED 4.6% Y-O-Y IN FY21

- Yaruqhullah Khan

Freight traffic handled by 12 major ports in the country contracted 4.6 percent year on year to 672.61 million tonne in FY 2020-21 due to disruptions caused by the COVID-19 pandemic mainly in the first half of the year, data released on April 5 by the Indian Ports Association showed. Ports' freight traffic showed a year-on-year increase for the fifth consecutive month in March. Ports' freight traffic boomed in March, rising 16.4 percent on year, the largest in at least a year. Among ports, Deendayal port at Kandla handled the highest traffic in 2020-21 at 117.56 million tonne, followed by Paradip port at 114.55 million tonne. Petroleum, oil, and lubricants, which account for about a third of the total freight traffic at major ports, fell 12.8% on year to 206.75 million tonne in 2020-21. Container traffic, the next largest segment, declined 2.1 percent to 143.74 million tonne.

Thermal and coking coal traffic declined 15.4 percent and 5.2 percent, respectively, during the period. Iron ore freight traffic, on other hand, surged 29.1 percent in 2020-21 to 71.03 million tonne. Raw fertilizer traffic rose 14,7 percent on year to 7.57 million tonne, and finished fertilizer traffic rose 11.3 percent to 10.38 million tonne. Traffic of other cargo also rose 2.4 percent on year to 72.83 million tonne in 2020-21, the government data showed.

Source: moneycontrol.com; 05 April 2021

THERE IS A LOT OF UNUSED OIL STORED UP AROUND THE WORLD

- Julian Lee

The OPEC+ group of oil producers, led by Saudi Arabia and Russia, may have got inventory levels back up to where they want them, but that does not mean they can take their feet off the brakes on production just yet. At their last meeting, inauspiciously held on April Fool's Day, the group set out a path to restore some of their shut-down production over the next three months. The easing, but not yet the

ending, of output curbs reflects a more optimistic view of demand for oil as the northern hemisphere moves into its summer months. The output increases are relatively modest — 350,000 barrels a day in May, the same in June and another 440,000 barrels in July. On top of that, Saudi Arabia will gradually restore the additional 1 million barrels a day that it cut unilaterally in February.

But by the end of July, although the producers will have added almost 2.3 million barrels a day to supply since March, they will still only be pumping what they had originally planned for January. And they will still be withholding almost 60 per cent of the production they cut a year ago. The strength of oil prices owes a lot to the group's discipline and its willingness to delay the easing of output cuts, even as it neared its self-set target of reducing commercial oil stockpiles in OECD countries to their average 2014-2019 level. According to the latest monthly forecast from the US Energy Information Administration, that target has already been reached. But do not expect that to mean a sudden flood of oil from Saudi Arabia, Russia and their allies. Their approach will, rightly remain cautious. The group concentrated on stock levels in the OECD because, as I have written before, they are the most visible. The US provides detailed numbers on a weekly basis, and most of the other members report inventory levels monthly. That is in stark contrast to countries like China, where inventory is regarded as a state secret and not reported at all.

That is not to say we have no idea as to what is happening to oil stockpiles elsewhere. Analysing satellite data and tracking the movement of oil tankers can be used to build up pictures of how stockpiles are changing in many parts of the world. One key place that is watched closely by oil traders is Saldanha Bay, just north of Cape Town in South Africa. Underground tanks there can hold as much as 55 million barrels of crude, and the geographical location keeps options open for sending oil to markets in either the Atlantic or Pacific. The tanks at Saldanha Bay filled rapidly last year, as the pandemic slashed demand and time-spreads (the difference between future and prompt oil prices) made it profitable to store crude for delivery at a later date. That is now changed and oil is being taken out of the tanks as quickly as it was put in last year. But stockpiles are not coming down everywhere. There is one very important place that is missing from the OPEC+ target: China. China accounted for about 60 per cent of global crude stock builds last year, adding 367 million barrels to its inventory over the course of 2020, according to International Energy Agency calculations. Some of that oil went into strategic, government-controlled stockpiles — the Chinese equivalent of the US Strategic Petroleum Reserve — and is unlikely to reappear unless there is a supply crisis. But China's commercial stockpiles rose, too. The volume of crude stored at ports in the Shandong province, home to most of the country's independent refiners, soared from about 30 million barrels in December 2019 to more than 50 million barrels by early February 2020, before stabilising at about 45 million barrels. It is still close to that level now, buoyed in part by new refineries.

Saudi Arabia remains confident that the producer group took the right decision at the start of the month, even as Covid-19 is again spreading rapidly in many parts of the world. Cases hit a new record in India, and Japan is set to reimpose lockdowns in Tokyo, Kyoto and Okinawa. Although the rapid rollout of vaccines is showing signs of boosting oil demand in places like the US and UK, traders continue to await a recovery in consumption elsewhere. The producers are right to remain cautious.

Source: Deccan Herald; 11 April 2021

MODERN TECHNOLOGIES TO KEEP INDIAN SHIPPING FUTURE READY

- Cdr. Milind Kulshreshtha (Retd)

"A smooth sea never made a skilled sailor"

– Franklin D. Roosevelt

India's National Maritime Day is conducted on 5th April every year since 1964 to commemorate the maiden voyage of an Indian owned ship "SS Loyalty" of Scindia Steam Navigation from Mumbai to London on the 5th April 1919. This voyage established an Indian representation in the British controlled sea routes. With such key pro-independence efforts, the shipping trade was well-established post-independence and today India boasts of vibrant shipping industry. India has now twelve major and two hundred non-major ports, with these ports handling 95 per cent of the international trade for India. India provides about 9 per cent of the seafarers to global shipping and is the third-largest marine manpower hub. The National Maritime Day is an occasion to remember the doyens of the shipping industry, along with the courageous seafarers and the institutions which have evolved to make this industry vibrant.

Pandemic Crisis

The seafarers help in transporting 80 per cent of global food, oil, medicines, finished and raw goods trade. During the ongoing pandemic, they too were highly stressed since it resulted in thousands of seafarers being stuck onboard ships beyond their contractual obligations due to travel restrictions, quarantine etc. This translated into a crew rotation crisis as even the seafarers on land were unable to travel to join ships for duties. The shore leave at various ports was also curtailed. DG Shipping had promulgated stringent instructions to the shipping companies to evolve a disease outbreak management plan for dealing with occurrences onboard as per the World Health Organisation (WHO) guidelines. Onboard a vessel, the close live-in quarters make it difficult to control the spread of viruses. This led to cruise shipping business world over to collapse as the implementation of containment and quarantine procedures was difficult on the passenger liners. A ship even while at an anchorage away from a port requires all its machinery to be running and maintained. In fact, due to the pandemic, ship machinery was running for extended hours, and the crisis even interrupted the mandated dry-dock survey routines of the ship for sea-worthiness certification. This created a backlog of demand on the sparsely manned dry-docks so much so that till the end of March 2021, the DG Shipping was still handling requests for further extensions of the Certificates. The pandemic times have been a real test of the strength of Indian shipping.

