



MAKING WAVES

Inside this Brief

- **Maritime Security.....p.6**
- **Maritime Forces.....p.13**
- **Shipping, Ports and Ocean Economy.....p.21**
- **Marine Environment.....p.35**
- **Geopolitics.....p.48**

Editorial Team

*Captain (Dr.) Gurpreet S
Khurana
Commander Dinesh Yadav

Ms. Richa Klair*

Address

*National Maritime Foundation
Varuna Complex, NH- 8
Airport Road
New Delhi-110 010, India*

Email:maritimeindia@gmail.com

Acknowledgement: '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.



MARITIME SECURITY



Chinese Nuke Sub Had Docked Too close for Indian comfort

U.S. Coast Guard, Mauritius partner to improve Port Security

Saudi Arabia calls for tougher policies to prevent Maritime Crimes

Coast Guard Commandant Will Stress Maritime Security to Trump Administration

Russia offers unique Port Security system to India

Indian Coast Guard repatriates six fishermen from Sri Lanka

Duterte, Abe agree to enhance Maritime Security Cooperation

PH, Japan boost Maritime Security ties



China's missile deployment in South China Sea completely reasonable:

Expert

Chinese Submarine's Malaysian Port Call Signals Regional Power Shift

Pakistan Likely to Acquire Chinese Nuclear Attack Submarines: NDTV Exclusive

China Won't 'Sit with Arms Crossed' If India Sells Missiles to Vietnam: Chinese Media

Second Kalvari class submarine Khanderi to be launched on January 12

US Navy's 'Night Hunter' Drone ship to stalk Russian Subs

How China is building up its Naval and Shipbuilding capability to rule the Waves

China hands over 2 ships to Pakistan Navy for Gwadar Security



**EU ship levy proposal risks undermining efforts to cut sector emissions:
U.N. agency**

**China pledges support for shipbuilding industry, targets high-end
market**

Korea to set up fund to promote cruise industry

IDRO, Daewoo to found quartet Shipbuilding Company

India looks to Khulna for major investment: envoy

Kenya in deal with Denmark to revamp shipping sector

Profitable Coral Reef Fisheries Require Light Fishing

Sri Lanka's Mega Port city poised to change face of Colombo



MARINE ENVIRONMENT



JN Port holds interactive session along with DG Shipping & JNCH to promote DPD facility

Aircraft carrier cleanup sparks Pollution concerns

A new Pipeline in Canada Could Cause Marine Species to be flooded with noise

Turbulence in South China Sea: India Offers Missile to Vietnam

Recent Loss of Ice in Arctic is One of the Largest in History

India, US hold talks to protect Ocean Ecosystems

The Arctic's Freakishly Warm Winter is Due to Humans' Climate Influence



GEOPOLITICS



Taiwan tries to keep Central American allies away from China

Why do Indonesia, Asean matter to China? The Jakarta Post Columnist

Japan wary of China's push to give names to undersea features close to disputed areas

Is McDonald's a Victim of South China Sea Disputes?

Why China Should Fear India's Arms Sales to Vietnam (Think South China Sea)

Profitable Coral Reef Fisheries Require Light Fishing



Chinese Nuke Sub Had Docked Too Close for Indian Comfort

New Delhi (Sputnik) — Another evidence of heightened Chinese activity not far from India's territorial waters has surfaced. A satellite image shows China's nuclear attack submarine docked at Karachi harbor in May last year. Images in Google Earth point to a Chinese Navy Type 091 'Han' class nuclear submarine that was deployed at Karachi harbor in May 2015. Earlier, the Indian Navy had claimed that China's PLA nuclear submarine was deployed and did a port call at Karachi but never mentioned the time frame of deployment. Government sources told Sputnik that an advanced version of Chinese submarine made a weeklong port call at Karachi.

"PLA nuclear submarine was deployed and did a port call at Karachi. As far as deployment of PLA navy, ships and submarines are concerned, we keep a close eye and monitor their movement. We launch surveillance missions in the form of aircraft and ships to keep a track of them," Indian Navy Chief Admiral Sunil Lanba had said in December 2015. The May 2015 deployment comes barely six months after the first-ever Indian Ocean deployment of China's Song-class submarine between September and November 2014, and its docking in Sri Lanka's Colombo port.

In case of a maritime conflict in the area, China's energy shipments transiting the Indian Ocean are strategically vulnerable. Through its submarine deployments, China may be seeking to deter its potential adversaries against interdicting its Sea Lines of Communication (SLOC) in the Indian Ocean," says Captain Gurmeet S Khurana, Executive Director at National Maritime Foundation. This period of deployment at Karachi may be to showcase the submarine to Pakistan Navy before finalizing the deal to purchase eight submarines from China. These submarines are equipped with Sterling AIP system, which the Chinese claim is more efficient than the AIP systems currently available in the world. "The deployments also likely to familiarize the PLA Navy with the new operational environment in the Indian Ocean, train them for distant missions, collect intelligence, and collate hydrographic data specific to the Indian Ocean, which is essential for future submarine operations in the region," Khurana added.

Source: sputniknews.com, 6 January 2017

U.S. Coast Guard, Mauritius partner to improve port security

SINGAPORE — A U.S. Coast Guard International Port Security team completed a bilateral engagement with Mauritius government port officials in November 2016. This engagement involved sharing best practices and visiting Mauritius Port Authority to observe the implementation of the International Ship and Port Facility Security Code at Port Louis. Mauritius became signatory to the ISPS Code in 2004. "Every port stakeholder in every country has security responsibilities in our interconnected global economy," Lt. Cmdr. Darain Kawamoto, liaison officer, U.S. Coast Guard Marine Detachment Singapore. "The U.S. Coast Guard appreciates Mauritius' invitation and their commitment to improving port security."

According to the office of the U.S. Trade Representative, U.S. imports from Mauritius totaled \$58 million in 2015. The three largest import categories were mineral fuels totaling \$24 million, machinery totaling \$7 million, and electrical machinery totaling \$5 million. Additionally, in 2015, the U.S. exported more than \$395 million in goods to Mauritius. In 2003, the U.S. Coast Guard developed the International Port Security Program to reinforce the implementation of the ISPS Code. The IPS program seeks to reduce risk to U.S. maritime interests, including U.S. ports and ships, and to facilitate secure global maritime trade. Under the auspices of this program, a U.S. Coast Guard international port security team conducts an annual visit to assess the effectiveness of seaport anti-terrorism measures and provides recommendations to government officials to reduce the risk of a maritime security incidents and impacts to the global supply chain. The ISPS program is designed to assist seaports in overcoming security challenges in a dynamic and ever changing threat environment.

In the Asia-Pacific region, the U.S. Coast Guard's Activities Far East unit coordinates with over 40 countries to execute these bilateral engagements. The U.S. Coast Guard is committed to promoting and facilitating safe and secure maritime trade.