Mercantile Shipping Risks

Indo-Pacific region carries 46 per cent of global trade and 50 per cent of India's trade and this makes it mandatory for India to safeguard its interest in the Indo-Pacific region. The prevailing geopolitical situation in the Indo-Pacific leads to shipping being a critical dimension in the Indian security framework. In case of any hostilities, the supply of raw material, fuel, and food etc., for India shall be dependent on the continuous safety of the Sea Lines of Communication (SLOCs) for shipping by the Indian Navy and the Coast Guard. The maritime trade faces multiple risks at high seas, some are natural (like weather conditions) and others manmade like a piracy attack. Indian Navy is responsible for the protection and safe passage of mercantile shipping in the Indian Ocean Region and it has established a Maritime Information Centre for making the seas secure for the shipping trade. The Information Fusion Centre – Indian Ocean Region (IFC-IOR) has been specifically set up since 2018 to share the maritime non-sensitive information with other friendly nations to improve the safety of ships. An Information Management and Analysis Centre (IMAC) also has been set up within the premises of the IFC-IOR complex and this is jointly administered by the Indian Coast Guard. IMAC integrates the network of sensors and equipment (like coastal radars etc.) to display real-time situational awareness on the Indian coastline. The main incidents monitored by these Information Centers are:

- Piracy, armed robbery and Irregular human migration
- Maritime terrorism and contraband smuggling
- Illegal Unreported Unregulated (IUU) fishing
- Natural events and Security of marine environment
- Any other maritime incidents

Evolving Maritime Digital Transformation

The International Maritime Organisation (IMO) and DG Shipping have been recommending the utilization of numerous technological advancements to make shipping safe and secure. The Safety of Life at Sea (SOLAS) Convention is an international maritime treaty that defines the minimum safety standards for merchant ships. India's SAGAR (Security and Growth for All in the Region) programme designates India as a partner and First Responder in the IOR region. Such initiatives require extensive Maritime Domain Awareness (MDA) using the latest digital systems like AIS (Automatic Identification Systems), Satellite monitoring and other telecommunication equipment. The recent ongoing pandemic also highlighted the need for eliminating paperwork and digitalization in the shipping industry through integrated ports and ships. Some of the modern digital systems being deployed in the maritime community are:

- **Space based Automatic Identification System (SAT-AIS**). Automatic Identification System (AIS) is an important equipment for maritime safety and vessel traffic management. As per IMO, it is mandatory for all large sea-going vessels to be operating AIS onboard. This equipment broadcasts the ship's position along with a short message stream about the voyage etc. THE existing AIS system had range limitations as it worked in the VHF frequency band. The need for global coverage resulted in the innovation of a space-based AIS. Satellite-based AIS (SAT-AIS) enables the tracking of vessels in a larger area by using the technique of AIS message retransmission by low Earth orbit satellites.

The system provides close to a hundred per cent ship detection and identification probability (for up to a thousand ships in a particular area). Further, the SAT-AIS uses Software-defined technology that allows for a complete in-orbit re-configuration of the system.

- **Maritime Cloud Services.** VHF Data Exchange System (VDES) facilitates a two-way high-speed data exchange between ships, satellites and shore. The AIS is a part of the VDES System which uses the Gaussian Minimum Shift Keying (GMSK) modulation technique. The communication protocol is designed for data communication for e-Navigation and access to a Maritime Cloud service.

- **Artificial Intelligence.** Weather conditions play an important role in the safety of the ships on high seas. Cyclonic conditions can make navigation difficult and put the cargo at risk. The Space-based weather sensors are providing humongous real-time data on the environmental conditions on Earth and this data has to be processed rapidly to gain real-time results. The required data churning can be carried out efficiently by Machine Learning or Deep Learning Neural Networks.

- **Industry 4.0.** The Government's Sagarmala initiative targets port-related developments in India and comprises a National Perspective Plan (NPP) for the overall development of India's coastline and maritime sector for efficiency. Ports and terminals are required to be highly efficient and digitalization of the processes to achieve automation is being planned. The Fourth Industrial Revolution or Industry 4.0 is the solution as a way ahead here. Industry 4.0 is cyber-physical technology that harnesses multiple techniques like Industrial Information of Things (IIoT), Machine Learning, Big data Analytics, Cloud Computing etc. to improve the processes for effectiveness and efficiency. Global Supply Chain Integration of Shipping and Ports shall evolve into smart solutions like Shipping 4.0 and Ports 4.0.

- **Cyber Security.** With digitalization transformation for automation in the shipping industry, it is expected that the maritime industry shall be a target of cyber-criminals. IMO Resolution MSC.428 (98) describes the ship's Safety Management System (SMS) accounting for the cyber risk management compliance as per the Information Security Management code. With effect from 01 January 2021, the requirement of integrating the cybersecurity risk into the onboard safety management systems has been mandated for the seagoing vessels. The standards are based on US National Institute of Standards and Technology (NIST) cybersecurity guidelines to identify or detect the risks and mitigation plan to protect the marine assets.

Conclusion

India's social and industrial sustenance shall continue to be highly dependent upon the huge shipping apparatus, with the blue economy already an important contributor to India's growth. An urgency to establish enhanced shipping services under a larger Indian-flagged fleet shall add to India's preparedness at all times. Though the Land

borders require to be defended, the sea borders are not only to be defended but also kept open for the nation's sustainability and stability during any blockade by a hostile nation. With vast oceans on three sides of the Indian peninsula, the focus on shipping and seafarers being considered as essential services needs a serious re-designation during planning and budgeting stages. Further, whereas the technologies like Shipping 4.0 and Ports 4.0 may seem to be expensive initially, but these maybe the only way ahead for a secure, profitable and sustainable shipping industry for India.

Source: bharatshakti.in; 05 April 2021

THE FRESH ALTERNATIVE TO OFFSHORE FISH FARMS

- Ben Belton & Dave Little & Zhang Wenbo

A tidal wave of interest is building in farming the seas. It's part of a global rush to exploit oceanic resources that's been dubbed the "blue acceleration." Optimistic projections say that smart mariculture — fish farming at sea — could increase ocean fish and shellfish production by 21 million to 44 million metric tons by 2050, a 36 to 74 percent jump from current yields. Other estimates suggest that an ocean aquaculture area the size of Lake Michigan might produce the same amount of seafood as all of the world's wild-caught fisheries combined. Our work as interdisciplinary researchers studying aquatic food systems shows that these claims exaggerate mariculture's true potential, and that increasing mariculture in a sustainable way is fraught with challenges. We see freshwater fish farms as a better way to help fight hunger and bolster food security. In our view, governments, funders and scientists should focus on improving aquaculture on land to help meet the United Nation Sustainable Development Goals.

Questionable assumptions

Ocean aquaculture advocates often cite limited supplies of wild-caught fish and call for cultivating them to feed the world. As they see it, aquaculture on land is limited by scarce land and freshwater resources, while the oceans offer vast areas suitable for farming. Framed this way, mariculture seems to offer boundless potential to meet future demand for seafood and feed vulnerable populations with little environmental impact. But our research paints a different picture. We see far fewer technical, economic and resource constraints for freshwater aquaculture than for ocean farming, and far greater potential for land-based fish farms to contribute to global food security.

Freshwater aquaculture has grown steadily over the past three decades. Asia is at the center of this boom, accounting for 89 percent of world aquaculture production, excluding plants. The most important species groups — carp, tilapia and catfish — are herbivorous or omnivorous, so they don't need to eat animal protein to thrive. While they may be fed small amounts of fish to speed growth, their mainstay diet consists of inexpensive byproducts of crops such as rice, groundnut and soy, as well as natural plankton. It's relatively cheap and easy to grow freshwater fish in small earthen ponds. Aquaculture has been an economic boon, especially in Asia, providing jobs and income

for vast numbers of family farms, workers and small businesses. Farmed freshwater fish tend to be an affordable staple food for millions of low- and middle-income consumers — and many better-off ones, too.

Raising marine fish

Raising marine fish is a different proposition. The harsh ocean environment makes production risky, and the biology of these species makes many of them difficult and costly to breed and grow. Most marine aquaculture species are carnivores, so they need other fish as part of their diets. About 20 million metric tons of fish caught each year is used instead to feed farmed fish. It's a contentious environmental and ethical issue, as some of these fish otherwise could be food for humans. Improvements in technology have reduced, although not eliminated, the amount of fish used in feeds, especially for farmed salmon. It takes half as much fresh fish to raise salmon as it did 20 years ago.

Farmed salmon accounts for 45% of all fish farmed from the sea.

These innovations were achieved through massive investments by the Norwegian government and the industry, dating back to the 1970s. Research focused on genetic improvement, nutrition and production systems, and it's paid off. Farmed salmon accounts for 45 percent of all fish farmed from the sea. However, it's unlikely that other less popular fish, such as grouper, sea bass or cobia, will be as thoroughly researched or farmed with the same efficiency. The market is too small. For a land-based analogy, think of chickens. Like salmon, they have long been the focus of intensive research and development. As a result, they grow to market size in just 45 days. On the other hand, the guinea fowl — a chickenlike bird raised for specialty markets — has undergone limited selective breeding, develops slowly and yields far less meat, making it more costly to raise and more expensive to buy.

Farming the open ocean

Marine fish farming is currently done in sheltered bays and sea lochs. But there is growing interest in a new high-tech method that raises fish in huge submersible cages anchored far from land in the open ocean. It's risky business, with high operating costs. Expensive infrastructure is vulnerable to intense storms. Offshore mariculture one day might produce luxury fish that generate profits for a few large investors. To be successful, offshore farms will need to grow high-priced fish such as bluefin tuna. And they will need to operate at industrial scale, like SalMar's massive "Ocean Farm" in Norway, which has capacity for 1.5 million fish. While open-ocean mariculture may be technically feasible, its economic viability is questionable. Pilot projects in Norway, China and the U.S. are not yet commercially successful. And although there is strong global demand for salmon, other species such as grouper have small niche markets. They are likely to remain specialized high-end products because of steep production costs.

Freshwater alternatives

Human population is growing fastest in Africa, and incomes are rising most rapidly in Asia. Most additional future demand for fish will come from low- and middle-income consumers in these regions. Farming tilapia and catfish is already becoming more popular in Egypt and both West and East Africa. Meanwhile, total seafood

consumption in high-income countries has plateaued since 2000. But even in these countries, demand for farmed freshwater fish is growing because it's an affordable source of protein. In the U.S., tilapia, pangasius (freshwater catfish) and channel catfish are the fourth, sixth and eighth most consumed seafood items. Offshore mariculture might one day produce luxury fish that generate profits for a few large investors. But we believe freshwater aquaculture will continue to feed far more people and benefit many more farmers and small businesses. Investments in selective breeding, disease control and farm management through public-private partnerships can create a more sustainable aquaculture industry, reducing the amount of land, freshwater and feed used to grow fish while increasing productivity. For more inclusive and sustainable development, we believe governments and funders should prioritize raising fish on land.

This story is part of Oceans 21

Our series on the global ocean opened with five in-depth profiles. Look out for new articles on the state of our oceans in the lead up to the United Nations' next climate conference, COP26. The series is brought to you by The Conversation's international network. This story first appeared on: The Conversation

Source: greenbiz.com; 05 April 2021

CYBER SECURITY: DEFENDING THE TANKER AT SEA, IN PORT AND FROM THE CREW

- Craig Jallal

Discussing IMO resolution MSC.428(98), and the requirement that all shipboard safety management systems be documented as having included cyber-risk management no later than a vessel's first annual Document of Compliance audit in 2021, Inmarsat Maritime's retail director Laurie Eve offered an overview of the IMO 2021 guidance. Owners, Mr Eve said, should be in no doubt that they will face enforcement of the guidance by port state control authorities such as the US Coast Guard. "Ships could be detained and owners fined for noncompliance," he said. "Shipowners need to demonstrate they have considered the risk and what to do if there are issues." Ships should have certification and documentation, but compliance with IMO 2021's cyber guidelines requires owners to understand each vessel's cyber risk. "There is no silver bullet, no definitive checklist," said Mr Eve. "It depends on a ship's cyber risk, so [owners and managers] need to have a risk management approach."

CyberOwl's Daniel Ng explained how his company's recent survey of 50 fleet operators found good implementation of some of IMO 2021 requirements and cyber-risk management. He said owners, operators and managers had started training employees and set up "aspects of emergency plans" but much still remained to be done. "They are still struggling at incident readiness and are not monitoring for attacks on shipboard systems," Mr Ng said. A worrying issue is the number of onboard systems still connected to vessel satellite communications. "Operational technology (OT) should be air-gapped but are unknowingly connected to the vessel business network," he said.

These include loading computers, closed-circuit television systems and engine monitoring and alarm systems. “These are critical systems, with loading computers linked to the ballast system for example,” Mr Ng said. “Controls need to be in place. Engine monitoring systems should be air gapped.”

CyberOwl also examined shipboard computers, looking for unwanted and potentially dangerous programs, which are regularly installed. “The top offender is PDF editing software,” according to Mr Ng: “In shipping there are a lot of documents and often they come in PDF format and need to be edited and sent back to offices.” If owners have not installed official software for PDF editing, crew will seek to upload free and potentially hazardous programs, “just for the job they need to do” said Mr Ng. Other unwanted programs found in onboard computers include gaming, image editing and messaging software. “These do not have levels of security and could be back-doors for malware,” he said.

University of Piraeus cyber security associate professor Nineta Polemi noted the importance of collaboration across the supply chain in order to strengthen cyber security for all involved. “There are a plethora of partners and assets, so how can we secure all these supply chain services?” she asked. “It is difficult to estimate and mitigate supply chain risk and difficult to respond if there is a cyber-attack propagating through the supply chain." Ms Polemi called on regulators, such as IMO and the European Union, to collaborate on guidance and compliance requirements. “It is challenging to enhance collaboration and to share threat intelligence and incident handling,” she said.

In a survey, 28% thought the biggest challenge to cyber security was OT and internet-of-things (IoT) networks, with 25% thinking it was operational challenges. Another 19% said personnel, with 13% citing costs, 6% administration, 6% installation and just 3% highlighting the need to identify the right software. There was also a very low level of preparedness for IMO 2021 cyber security requirements. Only 11% said they were completely ready and 5% thought they had not started. Some 12% said they were 10% ready, 14% said they were a quarter along the way, 40% said they were halfway prepared and 18% said they were 75% prepared. Most in the survey (28%) confessed to being poorly prepared to identify a cyber risk in good time. Cyber training was a huge gap for many respondents: 35% said training had never been done; another 23% said it was, but more than a year ago; 16% said it was conducted 6-12 months ago; and 26% said in the past six months. The lack of preparedness among seafarers is understandable, given the responsibilities at sea, but ports seem to be equally unprepared. In a survey, only a third thought there were cyber security guides for port stakeholders, and 67% thought there was no awareness. A worrying 64% believed that there had already been a cyber attack on a port.

University of Plymouth research fellow for cyber security Dr Kemedi Moara-Nkwe noted that cyber-attacks on logistics hubs would devastate the supply chain network with tremendous financial damage. He said cyber threats could affect OT such as supervisory control and data acquisition (SCADA) systems and IT networks in ports. “Ports are unique in their interfaces between IT and OT, such as for cargo loading and unloading,” he said. He noted a cyber-attack initiated in IT could impact substations, electrical systems and automated cranes. “Ports depend on the technology and need

to consider the risks as a cyber-attack can affect availability of technology and assets," said Mr Moara-Nkwe.