Source: www.dvidshub.net, 10 January 2017

Saudi Arabia calls for tougher policies to prevent maritime crimes

JEDDAH: Saudi Arabia's efforts to promote regional and international cooperation to achieve security and maritime safety are the focus of a conference taking place here. Delegates also explored the piracy threats off the coast of Somalia and their impact on other maritime crimes. In his inaugural speech at the event, Vice Admiral Awwad bin Eid Al-Balawi, director general of Border Guards, stressed the need for a legal framework to combat maritime crimes, illegal fishing and the smuggling of weapons, explosives and drugs.

The Saudi Interior Ministry, represented by the General Directorate of Border Guards, is hosting the conference at the Mohammed bin Naif Academy of Marine Science and Security Studies in Jeddah. The official reiterated Saudi Arabia's commitment to the International Maritime Organization's (IMO) Djibouti Code of Conduct, which aims to combat piracy and armed robbery in the western Indian Ocean and Gulf of Aden. Chris Trelawny, IMO's special adviser on maritime security and facilitation, also highlighted the importance of the code in his speech. The code provides for sharing of piracy-related information, through its information sharing network. Nineteen countries that have signed up for the code endorsed Saudi Arabia's election as the chairperson of the conference. Observers from various countries and organizations are also taking part in the event, which ends on Thursday.

Al-Balawi thanked Crown Prince Mohammed bin Naif, deputy prime minister and minister of interior, for the confidence given to the Border Guards to host such importance events. He also thanked Deputy Crown Prince Mohammed bin Salman, second deputy premier and minister of defense. There is consistent effective partnership between Saudi Arabia and the International Maritime Organization on issues concerning the Djibouti Code of Conduct, Al-Balawi said. He called for effective measures to curb the risks posed by terrorist organizations and armed militias in light of the security and political situation prevailing in some regional countries.

In his speech, Al-Balawi also highlighted Saudi Arabia's achievements in its battle against terrorism. He praised the code of conduct and its role in fighting piracy and armed robbery in the western Indian Ocean and the Gulf of Aden.

The first day's sessions discussed the trends and features of maritime crimes in the western Indian Ocean and Gulf of Aden. The participating delegations will also visit the Western Fleet Command of the Royal Saudi Naval Forces, the Jeddah Islamic Port and the Border Guards' Center of Search and Rescue Operations.

Source: www.arabnews.com, 11 January 2017

Coast Guard Commandant Will Stress Maritime Security to Trump Administration

John Grady

The Commandant of the Coast Guard will stress maritime security – particularly south of the border – in future discussions with the incoming Trump administration. “Out there we can play offense” in stopping illegal migration and drug trafficking, Adm. Paul Zukunft said during the Surface Navy Association 2017 meeting in Crystal City, Va. “Our borders begin there.” Zukunft pointed to the bilateral agreements the Coast Guard has with 61 nations allowing it to assist in law enforcement operations far from American shores or land borders. “We have great autonomy” to interdict narcotic trafficking or the flow of migrants fleeing poverty and crime in Central America. He termed it as a break down in the rule of law and the push-pull of migration. “We are going to be a country of destination,” he said The Central American nations where cocaine lands in bulk – primarily from Colombia, Bolivia and Peru recognize they need maritime enforcement. Conviction rates in one Central American country for drug smuggling was two percent, contrasted with 99 percent conviction rate if the smuggler is tried in the United States Retired Marine Gen. John Kelly – who is expected to be confirmed as Secretary of Homeland Security – served as the head of Southern Command before leaving active duty and testified regularly on the Coast Guard's role in border security, especially emphasizing drug interdiction. As an organization, the Coast Guard falls under Homeland Security.

Zukunft noted National Security Cutter USCGC *Hamilton* in its maiden cruise interdicted more than 26 tons of cocaine and rounded up about 100 smugglers. He said the service is looking at investing more in small-unmanned aerial vehicles, such as Scan Eagle, to improve its intelligence, surveillance and reconnaissance capabilities. Stressing he is not looking for a UAV to fire Hellfire missiles, these types of UAVs stay aloft for a long time and cover a wider spectrum. “You can't burn those [helicopter] flight crews doing ISR.” He added that he is also looking at investing in

new vessels working the inland waterways For its icebreaking fleet, the United States needs six vessels — three heavies and three mediums. The only vessel now capable of breaking the thickest ice in the Arctic is a Russian nuclear-powered vessel. A more troubling sign, Russia plans to deploy two corvettes capable of firing cruise missiles to the polar seas next year. Russia has largest coastline of any Arctic nation. Despite that expected move, “we still need the opportunity to have dialogue” and the Arctic is one area where that is possible with Russia.

Source: news.usni.org, 11 January 2017

Russia offers unique port security system to India

GANDHINAGAR, January 11. /TASS/. Russia offers a unique port security system to India. An agreement on setup of such a system in the port of Krishnapatnam may be signed already this year, Deputy Chief Executive Officer of Morinformsystema-Agat Artyom Cherepanov told TASS on Wednesday.

"Our concerned signed a letter of intentions last summer. A trilateral cooperation agreement was signed at the BRICS summit last October. We started from developing a security system for the port of Krishnapatnam and expect the final agreement will be signed this year," Cherepanov said. The system developed by Russian specialists makes possible to control everything that takes place under water in the port area, including detection of various foreign items and combat divers. This is a new level of anti-terrorist security for ports, the senior manager said. "We are currently discussing details of this project with the Indian part," Cherepanov said. The expected agreement should become a new step in development of relations between the company and India in the non-defense products sphere.

Source: tass.com, 11 January 2017

Duterte, Abe agree to enhance maritime, security cooperation

MANILA –President Rodrigo Duterte and visiting Japanese Prime Minister Shinzu Abe agreed on Thursday to enhance maritime and security cooperation including counterterrorism between the Philippines and Japan. “As proven defense and long time partners, the Philippines and Japan are committed to further expand and deepen our relations across a broad range of areas. We had an active discussion on enhancing of maritime and security cooperation,” President Duterte said in a joint

statement after a summit meeting at the Malacanang Palace. “As maritime nations, the Philippines and Japan have a shared interest in keeping our waters safe and security from threats of any kind,” he added. Abe, along with his wife Madame Akie Abe, is in the country for a two-day official visit that also include a historic visit in Davao City, the hometown of President Duterte, on Friday. As a result of Abe’s first visit in the Philippines under Duterte administration, the Philippines Coast Guard (PCG) and Japan Coast Guard (JCG) signed Memorandum of Cooperation (MOC) which involves the maritime cooperation to promote maritime safety, security and marine environment protection.