Norway has taken a proactive step in establishing the Norwegian Maritime Cyber Resilience Centre (NORMA) for building unified resilience against cyber threats. NORMA's cyber managing director Lars Benjamin Vold said: "New technology has been developed for cyber-defence purposes, while existing structures and organisations can be built on." NORMA provides an intelligence- and information-sharing service and an incident response and crisis support service. "From 1 June 2021, we will be a security operations centre, with services tailored for the shipping and maritime sector," said Mr Vold.

McDermott Will & Emery partner Paul Ferrillo noted that in the US, the Coast Guard was the chief maritime law enforcement agency. He said the national maritime cyber security plan "rides side-by-side with the US Coast Guard's guidelines for addressing cyber risks" at Maritime Transportation Security Act (MTSA)-regulated facilities (NVIC). "[This] generally requires these ports to address and document network and cyber security vulnerabilities," said Mr Ferrillo. MTSA requirements are mandatory, while the US Coast Guard's NVIC is guidance for reminding port facilities of the need to comply with MTSA regulations. Having regulations in place is one thing, but ultimately, cyber security is a personal and personnel issue. People are the weakest link hackers can use to unpick company network security. Grant Thornton, UK partner for digital forensic group Vijay Rathour said: "Attackers have time and motivation to penetrate your systems. Malware and phishing continue to be leading forms of system penetration, typically through social engineering."

Mr Rathour said shipping companies need to plan for cyber-attacks and ensure they can recover. "Plan for the inevitable. It will happen," he said. "Know how to recover, train and make sure it does not happen again." Inmarsat senior vice president for global cyber security Graham Wright said that Inmarsat had implemented high levels of cyber security and personnel training to prevent billions of penetration attempts from getting through. "There are around 50Bn events on our internal systems every month," he said.

Wärtsilä Voyage head of cyber security and technology Paivi Brunou said cyber security was everyone's responsibility and that there needs to be more awareness of the threats and their consequences. "It is all-hands-on-deck for cyber security," she said. People need to be aware of how their errors of judgement can lead to cyber-attacks. "80% of cyber-attacks are not from malicious attacks, but from mistakes we make," said Ms Brunou. Wilhelmsen Group director of security, governance, risk management and compliance Morten Drægni agreed, using the analogy of a cupcake on the floor being like a discarded USB storage device. Mr Drægni said people would not consider picking up and eating the cupcake, but they do pick up USBs and plug them into their computers to view what is on them. "It is important to increase safety culture," he said. "It is not just a tick-off for compliance. It is about improving cyber security, sharing information, learning from mistakes and working together." But according to a survey, cyber security and safety training remains a low priority. When asked about cyber-security awareness programmes in their organisations, 46% said it was once a year, 44% said it was a continuous focus of the company and 10% thought it was two to four times a year. Practical guidance was low-key; in a survey, 18% said

they had participated in cyber-security related table-top exercises, drills or simulations within the past 12 months, with 82% saying they had not.

Five actions to increase a vessel's cyber security

Russian Maritime Register of Shipping (RS) makes the following recommendations when it comes to marine cyber security. First of all, and most important for a shipowner, is to realise that cyber-security risks are absolutely real. No vessel may be considered protected from cyber threats without a relevant analysis and an assessment of the results. Even an old ship that lacks computerised automation systems for propulsion, cargo-handling operations, etc may be vulnerable, bearing in mind there are ECDIS, AIS and other onboard equipment made compulsory under international conventions.

Therefore, the shipowner is recommended to:

(1) Assess the cyber-attack and cyber-incident risks to provide uninterrupted service of its shore-based divisions and ships in compliance with SMS risk assessment procedures and identify vulnerable data and resources and risk mitigation measures.

(2) Provide adequate resources (time, human resources, financial) for the implementation of the measures identified.

(3) Define personnel solutions on cyber-security management and embed cyber-risk awareness culture at all levels, including top management, through relevant training.

(4) Develop specific measures for cyber-attack detection, response, consequence minimisation and recovery of the attacked objects and system operability.

(5) Periodically verify and assess the entire cyber-security management system.

In order to assist stakeholders, mitigate ship cyber-attack vulnerability and help implement IMO Resolution MSC.428(98), RS has published Guidelines on Cyber Safety. The document provides recommendations on the design, manufacture, maintenance and testing of shipboard computer-based systems, as well as recommendations applicable to the safety management systems.

Source: riveramm.com; 05 April 2021

MARINE ENVIRONMENT

RED FLAG: PREDATORY EUROPEAN SHIPS HELP PUSH INDIAN OCEAN TUNA TO THE BRINK

- Malavika Vyawahare

- *The Indian Ocean yellowfin tuna stock is teetering on the verge of collapse and some experts say the EU, which has profited the most from the fishery over decades, should do more to save it.*
- *EU-controlled ships, including those flagged to smaller coastal states like Seychelles, haul in the lion's share of Indian Ocean tuna, supplying a market worth billions of dollars.*
- *Overfishing by these vessels, and the EU's less-than-ambitious proposal to restore the yellowfin stock, has led to allegations of a "neo-colonial" plunder of resources that many developing nations depend on.*
- *This is the first story in a two-part series about the effect European tuna fishing has on the economy and marine environment of Seychelles, an archipelagic nation in the Indian Ocean.*

Until Jan 9, 2014, the Playa de Anzoras, a 2,200-ton tuna fishing vessel named for a beach in Spain, built in Spain and owned by Spaniards, sailed under the Spanish flag. On Jan. 10, it dropped the Spanish flag in favor of that of Seychelles, a small archipelagic nation in the Indian Ocean. Neither Spain nor continental Europe share a coast with the Indian Ocean, where Playa de Anzoras operates. Yet the European Union dominates tuna fisheries here and profits the most from it. This dominance is, in part, explained by ships like the Playa de Anzoras, which is flagged to Seychelles but ultimately controlled by European companies, according to records reviewed by Mongabay. EU-controlled ships have pulled in the lion's share of the region's valuable yellowfin tuna (Thunnus albacares) for more than three decades. Now, the stock is teetering on the verge of collapse. A plan to stop overfishing and restore it has failed. This March, talks on the issue ended in a stalemate. The EU wants other members of the Indian Ocean Tuna Commission (IOTC), the intergovernmental agency charged with managing tuna fisheries in the region, to be subject to greater restrictions, while some observers point to the EU's own failure to play by the rules and save a stock that it profits so greatly from. The Indian Ocean is ringed by developing countries, many of which have only in the last century gained independence from European colonial rule. Some see EU states' grip over resources like tuna as the persistence of an exploitative relationship. "The attitude of the EU is hypocritical and neo-colonial," Nirmal Shah, chief executive of the nonprofit Nature Seychelles and former head of the Seychelles Fishing Authority (SFA), told Mongabay. "You have some of the richest countries in the world overfishing and they are blaming poorer countries."

Leaving 'trinkets' for a 'treasure'

Tuna fisheries are lucrative, feeding a market worth billions of dollars. The Indian Ocean is the second most productive tuna fishery in the world, and most of this tuna is caught in the western Indian Ocean. In 1982, the U.N. recognized states' sovereign rights to marine areas 200 nautical miles (370 kilometers) from their coasts, creating exclusive economic zones (EEZs). Seychelles, a fledgling nation that won independence from the U.K. in 1976, stood to benefit immensely. Between them, the 100 or so islands scattered just south of the equator in the western Indian Ocean carve out an EEZ of 1.37 million square kilometers (530,000 square miles), three times the size of California. Seychellois waters are a prime spot for tuna fishing, with yellowfin, bigeye (Thunnus obesus) and skipjack (Katsuwonus pelamis) being the major catches there. As tuna fisheries' profitability in the Atlantic Ocean declined, European nations like Spain and France sought new fishing grounds. The formation of EEZs forced these countries to enter into agreements with poorer coastal states to feed the continent's growing appetite for seafood. (The EU is second only to China in seafood consumption.) "We have this amazing orchard of apple trees, and right now we do not have ladders to climb to them and collect the apples," is how Jeremy Raguain, who works for the Seychelles Islands Foundation, described it. "E.U. and other countries, which have very advanced technology and ships, say: 'look, we have the ladders to take these apples that you would not otherwise be able to get.'" In the western Indian Ocean, the European Economic Community (EEC), the precursor to the EU, struck deals with Madagascar and small island nations like Seychelles, Mauritius and Comoros, which didn't have the financing or technical capacity to harvest their own marine resources at a commercial scale, partly due to decades of colonization. Spain signed a pact with Seychelles in 1983 allowing its ships to fish migratory species like tuna in Seychellois waters, and the first Spanish purse seiners started operating there in 1984. But with its entry into the EEC in 1986, Spain's fishing activities, like those of France, became subject to agreements between the EEC and Seychelles.

These agreements have long been criticized as disadvantaging the smaller, poorer countries. There are direct benefits for states like Seychelles. Fishing access fees are an important source of revenue for the country. Under the latest agreement with the EU, this amounts to 5.3 million euros ($6.3 million) annually. EU ship owners also pay about 80-85 euros ($97-$102) per ton of tuna. You can buy canned yellowfin for about $17 per kilogram on Amazon. A ton of tuna — 1,000 kilograms — would cost $17,000 at that price. "Yes, they bring in some money, yes they give us license fees. But look at what they give us compared to the profits that these people make," Shah said. "They give us trinkets for our treasure." Canned or pouched yellowfin tuna caught by purse seine vessels in the Indian Ocean brings in $1 billion every year from customers, according to an analysis by The Pew Charitable Trusts, a U.S.-based policy research group. Almost 80% of this tuna is caught by European-controlled vessels. These vessels are mostly purse seiners, some of the world's largest industrial fishing boats. They deploy seine nets, up to 2 km (1.2 mi) in length if laid out flat, which encircle the fish school and squeeze shut at the bottom like a drawstring purse.

A net spread across oceans

There are 15 Spanish-flagged and 12 French-flagged purse seine vessels currently authorized to fish in the Indian Ocean. On paper, Seychelles has a purse seine fleet

operating in the Indian Ocean that rivals that of Spain, the EU's biggest fishing nation. But the entire fleet of 13 vessels that fly Seychelles' flag is effectively in European hands. EU records and other fishing agreements reveal that Pesquería Vasco Montañesa SA (Pevasa), a founding member of Spain's Pevaeche Group, owns Playa de Anzoras. Albacora SA owns four other Seychelles-flagged vessels, S. Echebastar owns three, Inpesca owns two, and Atunsa, one. All these companies are based in Spain's Basque Country, a traditional stronghold for the fisheries industry in Europe. French company SAPMER SA, controls the remaining two vessels in the Seychellois fleet. It also owns three boats that make up the entire purse seine fleet of Mauritius, another small island-nation in the western Indian Ocean. The Albacora group, which has four vessels in the Seychellois fleet and annual revenues exceeding $100 million, is a major player in tuna fisheries. It owns vessels, canneries and tuna marketing companies. From its start as a family-run outfit in the early 1970s in Spain, it now operates in the Atlantic and Pacific oceans, in addition to the Indian Ocean where it has vessels flagged to both the EU and Seychelles.

Using a flag of convenience is a widespread but controversial practice. It allows vessel owners to save on taxes, bypass labor regulations, and avoid tougher oversight and increasingly stringent environmental checks that their own countries may require. For the first time, the EU–Seychelles agreement signed last year set aside about 175,000 euros ($209,000) a year to be paid by EU purse seine vessel owners toward an environmental fund. It also seeks to phase out the use of harmful fish aggregating devices, or FADs, fishing aids that have contributed to overexploitation of yellowfin populations. But provisions under the agreement don't extend to the Playa de Anzoras or the 12 other Seychelles-flagged ships, even if their beneficial owners, the ones that ultimately profit from the ships, are European.

While EU records list Spanish company Pevasa as the owner of the Playa de Anzoras, IOTC records identify the ship's owner as Sea Breeze Ventures Limited, based in the Caribbean nation of Belize. This company, per the D&B Business Directory, has one employee. While the connection between Pevasa and Sea Breeze remains unclear, it bears the hallmarks of a common arrangement in the fisheries industry in which a larger established company, the beneficial owner, sets up one or more companies in a tax haven as nominal owners of its fleet or a portion thereof for business purposes. All the Spanish-backed Seychellois vessels appear to have nominal owners headquartered in jurisdictions like Belize that regularly feature in the EU's list of tax havens. Neither Pevasa nor the other European companies that own Seychelles-flagged purse seiners responded to attempts by Mongabay to seek a comment for this story. A ship's flag determines which country is responsible for the vessel, and in the case of yellowfin tuna, which country's quota its owners can exploit. By sailing under the flag of a small island nation with a nominal owner based in a fiscal paradise, a ship can maximize profits and minimize regulatory oversight. "The use of flags of convenience is a loophole," said Vanya Vulperhorst, a campaign director at the European office of the NGO Oceana, headquartered in Washington, D.C. "It's a way to circumvent EU requirements." "It is really an oversight if you are trying to get more sustainable fisheries," she added.

Yellowfin tuna in the red

Indian Ocean yellowfin tuna is not only one of the world's most profitable fisheries; it is also one of the most threatened. The stock could collapse as soon as 2026, according to an assessment the IOTC commissioned. The tuna management agency has 31 members, including local parties like Seychelles, and others like the EU, China and Japan that operate distant-water fishing fleets in the region. In 2016, the agency launched a yellowfin rebuilding plan, which required member states to reduce their purse seine catches by 15% from their 2014 levels. An IOTC report from 2021 found that EU-flagged purse seiners overfished yellowfin tuna in 2017 and 2018, after the rebuilding plan was implemented. "Everybody has an equal responsibility to abide by their quotas," said Glen Holmes, a fisheries expert with The Pew Charitable Trusts. "But the EU as a well-resourced country block has a moral obligation to set the highest standard."

The Seychelles-flagged purse seine fleet also exceeded its yellowfin quota in 2017 and 2018. Being a small island developing state, a special status under the U.N., Seychelles was allowed to choose the baseline year upon which to calculate its target quota. Instead of 2014, when its catch was only 23,463 tons, it chose 2015, when its catch stood at 39,072 tons. This resulted in a much higher target quota under the rebuilding plan — another advantage for European-owned vessels flying the Seychellois flag. Mauritius is also recognized as a small island developing state and chose 2018 as its baseline year, when its catch was 11,322 tons, as opposed to 2014, when its fleet caught only 4,844 tons of yellowfin tuna. As a result, its purse seine fleet is today allowed to catch about 10,500 tons of tuna, more than double what it was catching in 2014. Christopher O'Brien, the IOTC's executive secretary, told Mongabay that catch limits for the following year are lower for fleets that overshoot their catch limits but there are no other penalties for breaching them. Experts argue that even the present catch reductions are not enough to save the stock.