The MOC will be done through joint exercises, visits by patrol vessels and aircraft, and capacity enhancement. The Philippines and Japan also signed Exchange of Notes (EN) on the economic and social development grant worth JPY 600 million (PHP258 million) for the purchase of high-speed boats and other counter-terrorism equipment for PCG. “Capacity-building and assets acquisition and upgrading will be a centerpiece of this collaboration. We hope to fast-track the delivery of the Philippines of key assets already in the pipeline and the acquisition of new ones,” President Duterte said. “As we seek these new innovations to the Philippines’ capabilities, we will continue to forge ahead with our efforts to advance the rule of law in order to secure the waters in our regions,” he added. For his part, Abe emphasized the importance of strengthening counter-terrorism mechanism to assure safe and peaceful society. “We will strengthen cooperation in the area of counterterrorism in order to realize a society in which it is possible for youths to entertain hopes,” Abe said through an interpreter.

President Duterte described his meeting with Abe as ‘productive’ where the two leaders discussed ways for further strengthening bilateral ties. “By any measure, this visit is historic and sets the bar for constructive engagements. If my visit to Tokyo defined the solid and strategic partnerships of the Philippines and Japan then Prime Minister Abe’s visits to Manila and Davao renew the commitment to further strengthen the solid and strategic partnership toward greater peace, progress, and prosperity,” Duterte said. “I am humbled by this demonstration of friendship and look forward to working closely with Prime Minister Abe on all matters of mutual interest,” he added. Abe said he looks forward to also further enhance friendly ties between the Philippines and Japan and “to cooperate towards regional stability and prosperity.”

Source: www.canadianinquirer.net, 12 January 2017

Indian Coast Guard repatriates six fishermen from Sri Lanka

Hyderabad: The missing fishing boat, Fahima Faheda along with six Indian fishermen of Andaman and Nicobar Islands was repatriated from Sri Lanka by Indian Coast Guard Ship ICGS Rani Durgavati at International Maritime Boundary Line (IMBL). All crew members were medically checked and are reported to be stable.

According to Coast Guard authorities, after one of the crew members called his relatives on January 5 from Sri Lanka, the Indian Coast Guard in coordination with Indian High Commission at Colombo planned for a repatriation and return of boat from Sri Lankan Navy. The boat was brought by Sri Lankan Navy to the International Boundary, where it was handed over to Indian Coast Guard ship Ameya on January 9. The boat and the crew were brought to Karaikal Port in Puducherry. The boat which sailed from South Andaman on November 27 got trapped into cyclone 'vardah' and adrifted from original course.

The boat will be under the custody and care of Karaikal fisheries authority till the owners make arrangement to take it to their base port at Port Blair post repairs. The Port Blair fisheries administration has deputed two fisheries representatives for making necessary arrangements for repair and planning further passage to Port Blair. During the year 2016, coast guard ships had repatriated a total of 288 fishermen from Sri Lankan authorities.

Source: www.thehansindia.com, 13 January 2017

PH, Japan boost maritime security ties

Metro Manila (CNN Philippines) – Although the Philippines and Japan were bitter enemies during the Second World War, both of them have forged close ties in modern times. Over the years, this has extended to maritime security. On Thursday, both countries signed a Memorandum of Cooperation between the Philippine Coast Guard and the Japanese Coast Guard. The deal aims to enhance maritime cooperation to promote maritime safety, security, and marine environment protection. On the first day of Japanese Prime Minister Shinzo Abe's official visit, his government committed a grant of 600 million yen (around ₹259.8 million) for high-speed boats and other counter-terrorism equipment for the Philippine Coast Guard.

According to defense analyst Jose Custodio, Japan sees the Philippines as a partner not only in terms of economics, but in also in terms of security. "I think both countries want to build a strong relationship with each other. Japan sees the Philippines as an important cog in the entire network not just in economics but now emerging in terms of security also because we also know that Japan has problem with China in matters of territorial dispute," he told CNN Philippines' "Network News" on Thursday. Custodio said Japan specifically aims to build up the Philippines' maritime capability. "The Japanese are very much interested in building up our capabilities... to make us more capable in dealing with issues and concerns in the maritime domain," he said. However, he pointed out these may be limited to monitoring capabilities, such as radar and coast guard vessels. "These are better than what the Philippines has. These are large ships that are capable of going toe-to-toe with the Chinese in the South China Sea area," he added. During a joint press conference with President Rodrigo Duterte at Malacañang, Abe said the South China Sea issue "is linked directly to regional peace and stability and is a concern to the entire international community." "I welcome the fact that President Duterte is making efforts to improve China-Philippine relations in light of the arbitral award," he said.

For his part, Duterte said the Philippines and Japan — as maritime nations — share an interest in keeping their waters "safe and secure from threats of any kind." However, Duterte made no mention of the South China Sea issue. He said capacity-building and assets acquisition and upgrading will be a centerpiece of the collaboration.

Source: cnnphilippines.com, 13 January 2017



Chinese Submarine's Malaysian Port Call Signals Regional Power Shift

A Chinese attack submarine made an unprecedented stopover in Malaysia this week in a rare public display of China's expanding undersea force and a further sign of power realignment in Southeast Asia. The visit came as two Russian warships docked in the Philippines—a U.S. treaty ally—and Moscow offered to sell Manila advanced weaponry in another challenge to longstanding U.S. military relations in the region.

The submarine and a Chinese navy support ship arrived in Kota Kinabalu, site of a naval base facing the South China Sea, on Tuesday and will stay until Saturday, a Malaysian naval official told *The Wall Street Journal*. The official said that it was the first time a Chinese submarine had visited Malaysia and that the two vessels came for rest and recreation. China's Defense Ministry said in a statement late Friday that the submarine stopped in Malaysia for rest and supplies while returning from anti-piracy patrols in the Gulf of Aden and off the coast of Somalia. China has participated in multinational patrols there since 2009. The statement gave no further details.

The last confirmed port visit by a Chinese submarine was to Sri Lanka in 2014, although satellite images suggest some visited Pakistan in the past two years. The Chinese and Russian naval forays into Southeast Asia reflect a reorientation of defense ties in the region—and beyond— as Beijing and Moscow seek to reshape a global security architecture that has been dominated by the U.S. for decades. Malaysia and the Philippines are among several governments that contest China's claims to most of the South China Sea and had bolstered defense ties with the U.S. in recent years in response to Beijing's efforts to enforce its claims.

Chinese naval ships have docked in Malaysia before. But A visit by a submarine is qualitatively different, said Euan Graham, director of the International Security Program at the Lowy Institute in Sydney. "It signifies a higher level of trust involved on the host country's part, because of the sensitive nature of submarine operations, as stealthy war-fighting or reconnaissance platforms," he said.

Source: www.wsj.com, 06 January 2017

Pakistan Likely to Acquire Chinese Nuclear Attack Submarines: NDTV Exclusive

A Chinese Navy nuclear-powered attack submarine which docked at the Karachi harbour in May took aboard Pakistani naval officers and sailors to give them a first-hand glimpse of how the submarine works. This was not a simple case of access being given to a close military ally. The Indian Navy is convinced that it is a matter of time before Islamabad leases a Chinese nuclear submarine. The Pakistan Navy personnel who were on the submarine may be part of their first team to train on Chinese nuclear submarines, it is believed.

On Friday, NDTV broadcast images of an advanced 'Shang' class nuclear submarine which was placed, through a satellite image, at Karachi last year. The images were first spotted by a satellite imagery expert (@rajfortyseven) who posts on Twitter. Displacing 7,000 tonnes when it operates underwater, and armed with six torpedo tubes, the Shang class submarine is part of the latest generation of nuclear attack submarines designed and commissioned by China. The submarine also has the ability to fire cruise missiles - including the Babur missile that Pakistan yesterday claimed to test-fire off its coast, a claim that has been disregarded by the Indian Navy.

Pakistan's acquisition of a 'Shang' class submarine will have an impact on the naval balance in the Indian Ocean, which is currently skewed heavily in favour of the Indian Navy. India's navy is significantly larger and more capable than its regional rival. Unlike conventional diesel electric submarines that Pakistan has been operating for decades, a nuclear attack submarine has practically unlimited endurance. Its nuclear reactor is unlikely to require refueling during the life of the submarine, which means the 'Shang' can theoretically operate indefinitely under water. Even though realistically, it will be limited by the amount of food and supplies it can carry for its crew.

The mechanical reliability of key systems also limits the submarine. The Pakistani acquisition of a 'Shang' class submarine is meant to counter the Indian Navy's 'Akula-2' class nuclear attack submarines which New Delhi has been leasing from Russia. Considered among the most powerful submarines of its class, the Akula-2 - named INS Chakra - has been leased for 10 years and will be returned to Russia within four years, by which time the Navy will have acquired a second submarine of the same class. The terms were recently worked out between the two countries.

Now for the first time, details are emerging on how the Indian Navy has been able to track the movement of Chinese submarines, which first started operating in the Indian Ocean in 2013, a clear signal of how Beijing intends to expand its strategic reach to include areas of the Indian Ocean which New Delhi has typically considered its own backyard. The Chinese 'Shang' class submarine, which docked in Karachi, entered the Indian Ocean through the Malacca straits off Singapore between April 19 and 20. Picked up almost immediately by the Indian Navy's US-made Boeing P8-I maritime surveillance aircraft, the submarine - accompanied by a large 10,000 ton fleet support and replenishment tanker - was constantly tracked on its way to Karachi.

The P8-Is dropped sonobuoys across the projected route of the submarine. Sonobuoys - small listening devices that transmit the sound of submarines to reconnaissance aircraft operating overhead - are key to detecting submarines. Interspersed with the 'passive' sonobuoys deployed by the P8-Is, were 'active' sonobuoys which ping the ocean with sound waves reflecting off the submarine surface. Using a combination of both sensors, the Navy's P8-Is were able to force the Chinese submarine into making evasive maneuvers. The exact location of the submarine was also passed on to India's own submarines, which were also monitoring the movement of the 'Shang'.

The 'Shang' entered the Karachi harbour on May 19, its exact location constantly plotted by the Indian Navy's assets, which have determined that the sound radiated by the Shang class is higher than the considerably quieter new generation American or Russian submarines, which are tougher to detect. The 'Shang' and its support ship spent seven days in Karachi, leaving on May 26. It was during this period that Pakistani Navy sailors and officers were allowed access to one of the Chinese Navy's most sensitive assets.

It's still unclear if the 'Shang' returned to Karachi to disembark the Pakistani Naval personnel or whether they were transferred to another vessel as the submarine proceeded south along the Indian peninsula before setting course for the Malacca straits. On June 14, the 'Shang' submarine exited the Indian Ocean region. Senior Navy officers have pointed out that the deployment of Chinese Navy submarines in the Indian Ocean coincides with active efforts to establish a ring of ports to strategically encircle India.

On Sunday, the Maldives leased China an island for 50 years at just 3 million dollars. Earlier, China had also invested heavily in the Ihaven atoll in the Maldives chain, which lies just south of the southernmost Indian island in the Arabian Sea, the Minicoy Islands. Located on a key East-West shipping route, Ihaven could give the Chinese the possibility of berthing naval ships and submarines very close to the Indian mainland.

As significantly, China has secured an 80% share of the Hambantota deep sea port in Sri Lanka as well as land for a new industrial zone in the area. According to the plan, land in this area will be ceded to Beijing for the next 99 years in exchange for \$1.1 billion towards debt relief. Pakistan and China, meanwhile, continue to work closely on developing the strategically located Gwadar port, central to the \$46 billion China-Pacific Economic Corridor (CPEC) that is under development. China also continues to expand its naval base in Djibouti situated in the Horn of Africa.

In August, last year, Pakistan State Radio announced a deal to acquire eight Chinese conventional diesel-electric powered submarines and Bangladesh has just received two submarines for the first time from China.

Source: www.ndtv.com, 10 January 2017

China Won't 'Sit with Arms Crossed' If India Sells Missiles to Vietnam: Chinese Media

BEIJING: Any moves by India to step-up military ties with Vietnam to counter China will create "disturbance" in the region and Beijing will not "sit with its arms crossed", state media said today, taking exception to a report that New Delhi plans to sell surface-to-air Akash missiles to Hanoi. "If the Indian government genuinely treats its enhancement of military relations with Vietnam as a strategic arrangement or even revenge against Beijing, it will only create disturbances in the region and China will hardly sit with its arms crossed," an op-ed in the Global Times said, highlighting China's concerns over reports of supply of Akash surface-to-air missile system to Vietnam.

The supply of missiles was supposed to be a "normal arms sale, yet was portrayed by the Indian media as a response "to counter the Chinese threat", it said, referring to reports that the missile sale was in response to China blocking India's move to become member of the Nuclear Suppliers Group (NSG) and to block a United

Nations ban on Jaish-e-Mohammed terrorist Masood Azhar. "There should be no dispute when India decides to intensify its military ties with Vietnam, a crucial member of ASEAN as well as a key pillar of India's Act East Policy. Yet such ties should be built for the sake of peace and stability in the region, rather than stirring up troubles or anxiety for others." "However, when India and Vietnam are in talks about possible sales, New Delhi seems to keep taking a sneak peak at Beijing as if the deal is stealthily aimed at China," it said.