"The yellowfin tuna stock rebuilding plan put in place by the IOTC in 2016 has, thus far, failed to reduce catches from the baseline at all, let alone by the 25 percent necessary to save the stock from collapse," a 2020 Blue Marine Foundation report authored by Jess Rattle concluded. The rebuilding plan's failure has prompted the IOTC to hold a series of special meetings to build consensus around measures to curb overfishing. At a meeting held this March, the EU proposed that catch reductions for purse seiners increase marginally from 15% to 18%. The Maldives, another small island nation, is pushing for more: a 35% cut for purse seiners from developed countries and 28% from developing countries. "The European Union proposal is less ambitious," Holmes said. "There is less change involved in the EU's proposal than there is in the Maldives' one. The Maldives' proposal will almost certainly reduce the overall catch to a level that will reduce or prevent overfishing." Julio Morón Ayala, managing director of OPAGAC, which represents the Spanish tuna fishing industry, including Albacora, told Mongabay in an emailed response that his organization wants fleets of IOTC member countries that are currently exempt from reductions to also be subject to catch cuts. "Since 2016, IOTC regulation has established a larger cut on the purse seine gear (15%) compared to others (10-5%) and exempting most of the Coastal countries," Ayala said. "So, the EU has and is taking a major cut on the yellowfin catch, but the final result is that others gears had increased their catch offsetting the reduction achieved."

The countries currently exempt from cuts are almost all developing Indian Ocean countries, including Yemen and Madagascar, some of the world's poorest nations. Most do not operate industrial fleets but rather small-scale fisheries in their own EEZs that largely supply local populations. None of the individual countries' shares of the yellowfin tuna catch is anywhere close to the EU's. But the combined share of this dozen or so countries has grown in the past few years. Experts say that in the absence of proper enforcement, illegal fishing activity will also deplete fish stocks in the region.

Regulatory gray zones

Even if the quotas are reduced, enforcing them will still be difficult. The IOTC relies on self-reporting by member states to track catches, so transgressions are hard to pinpoint independently. In 2018, a discrepancy in Spain's catch reports came to light only after Blue Marine Foundation flagged it. The IOTC later confirmed that Spain underreported its yellowfin tuna catch by 30% that year. The ability of Seychelles, a small coastal state whose total government revenues stand at around $400 million, to police multimillion-dollar companies with beneficial owners abroad is questionable, as suggested by the Seychellois fleet's involvement in overfishing yellowfin. An IOTC report found poor training and a lack of support for the country's observer program, where personnel board ships to collect data and monitor their practices. The program is partly funded by the industry. "Operators can choose freely where to register their vessels," the EU's Office for Seychelles and Mauritius said in a statement in response to Mongabay's questions about ships using flags of convenience. The office becomes concerned only if vessels change flags regularly to "escape obligations or circumvent their quota." Since many of the vessels have flown the Seychelles flag for several years, it doesn't qualify as abusive, the statement said.

"Seychelles has to exercise its flag state responsibilities on their fleets and report on their compliance records to the RFMOs [regional fisheries management organizations] covering their EEZ," it added. The Seychelles Fishing Authority and the ministry of fisheries did not respond to several attempts by Mongabay to seek comment. The ship owners view the arrangements as investments and point to the benefits they offer to coastal states. "Since our operations started back in the 60's, some companies not only invest in coastal countries through fleet, but through tuna processing plants inland." Ayala from OPAGAC said in his email. "In the Indian Ocean, the EU fleet operating since 1987, has developed the tuna industry in Seychelles, Mauritius, Madagascar and Kenya, where more than 15,000 direct employments depend on the tuna operations." However, foreign workers are overrepresented in this sector. Of the roughly 2,000 employees at Indian Ocean Tuna Ltd. (IOT), the largest cannery in Seychelles, for instance, almost 70% are foreigners. The Thai Union group that owns the cannery supplies some of Europe's leading seafood brands, including John West, Petit Navire, Parmentier and Mareblu.

Fishing overseas, under the radar

It isn't just the ownership of the Seychellois purse seine vessels that is shadowy; they often operate under the radar. A recent analysis showed that, in violation of international law, most of the Spanish-controlled tuna purse seine vessels did not continuously transmit their locations via the automatic identification system (AIS). AIS, which tracks vessels through their unique alphanumeric signature, allows

seafarers to map out other ships' locations and aids navigation. But it is also central to coastal states' ability to monitor vessels' activity to ensure they are not entering protected areas or fishing where they are not supposed to. The analysis, by the U.K.-based NGO OceanMind compiled by Blue Marine Foundation, looked at AIS use by tuna purse seiners over 850 days between 2017 and 2019 in the western Indian Ocean. It revealed low rates of AIS transmission for both Spanish-flagged and Seychelles-flagged ships. The Playa De Anzoras transmitted its location for less than 40% of the 850-day period. It did better than most. The Artza, owned by Atunsa, did not transmit its location at all. For the nine remaining Spanish-controlled ships, the figure ranged between 3% and 33%. The numbers were similar for the 14 Spain-flagged ships considered in the report.

Subsidizing unsustainable fishing

The fact that these ships' beneficial owners are based in Europe also allows them to profit from EU fishing subsidies. Between 2000 and 2010, Spain's global fishing industry received more than $8 billion in subsidies. The Albacora group has benefited from subsidies not just from the EU but also from the Spanish government. Critics say such state subsidies allow unprofitable fishing to remain viable and lead to overfishing. The EU has continued to subsidize fisheries over the years, while trying to purge those that lead to overexploitation. Reports that the EU is seeking to reintroduce allegedly harmful fishing subsidies as part of the European Maritime and Fisheries Fund have sparked alarm.

"Between 2021 and 2027, around seven billion euros of public money will be injected into the ocean economy. However, countless studies and reports show that the vast majority of the fund is used to encourage overfishing and fuel the demise of nature at sea," a group of more than 100 scientists wrote in an open letter published in November 2020. It has also raised concerns in Seychelles, whose fisheries sector is greatly impacted by the EU's actions. "For us in the Western Indian Ocean where 40 percent of the E.U. catch of tuna comes from, this may mean the end of our tuna stocks," Shah told local news agencies. He told Mongabay in an interview in March that the EU's reputation was being "sullied" because of the actions of two countries: Spain and France. "It is not even two countries but the private companies in two countries of the EU being supported, defended and paid for by the EU," he said.

Tuna and profits flow out

European interests dominate Indian Ocean tuna fisheries not just in terms of supply but also demand. Almost all of the processed tuna from Seychelles, Mauritius and Madagascar is exported, and the exports are largely destined for the EU. Canneries in those countries are all supplied by the European industrial purse seine fleet. The mainly European shipowners are assured a "captive market" for their catches, a 2017 report from the EU think tank IDDRI found.

These tuna exports have duty-free access to European markets under economic partnership agreements, saving them from a 24% tariff. "Under the rules of origin that are part of the agreements, the canneries in Seychelles, Mauritius and Madagascar can use only fish caught either by their fleets or by the EU fleets," Liam Campling, an expert on global trade centered on tuna fisheries, at the Queen Mary University of London, said. "The rules of origin have been a massive support to the EU distant water

fleet because it means they have a locked-in market." Since almost all the tuna comes from EU-controlled ships, it is unclear how the three countries benefit from these tax breaks. "If the Europeans really wanted to deal with the problem of yellowfin, they can," Campling said. "but they don't want to take the economic hit."