Global Times, which is part of the ruling Communist Party of China's official group of publications, has been carrying articles targeting India almost on daily basis with aggressive and hostile language. While striking threatening posture against India over its increasingly close-knit ties with Vietnam, another article in the same daily today warned Hanoi that it must improve ties with China notwithstanding the South China Sea dispute. "Aside from its endeavour to improve relations with China, Hanoi must deal with rising nationalism at home intermingled with anti-China and anti-Communism sentiment at times, which is adverse to the CPV's (ruling Communist Party of Vietnam) leadership itself, as well as the development of China-Vietnam relations.

"Vietnam's leaders must have realised the importance of the issue and they have spared no efforts in developing cooperation with China in politics, economy and culture," it said, referring to the visit of Nguyen Phu Trong, the general secretary of CPV, to Beijing starting tomorrow during which he is scheduled to have talks with top Chinese leaders. Vietnam, along with Philippines, Malaysia, Brunei and Taiwan, questions Beijing's claims over almost all of the South China Sea, and China has been seeking to pacify Hanoi, highlighting the fraternal ties between the Communist Party of China and the Communist Party of Vietnam. The article on India said "due to geopolitical factors, some nations have been cozying up to India over the years, which to a large extent contributed to India's fruitful development".

"New Delhi understands that the best strategy for itself is to continue its collaboration with all parties, instead of picking a side and turning hostile to one another. Otherwise, it might not only turn others' troubles to its own puzzles, but also suffer enormous losses of development opportunities." "During a short visit Indian Prime Minister Narendra Modi paid to Vietnam in September last year, an expert in India voiced that India can make the same statement in China's backyard that they do in ours. Yet Vietnam is not a backyard to any country. Such a statement only mirrors India's outdated diplomatic mindset." "India has a dream to grow into a

great power. But under today's international circumstances, it will be extraordinarily hard to achieve the goal on its own. What India needs is more pragmatic cooperation with other countries," the report said. "Beijing always emphasises the importance of cooperation with New Delhi and hopes the latter will join the Belt and Road initiative which will help promote the country's infrastructure construction, improve connectivity within the region and may even turn into a push to solve the India-Pakistan contradictions," it said. "It is hoped that the hype in the Indian media does not represent the country's government. There are divergences between Beijing and New Delhi, yet there are more common interests that await the two to explore," it added.

Source: www.ndtv.com, 11 January 2017

Second Kalvari class submarine Khanderi to be launched on January 12

"India is among few countries in the world which produces conventional submarines. Six submarines are being built at MDL in collaboration with M/s DCNS of France, as a part of Project 75 of Indian Navy. The first submarine of the class (Kalvari) is completing its sea trials and will be commissioned shortly into the Indian Navy," the release said. Indian Navy's Submarine arm will complete 50 years on December 8 this year. Submarine Day is celebrated every year to commemorate the birth of the submarine arm with induction of the first submarine, erstwhile INS Kalvari, into the Indian Navy on December 8, 1967, it said.

India joined the exclusive group of submarine constructing nations on February 7, 1992, with the commissioning of the first Indian-built submarine, INS Shalki. MDL built this submarine and went on to commission another submarine, INS Shankul on May 28, 1994. These submarines are still in service today. Khanderi is named after the Island fort of Maratha forces, which played a vital role in ensuring their supremacy at sea in the late 17th century, the release said. The state-of-the-art features of this Scorpene class submarine includes superior stealth and the ability to launch a crippling attack on the enemy using precision guided weapons.

The attack can be launched with torpedoes, as well as tube-launched anti-ship missiles, whilst underwater or on surface. The Stealth features will give it an invulnerability, unmatched by many submarines. The submarine is designed to operate in all theatres, including the tropics. Everything means and communications

are provided to ensure interoperability with other components of a Naval Task Force. It can undertake multifarious types of missions typically undertaken by any modern submarine i.e Anti-Surface warfare, Anti-Submarine warfare, Intelligence gathering, Mine Laying, Area Surveillance etc.

It is built according to the principle of Modular Construction, which involves dividing the submarine into a number of sections and outfitting them concurrently. The equipment is mounted in a special manner and then embarked into the sections. The complexity of the task increases exponentially as it involves laying kilometres of cabling and piping in extremely congested compartments. All equipment has been installed in the submarine, with 95 percent cabling and piping also being completed.

Pressure testing, setting-to-work and commissioning of various systems of the submarine is presently in progress, and would continue after the launching of the submarine, the release said. The important safety milestone of vacuum-testing was completed in the first attempt itself, and within a single day on January 5. This matched the record of 'Kalvari', which also completed the Vacuum Test in one go. Till December, the submarine will undergo rigorous trials and tests, both in harbour and at sea, while on surface and whilst dived.

These trials are designed to test each system to its fullest capacity. Thereafter, she would to be commissioned into the Indian Navy as INS Khanderi. This would be preceded by the commissioning of Kalvari later this year. The other four submarines will follow in the wake of Khanderi at intervals of nine months. As per tradition, ships and submarines of the Navy, are brought alive again after decommissioning. The first Khanderi was commissioned into the Navy on December 6, 1968 and decommissioned on October 18, 1989. The launching, and subsequent commissioning of Khanderi, marks a generational shift in technology, it said.

Source: indianexpress.com, 09 January 2017

US Navy's 'Night Hunter' Drone ship to stalk Russian Subs

The US navy is expanding the mission capabilities of its experimental submarine-hunting drone ship so that it can engage in surface warfare missions, fire weapons and launch electronic attacks. "The 40-meter-long self-propelled warship, dubbed Sea Hunter, is a major advance in robotic warfare at the core of America's strategy

to counter Chinese and Russian naval investments,” Kris Osborne wrote in the latest issue of *Scout Warrior*. “It is designed to cruise on the ocean’s surface for two or three months at a time,” he added. Work on the Defense Advanced Research Project Agency’s Sea Hunter started in 2010 as an anti-submarine ship called “Anti-Submarine Warfare Continuous Trail Unmanned Vessel,” or ACTUV.

According to the Sea Hunter’s designers, the project was the Navy’s answer to the emergence of anaerobic submarine engines that are exceptionally silent. Diesel submarines powered by such engines can stay underwater for months and pose a serious threat to US carrier groups. A diesel-powered Sea Hunter will be able to stalk Russian and Chinese subs for 10,000 nautical miles on a single tank of fuel at a speed of up to 27 knots. At 40 meters, long and just 3.3 meters wide, the 135-ton Sea Hunter can also be used to ensure the security of US carrier groups. Built to withstand rough seas up to Sea State 5 – or waves up to five meters, the Sea Hunter carries an array of advanced hydro-acoustic gear to ensure unmanned navigation to shadow enemy submarines and force them to stay clear of strategically vital areas. The Sea Hunter’s state-of-the-art sensors and sonar technology ensure effective search for and continuous tracking of even the quietest submarine targets. Its high-frequency sonar can determine the shape, size, speed and characteristics of any undersea enemy activity by sending acoustic “pings” into the ocean. The Sea Hunter will perform patrols in tandem with P-8 Poseidon antisubmarine warfare planes, MQ-4C Triton drones and special hydro-acoustic buoys. The Sea Hunter can be controlled by a human “tele-operator” maneuvering the ship with the help of a joystick. As technology evolves, the Navy plan is to rapidly migrate the system from something which is tele-operated to something that can increasingly perform a wider range of functions without needing human intervention. “We need to be able to have a more autonomous system that can steer and reposition itself,” Capt. Jon Rucker, program manager, Unmanned Maritime Systems, PEO LCS, told reporters on January 10 at the Surface Naval Association at Arlington, Virginia. “We are not yet at the point where we don’t have an operator supervising it,” Rucker added.

In his article in *Scout Warrior*, Kris Osborne wrote that “if the Sea Hunter is both more autonomous and armed with lethal weapons in the future, it will be engineered to align with current Pentagon doctrine which says any use of lethal force must hinge upon a human decision-maker in the role of command and control.” Late last year, DARPA earmarked \$8.5 million for the continued test phase development of the ACTUV program meant to ensure “robust continuous tracking of the quietest submarine targets.” Rear Admiral Frank Drennan, commander of the

Naval Mine and Anti-Submarine Warfare Command, said that picking up the quiet hum of a battery-powered, diesel-electric submarine in busy coastal waters is “like trying to identify the sound of a single car engine in the din of a major city.” The ACTUV’s use of sonar is also designed to minimize risks to the marine ecosystems and undersea life such as whales.

Source:sputniknews.com, 15 January 2017

How China is building up its Naval and Shipbuilding capability to rule the Waves

Pakistan's Arabian Sea port of Gwadar is perched on the world's energy jugular. Nearby sea lanes carry most of China's oil imports; any disruption could choke the world's second-largest economy. Owned, financed and built by China, Gwadar occupies a strategic location. Yet Islamabad and Beijing for years denied any military plans for the harbour, insisting it was a purely commercial project. Now the mask is slipping. "As Gwadar becomes more active as a port, Chinese traffic both commercial and naval will grow to this region," says a senior foreign ministry official in Islamabad. "There are no plans for a permanent Chinese naval base. But the relationship is stretching out to the sea." Gwadar is part of a bigger ambition, driven by President Xi Jinping, for China to become a maritime superpower. A Financial Times investigation reveals how far Beijing has come in achieving that objective in the past six years.

A Pakistan Navy soldier stands guard while a loaded Chinese ship prepares to depart, at Gwadar port in Pakistan in November 2016. Investments in a vast network of harbours have made China's port operators the world leaders. Its shipping companies carry more cargo than those of any other nation – five of the top 10 container ports in the world are in mainland China with another in Hong Kong. Its coastguard has the largest maritime law enforcement fleet, its navy is the fastest growing among major powers and its fishing armada numbers some 200,000 seagoing vessels.

The emergence of China as a maritime superpower is set to challenge a US command of the seas that has underwritten a crucial element of Pax Americana, the relative

period of peace enjoyed in the west since the second world war. As US president-elect Donald Trump prepares to take power, strategic tensions between China and the US are already evident in the South China Sea, where Beijing has pledged to enforce its claim to disputed islands and atolls. China understands maritime influence in the same way as Alfred Thayer Mahan, the 19th-century American strategist. "Control of the sea," Mahan wrote, "by maritime commerce and naval supremacy, means predominant influence in the world; because, however great the wealth of the land, nothing facilitates the necessary exchanges as does the sea."

Drummed into military service

The Gwadar template, where Beijing used its commercial know-how and financial muscle to secure ownership over a strategic trading base, only to enlist it later into military service, has been used in other key locations. China's first aircraft carrier, the Liaoning, is anchored in the northern port in Qingdao, east China's Shandong Province.

In Sri Lanka, Greece and Djibouti, Chinese investment in civilian ports has been followed by deployments or visits of People's Liberation Army Navy vessels and in some cases announcements of longer term military contingencies. "There is an inherent duality in the facilities that China is establishing in foreign ports, which are ostensibly commercial but quickly upgradeable to carry out essential military missions," says Abhijit Singh, from the Observer Research Foundation in New Delhi. Data compiled or commissioned by the FT from third-party sources show the extent of China's dominance in most maritime domains. Beijing's shipping lines deliver more containers than those from any other country, according to data from Drewry, the shipping consultancy. The five big Chinese carriers together controlled 18 per cent of all container shipping handled by the world's top 20 companies in 2015.

In terms of container ports, China already rules the waves. Nearly two-thirds of the world's top 50 had some degree of Chinese investment by 2015, up from about one-fifth in 2010, according to FT research. And those ports handled 67 per cent of global container volumes, up from 41 per cent in 2010, according to Lloyd's List Intelligence, the maritime and trade data specialists. The dominance is reduced but still emphatic if only containers directly handled by Chinese port operators are measured. Of the top 10 port operators, Chinese companies handled 39 per cent of all volumes, almost double the second largest nation, according to Drewry.

It is not only the world's biggest ports that have attracted Chinese investments. Key strategic locations such as Djibouti or Hambantota in Sri Lanka and proposed ports on the Atlantic Ocean islands of São Tomé and Príncipe – have also drawn investments or promises of Chinese port construction. The total spend is difficult to calculate because of sketchy disclosure. But since 2010, Chinese and Hong Kong companies have completed or announced deals involving at least 40 ports worth a total of about \$US45.6 billion, according to a study by Sam Beatson and Jim Coke at the Lau China Institute, King's College London, in co-operation with the FT.

Rounding out a picture of China's merchant navy dominance is the country's fishing fleet, which is by far the largest in the world, according to Michael McDevitt, a former rear admiral in the US navy and a senior fellow at CNA Strategic Studies, a US think-tank. "[China's] maritime power equation includes a large and effective coastguard, a world-class merchant marine and fishing fleet, a globally recognised shipbuilding capacity and an ability to harvest or extract maritime resources, especially fish," he wrote.

For thousands of years, Chinese emperors focused on defending the middle kingdom against land-based invasions. But in 2015 an official white paper on military strategy decreed a big shift that offers a glimpse of China's changing objectives. "The traditional mentality that land outweighs sea must be abandoned, and great importance has to be attached to managing the seas and oceans and protecting maritime rights and interests," it said.

Analysts say China's strategy is aimed primarily at denying US aircraft carrier battle groups access to a string of archipelagos from Russia's peninsula of Kamchatka to the Malay Peninsula, a natural maritime barrier called the "first island chain" within which China identifies its strategic sphere of influence.