In some ways, the biggest cannery in Seychelles, Indian Ocean Tuna Ltd. (IOT), embodies the unequal relationship around tuna that has become entrenched between some Indian Ocean countries and the EU. It is owned by Thai Union/M.W. Brands, a Thailand-based leading supplier of canned tuna. It buys tuna almost exclusively from EU-owned ships, sends most of its tuna back to the EU duty-free, and employs mostly foreigners. Tuna and the money to be made from it leave Seychelles every year and it's not clear if the country's gains outweigh its losses. What is certain is that those gains are themselves in jeopardy. "If the worst were to happen and fish stocks decline to a point where we couldn't fish anymore, the EU purse seine fleet could almost certainly go to a different ocean to fish," says Rattle of the Blue Marine Foundation, "whereas the coastal states left behind, they can't go anywhere else, so they will just be stuck with no fish." For Shah, too, it isn't just immediate economic gains that are at stake. "Is it right for you, no matter how much money you make, to destroy our natural resources?" he asked. "What will happen to future opportunities for Seychellois?"

This is the first story in a two-part series about the effect European tuna fishing has on the economy and marine environment of Seychelles, an archipelagic nation in the Indian Ocean.

Source: mongabay.com; 08 April 2021

PROTECT POPULOUS COASTLINES TO FIGHT CLIMATE CHANGE, SCIENTISTS SAY

- Lou Del Bello

An ocean protection strategy that targets densely populated coastal areas, rather than ringfencing the most remote corners, could deliver game-changing climate benefits. It could also increase food production and restore the biodiversity of fragile ecosystems, scientists have said. An international team of 26 researchers found seabed dredging currently poses a particular danger. Dredging disturbs marine sediments, releasing the organic carbon stored underground. This leads to carbon dioxide build-up and acidification. Putting a stop to just this form of fishing would prevent up to one billion tonnes of carbon emissions annually. This is equivalent to the total CO2 emissions from the aviation industry and about 2.5% of total global emissions.

A combination of new protected areas along populated coastlines, free from human interference, and more sustainable fishing practices would also restore key biodiversity hotspots and increase fish catch. Healthier fish and larvae would naturally spill over into unprotected waters, the researchers wrote in a study published in the journal Nature.

'Triple win solutions for ocean management'

"Food, biodiversity and climate change are the three defining challenges of our time," said author Boris Worm, a biology professor at Dalhousie University in Canada. "So we asked, how can we use ocean protection more intelligently, to cover all three objectives at the same time?" Alex Rogers, science director at the REV Ocean foundation and senior research fellow at the University of Oxford, who was not involved in the study, said the paper "confirms the growing belief among marine scientists, conservationists and those involved in sustainable blue economic activities that there are triple-win solutions for ocean management." The researchers, he explained, looked at models of how marine protected areas can be used to preserve biodiversity, fisheries and carbon stocks in the ocean. "They then combined these models to look at potential trade-offs [from] favouring one particular driver over another, or by considering all three. The results demonstrate that regardless of your viewpoint, current levels of marine protection are wholly inadequate."

Managing ocean protection comprehensively

Currently, 7% of the global ocean is under some form of protection, "but only 2.3% is preserved in a way that strongly enhances biodiversity and food production," Worm explained. "But now we're pivoting towards some of the most overfished, most heavily used places on the planet, because this is where we can get the most increase both in species diversity and food benefits." According to the study, in total countries can protect up to 70% of the ocean without harming fisheries. "And they will actually do a lot better than how they do today, where they have access to more than 95% of the ocean," Worm said. Places that have experienced overfishing like India, he explained, will be even better candidates for such change, because they have huge room for improvement. "It is high time that we extend this [holistic] perception and approach to our own vulnerable marine ecosystems in the Indian Ocean," said Roxy Mathew Koll, scientist at the Indian Institute of Tropical Meteorology in Pune, and a lead author for the latest UN climate change report on the state of the oceans and cryosphere. For example, he said: "We have a handful of coral reefs in the north Indian Ocean that are under constant threat due to climate change and direct human activities such as coral mining and fisheries."

Coral reefs occupy only 0.1% of the Earth's surface but are home to 25% of all marine life, and "though fish move around across the ocean, many of them spawn around these delicate ecosystems," Koll added. "Hence it is urgent that we have strong laws for marine ecosystem protection."

While the study's model proves that increasing the number of highly protected areas yields results for coastal economies in the long run, a big question remains: "Do we have the luxury [to implement these changes] in populous areas such as the Bay of Bengal countries, which are thronged with a range of challenges and where communities are very poor?" asked Aaron Lobo, a Goa-based marine scientist and member of the IUCN Marine Conservation Committee.

Very often, when it comes to protected areas, local communities are excluded from the decision-making process, he explained. The "no-take" marine reserves, which are covered by the strictest protections, are the most effective tools to restore biodiversity, he conceded, but implementing them "is not the easiest thing to do, particularly in South and Southeast Asian countries, even though it is very important." Drastic

changes are difficult to enforce in countries with poor governance and remote areas that are hard to monitor and where illegal fishing is rife, Lobo explained.

"The devil is really in the detail," he said. "The paper presents a global picture, but then you need to scan the regional and local context." This involves designing specific interventions that involve local communities from day one and guarantee long-term benefits, particularly to the most marginalised.

Lobo's concerns were echoed by Dipani Sutaria, marine ecologist and project lead at the Save Our Seas Foundation. "The Arabian Sea and the Bay of Bengal are biogeographically and ecologically very rich; at the same time geopolitically very difficult to collaborate for international resource-sharing and biodiversity protection in areas that overlap," she said. More importantly, "being one of the most densely populated regions on the development trajectory, suddenly bringing about a top-down approach to slow down or stop ecosystem services such as fisheries, would not go down well in our area," she cautioned. "What our countries need to take from the paper is to accept that we are at the brink and we need to stop taking our resources and our climate for granted."

Source: chinadialogueocean.net; 06 April 2021

BIMCO SUPPORTS GLOBAL SEABED MAPPING INITIATIVE

Knowing the depth and shape of the seafloor (bathymetry) is fundamental for our understanding of ocean circulation, tides, sediment transport and environmental change. Currently, and despite many years of effort, less than 20 per cent of the ocean seafloor has been mapped. Therefore, BIMCO supports the Seabed 2030 initiative and encourages the industry to contribute with input into the project via an online survey. In addition to the importance of fundamental knowledge of the seafloor, from an industry point of view, seabed mapping is equally important for infrastructure construction and maintenance, cable and pipeline routing and – of course – navigating our ships. A co-ordinated international effort is needed to bring together all existing data sets and to identify areas for future surveys – in other words, to 'map the gaps'.

BIMCO supports the Seabed 2030 initiative, which is a collaborative project between the Nippon Foundation of Japan and the General Bathymetric Chart of the Oceans (GEBCO), operating under the joint auspices of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The project aims to bring together all available bathymetric data to produce the definitive map of the world ocean floor by 2030 and make it freely available to all. Initial efforts will focus on mapping the 93% of the ocean deeper than 200 meters, leaving national hydrographic agencies to cover waters closer to shore. The project was launched at the United Nations (UN) Ocean Conference in June 2017 and is aligned with the UN's Sustainable Development Goal #14 to conserve and sustainably use the oceans, seas and marine resources. https://seabed2030.org/

Completing a modern map of the seafloor will be a turning point in our understanding of oceanic processes and resources, providing a major change in our ability to sustainably manage our oceans and marine hazards. The Seabed 2030 project is seeking views from across the marine and maritime sector via an online survey. The aim is to corroborate – or challenge – existing thinking, and hopefully identify any areas of the seabed that may benefit from a more collaborative approach.

Source: BIMCO; 08 April 2021

GEOPOLITICS

EXPLAINED: WHY HAS SAUDI ARABIA RAISED OIL SHIPPING COSTS TO ASIA?