Another focus is a string of artificial islands that Beijing has created out of coral reefs and rocks to help reinforce its claim to most of the South China Sea, putting it on a collision course with its neighbours as well as the US. The artificial islands have been equipped with landing strips and a US think-tank recently said, after analysis of satellite images, that Beijing appeared to have installed anti-aircraft guns, anti-missile systems and radar facilities.

Although Beijing plays down such sweeping strategic objectives, the drive to step up naval security is regularly emphasised in official Chinese circles.

A merging of agendas

The political justification often used for port investments is "One Belt One Road", a grand design advocated by Mr Xi to revive the ancient Silk Road trading routes and boost commerce in more than 60 countries in Asia, the Middle East, Africa and Europe. Gwadar port, for example, is described as the core element in a \$54bn China-Pakistan economic corridor. At its inception, Chinese involvement of the port was limited to financing and construction but in 2015 Islamabad handed ownership to the state-owned China Overseas Port Holding Company on a lease until 2059.

To the west of Gwadar at Djibouti – on the Horn of Africa's maritime chokepoint – a similar story has unfolded. China's initial embrace seemed purely commercial, with the state-owned China Merchants Group taking a stake in the port's container terminal in 2012, paving the way for a \$US9 billion investment. But in 2016, Beijing acknowledged that its plans for Djibouti had an additional dimension - the construction of the country's first overseas naval base, ensuring China's military presence in the region until at least 2026.

In Greece, too, the 2015 acquisition of a \$US420 million controlling stake in Piraeus, one of Europe's largest ports, signalled a merging of commercial and strategic agendas. At the time, Chinese officials recalled how Beijing was embarrassed in 2011 when it needed to evacuate 36,000 Chinese workers from Libya as violence broke out, forcing it at short notice to enlist the help of Greek merchant ships for rescue missions. "If that was to happen again," says a Chinese official. "We would be much better prepared. We could use the Chinese navy and take the evacuees to our own port at Piraeus."

Source: www.afr.com, 15 January 2017

China hands over 2 ships to Pakistan Navy for Gwadar Security

KARACHI: China has handed over two ships to the Pakistan Navy to safeguard the strategic Gwadar port and trade routes under the USD 46 billion China-Pakistan Economic Corridor, a move likely to raise alarm in India. China handed over the two ships to the Pakistan Navy yesterday for joint security along the sea route of the China-Pakistan Economic Corridor (CPEC), Dawn News reported. The Gwadar port in Pakistan's restive Balochistan province has been developed under CPEC linking

western China through Pakistan with the Middle East, Africa and Europe. The ships -- named after two rivers Hingol and Basol near Gwadar -- were received by Commander of the Pakistan Fleet Vice Admiral Arifullah Hussaini. Recently built in China and equipped with state-of-the-art guns, the ships will be part of Pakistan Navy and also used to protect the sea-lanes in th Arabian Sea A ceremony was held in Gwadar where Chinese officials, who reached Gwadar aboard the ships, handed them over to their Pakistani counterparts.

Director General of the Pakistan Maritime Security Agency Rear Admiral Jamil Akhter, Commander West Commodore Mohammad Waris and top naval and civilian officials were present on the occasion. "The Chinese ships have become part of the Pakistan Navy from today," Vice Admiral Hussaini said, adding that the navy would become stronger with the induction of the ships. He termed the induction of the Chinese ships into the Pakistan Navy as a "historic moment" and said th. ships would be deployed for the security of the Gwadar port and the sea route of the CPEC.

The Chinese government will provide two more ships to Pakistan Navy which have been named Dasht and Zhob after two districts in Balochistan. China is extending help and cooperation to Pakistan for security along the CPEC's land and sea routes. Pakistan has already raised a new division of the army to ensure security along the CPEC route and in and around the Gwadar port. Security of Gwadar city has been handed over to the army's new division raised during the tenur. of former army, chief Gen Raheel Sharif.

In the past, China has shied away from saying that it plans to deploy its naval ships in Gwadar, a move which could raise alarm in the US and India. China has not only rebuilt the Gwadar port but also has its operational control. It is also building a network of roads and railways to link up its remote western region to Gwadar for easier access to the Arabian Sea. The revamped Gwadar port became operational in November last year after two cargo ships laden with containers set off for Bangladesh, Sri Lanka, the UAE and EU.

Source:economictimes.indiatimes.com, 15 January 2017



EU ship levy proposal risks undermining efforts to cut sector emissions: U.N. agency

A European Union proposal to impose a levy on ships over their greenhouse gas emissions risks undermining the sector's global efforts to tackle the issue, the UN shipping agency's chief said on Monday. EU lawmakers voted in December in favor of including shipping in draft reforms of the bloc's carbon emissions trading system (ETS), which could see the establishment of a fund to compensate for the industry's carbon footprint. The shipping industry, which accounts for around 90 percent of goods transported globally, has rejected unilateral moves by the EU, arguing it would distort world trade and instead wants the issue handled via UN agency, the International Maritime Organization (IMO).

In a letter addressed to EU officials on Monday, IMO Secretary-General Kitack Lim said inclusion of emissions from ships in an ETS by the bloc "significantly risks undermining efforts on a global level". "I am concerned that a final decision to extend the EU ETS to shipping emissions would not only be premature but would seriously impact on the work of IMO to address GHG (greenhouse gas) emissions from international shipping," Lim wrote. "Such political cooperation is important to ensure that all countries act together."

The proposals will go to a plenary vote in February and the EU's three law-making bodies - member states, the European Commission and the European Parliament - will start talks this year to thrash out a reform deal. A spokeswoman for the European Commission said in December that it was closely following the discussions in both the European Parliament and the Council of member governments, but had no specific comment on the inclusion of shipping in the proposals. Shipping now accounts for around 2.2 percent of world emissions of carbon dioxide (CO₂) and that share is forecast to rise dramatically if nothing is done to slow it.

Source: www.reuters.com, 09 January 2017

China pledges support for shipbuilding industry, targets high-end market

China aims to capture up to 40 percent of the global high-end marine equipment market over the years through 2020 while reforming and supporting its money-losing shipbuilding industry, the government said on Thursday. The pledges were laid out in a statement published by six ministries on the website of the Ministry of Industry and Information Technology. The statement broadly outlined their plans for Chinese shipbuilding over 2016-2020. The global shipping industry is suffering from a severe downturn that has sapped demand for new vessels. Many shipyards in China, which build mainly mid-to-low-end vessels such as dry bulk carriers, have shut down as a result.

In December, the China Association of the National Shipbuilding Industry said new orders for ships at Chinese yards fell 14 percent in January-November from the same period a year earlier. "Our shipbuilding industry is facing its most difficult challenge since financial crisis, making the task to restructure and upgrade the industry urgent and arduous," the government said in the statement. The government said it would encourage the industry to increase spending on research and focus on building more high-end products such as offshore equipment with the aim of cornering 35-40 percent of that market by 2020. It did not disclose its current market share.