- Karunjit Singh

Saudi Arabia's national oil company Saudi Aramco has raised the price of oil shipments to Asia by between 20-50 cents per barrel, raising the total cost of Arab light crude for key Asian importers such as India to $1.8 over the benchmark price. Saudi Aramco hasn't raised shipping prices for northwestern European customers however and has even cut shipping prices for US customers. The move comes on the heels of a decision by the OPEC+ group of oil-producing countries to raise crude oil production by about 2 million barrels between May and July.

Why raise shipping prices for Asia?

Experts noted that the hike may be a signal to India, which has been looking to diversify supplies away from Saudi Arabia, that there are concerns besides the simple price of crude that can affect the landed price of crude for an importer. India's state-owned oil marketing companies are set to cut imports from Saudi Arabia in May in response to Saudi Arabia maintaining production cuts aimed at keeping oil prices elevated through April. Vivekanand Subbaraman, analyst at Ambit Capital, said, "This incident shows that there is not just the price of crude, but terms like shipping and flexibility of contracts which producers can push back on if importers try to diversify their source of supply." Experts also noted that the hike in shipping prices coupled with the relaxation in production cuts could help save face for Saudi Arabia, a leader of OPEC, and India, a key importer of crude oil, after public disagreements between the two countries on crude oil production levels.

Why are state-owned OMCs planning to cut imports from Saudi Arabia?

OPEC+, a group of 23 major oil-producing countries that had cut crude oil production levels during the peak of the Covid-19 pandemic as the price of Brent crude fell to below $20 per barrel, had decided to maintain lower production levels through April despite crude oil prices recovering to pre-pandemic levels. A consistent rise in crude oil prices has contributed to auto fuel prices reaching record highs in India as it imports over 80 per cent of its crude oil requirements. Saudi Arabia alone had extended a 1 million barrel per day production cut through April, contributing to elevated crude oil prices. Saudi Arabia is now planning to reverse its production cut in three phases between May and July. Petroleum minister Dharmendra Pradhan has repeatedly called on oil-producing countries to withdraw production cuts, noting that high crude oil pieces were slowing down the economic recovery after the Covid-19 pandemic, particularly in developing countries. The price of Brent crude has risen from about $40 per barrel in October to over $64 per barrel as on Monday. In March,

Brent crude temporarily surpassed the $70 per barrel mark. Saudi energy minister Prince Abdulaziz bin Salman had said in response that India should use its strategic petroleum reserves, which were filled with cheap crude in the first quarter of this fiscal. Pradhan had called the comment of the Saudi energy minister "undiplomatic" and said that he disagreed with the approach taken by Saudi Arabia.

How have rising crude oil pieces impacted India?

A consistent rise in crude oil pieces has led to the prices of petrol and diesel reaching a record high level across India, with the price of petrol crossing Rs 100 per litre in some parts of the country. The prices of both petrol and diesel have risen by about Rs 7 per litre since the beginning of the year despite oil marketing companies partially absorbing the impact of higher crude oil prices. Rising crude oil prices have also magnified the impact of central and state taxes on auto fuels which were hiked significantly in 2020 to boost revenues amid lower economic activity. Oil marketing companies have, however, cut the prices of petrol and diesel by about 60 paise per litre over the past fortnight as crude oil prices have come down on the back of demand concerns due to a resurgence of Covid-19 infections.

How important is Saudi Arabia as a source of crude oil for India?

Saudi Arabia has consistently been the second-largest source of crude oil for India after Iraq was displaced by the United States in February. India imported 2.88 million tonnes of crude oil from Saudi Arabia in January according to data collated by the Directorate General of Commercial Intelligence and Statistics. A reduction in crude oil imports from Saudi Arabia would likely lead to increased imports from other gulf countries and the United States according to sources aware of developments. Saudi Arabia will, however, continue to be one of the largest sources for the import of crude oil for India due to its geographical proximity and India's large crude oil requirements.

Source: Indian Express; 08 April 2021

PUTIN OFFERS 'BLANK CHEQUE' TO PAKISTAN

- Kamran Yousaf

ISLAMABAD: When Russian Foreign Minister Sergey Lavrov visited Islamabad last week after a gap of nine years, he had delivered an "important" message to the Pakistani leadership. The message was from President Vladimir Putin. "I came with a message from my president that tell Pakistan we are open for any cooperation, whatever Pakistan needs Russia is ready for it," Lavrov was quoted by a senior Pakistani official, who attended the closed door meeting between the Russian foreign minister and Pakistani authorities, as saying.

"In other words, the Russian president offered us a blank cheque," said the official, who requested not to be named because of the sensitivity of the issue. The official revealed that Putin had conveyed to Pakistan through his top diplomat that Moscow would help Islamabad in any manner. "If you're interested in gas pipelines, corridors,

defence or any other cooperation, Russia stands ready for it," the official quoted FM Lavrov as saying when asked what he meant by "blank cheque". Pakistan and Russia are already working on the North-South gas pipeline project. The two sides had entered into the agreement in 2015 to lay a pipeline from Karachi to Lahore. The project is estimated to cost $2 billion.

The work on the pipeline could not kick off because of possible American sanctions. The two sides, however, recently agreed to approve a new structure that would pave the way for the start of the work. Russia is also keen to revive the Pakistan Steel Mills, which it originally built. Similarly, Moscow has interest in hydroelectric projects. Overall, Russia is thought to be willing to make $8 billion investment in different areas. "It is now up to us to follow up this successful visit," the official said. When asked the possibility of Pakistan acquiring Russian air defence systems, the official said he could not talk about the specifics but Russia had shown willingness to expand the cooperation with Pakistan. At the joint news conference with his Pakistani counterpart, the Russian foreign minister had said Moscow was ready to supply Pakistan with "special military equipment" to enhance its anti-terrorists potential. He, however, did not provide further details.

Relations between Pakistan and Russia have undergone transformation in recent years thanks to the new alignments and strategic realities. The rapprochement between the former Cold War rivals began in 2011 when Pakistan's relationship with the US hit the rock bottom. At that time, a decision was taken to bring a strategic shift in Pakistan's foreign policy. The shift envisaged reaching out to Russia as part of Pakistan's efforts to diversify its foreign policy options. The two countries initially worked quietly to find common ground. The years-long efforts had resulted in the Russian decision to send its troops to Pakistan for the first time in history for joint exercises in 2016. Moscow even overruled the Indian objections over holding joint drills with Pakistan. Since then, the two countries have been regularly holding these exercises and they are looking to further deepen that cooperation.

Pakistan is hoping that Russian President Vladimir Putin would visit the country, something that would complete the Pak-Russia ties from being Cold War foes to friends. In contrast, Russian ties with once its solid ally India are heading in the opposite direction. The two still have good relationship but the usual warmth they expressed earlier have been missing. It was rare that the Indian Prime Minister Narendra Modi did not give audience to a visiting Russian foreign minister. Russia is concerned that Indian tilt towards the US would pose threat to its interests. It was because of these reasons, Lavrov, both in New Delhi and Islamabad, indirectly objected to the grouping of US, India, Japan and Australia. These developments are bringing countries such as Russia, China and Pakistan together.

Source: The Express Tribune; 11 April 2021

ACKNOWLEDGEMENTS

‘Making Waves’ is a compilation of maritime news and news analyses drawn from national and international online sources. Drawn directly from original sources, minor editorial amendments are made by specialists on maritime affairs. It is intended for academic research, and not for commercial use. NMF expresses its gratitude to all sources of information, which are cited in this publication.

Cover Designed by Gayathri Rajesh, NMF Intern.