It also said it would improve the branding of its shipbuilding companies, encourage financial institutions to support the sector with loans and financing, and attract more private capital into the industry. (Reporting by Brenda Goh; Editing by Christopher Cushing)

Source: www.reuters.com, 11 January 2017

Korea to set up fund to promote cruise industry

SEOUL, Jan. 11 (Yonhap) -- South Korea plans to set up a fund worth at least 100 billion won (US\$83.3 million) to offer financial help to the cruise industry as the country aims to bring more foreign tourists ashore, Oceans and Fisheries Minister Kim Young-suk said Wednesday. Korea Cruise Line, a cruise ship operator, was launched in late 2015, but has failed to initiate full-scale operations so far due to financial trouble over its initial investment. Kim said the fund will help Korea Cruise Line purchase a cruise ship worth about 200 billion won.

The fund will be created by the private sector, with the government's investment accounting for 10 percent of the capital, Kim said. Discussions among relevant ministries, including the Ministry of Strategy and Finance and the Financial Supervisory Commission, will soon begin, Kim added. "According to experts, the number of cruise passengers could be more than 100,000 people if a cruise ship of between 50,000 tons and 70,000 tons is placed in service," Kim said in an interview with Yonhap News Agency. Kim said the government will step up public relations activities to increase the number of cruise passengers.

The number of cruise passengers visiting South Korea was expected to top 2.2 million last year, doubling from 2015, driven by an influx of Chinese travelers via cruise packages, according to the Korea Tourism Organization. Since 2010, the number of cruise travelers to South Korea has increased at an annual rate of 47 percent, with the figure topping 1 million in 2015 for the first time. South Korea's shipping industry has been undergoing a painful overhaul since Hanjin Shipping Co., the country's No. 1 shipping line, was placed under court receivership in September last year due to multi-billion-dollar debt. SM Group, a mid-sized business conglomerate that owns the nation's No. 2 bulk carrier Korea Line Corp., plans to launch a new shipping line in March after acquiring Hanjin's major assets. Kim said the government will offer a range of financial support for SM to smoothly launch the new shipping line. In order to support the seafood industry, the government will develop technologies this year to help fish farms raise yellowtail, big octopus and filefish, Kim said. Kim said the nation's local seafood industry should benchmark Norway's seafood company Marine Harvest.

Source: english.yonhapnews.co.kr, 10 January 2017

IDRO, Daewoo to found quartet Shipbuilding Company

TEHRAN, Jan. 10 (MNA) – Deputy industry minister said a quarter shipbuilding company will be formed by the end of January in partnership with IDRO, IRISL, NITC as well as South Korea's Daewoo Shipbuilding & Marine Engineering (DSME) shipbuilding company. Managing Director of Industrial Development & Renovation Organization of Iran (IDRO) Mansour Moazemi made the remarks while addressing a seminar for introducing achievements in shipbuilding design and engineering.

He pointed to the need for 37 billion dollars of investment for construction of required vessels in the country by the year 2025. The official further reported on IDRO's plan to hold scientific conferences on a monthly basis in collaboration with its credible partners; "IDRO is seeking to regain its real identity and in view of the country's economic situation, development organizations like IDRO could play an industrial role in industrial developments." Moazemi recalled that 19 Memoranda of Understanding (MoUs) have been signed following implementation of the Joint Comprehensive Plan of Action (JCPOA) asserting that seven or eight of the agreements will turn into contracts within months while IDRO' share in all of them stands lower than 49 per cent. He emphasized the need for foreign investment hence IDRO's approach towards cooperation with international firms in a bid to activate capabilities and capacities.

Deputy industry minister referred to the recent contract between Iranian Shipping Lines (IRISL) and South Korea's Hyundai company which dates back to 2008 adding "the deal was not completely approved by the Ministry of Industry, Mine and Trade since Minister Nematzadeh has always called for exploitation of domestic capabilities; "accordingly, the agreement with Hyundai requires the South Korean firm to offer training courses to 50 Iranians in the designing sector." "In a separate MoU, Iran agreed to share a part of its capabilities in manufacturing shipbuilding equipment with Hyundai," noted the official announcing that a South Korean will make a visit to Iran in the coming week for relevant talks. Moazemi deemed the gap between producers and consumers as a major issue in the country's industry and called for mutual understanding between the two parties. "In the same line, a trilateral partnership has emerged between IDRO, IRISL and the National Iranian Tanker Company as an attempt to bridge the gap between manufacturers and consumers as well as to take the most out of domestic capacities. Later, a joint MoU was sealed between IDRO and Daewoo Shipbuilding & Marine Engineering (DSME) shipbuilding company on December 28, 2016 and a quartet firm will be formed by the end of January by the Korean firm, IRISL, NITC and IDRO who will enjoy 20, 20, 25 and 30 per cent of the total share, respectively."

Also on the sidelines of the seminar, a cooperation agreement was inked between Iran Shipbuilding & Offshore Industries Complex Co (ISOICO) and Neptun Ship Design, Germany's largest ship design office established in 1992, in the field of designing and engineering of various types of ships. The newly-signed MoU hold great significance given that Iran has obtained the technology to design megaships and ships as heavy as over 100 to 400 thousand tons will be constructed domestically henceforth.

Source: en.mehrnews.com, 10 January 2017

India looks to Khulna for major investment: envoy

India has attached importance to Khulna to improve connectivity and trade infrastructure in the region to open up new opportunities for investment. “Khulna, already an important hub for jute, seafood processing and shipbuilding, holds great potential for attracting investments,” Indian High Commissioner Harsh Vardhan Shringla said yesterday. “Its access to Mongla port and proximity to a big Indian market increase its attractiveness as a destination for investment.” He spoke while addressing a programme at Khulna Chamber of Commerce and Industry yesterday. Shringla also said India has identified Mongla as one of the potential locations for establishing a special economic zone for Indian companies. “The feasibility study on Mongla SEZ is going on, and will be completed soon,” he added.

He said India has also offered partnership to Bangladesh in modernising the infrastructure at Mongla port and to construct Khan Jahan Ali Airport. Shringla said a number of Indian companies have also set up their plants in the Khulna division -- VIP Industries has a manufacturing unit in the Mongla EPZ; Tata Motors has an assembly plant in Jessore; Hero MotoCorp is investing around \$30 million to set up a motorcycle manufacturing plant in Jessore. India has decided to open an Assistant High Commission in Khulna city and hoped to have this set-up at the earliest possible once the formalities are completed, according to Shringla.

Shringla said Khulna can also serve as a hub for promoting tourism to the Sundarbans and to other historical sites in the vicinity, particularly the Mosque City of Bagerhat, a Unesco World Heritage Site. “We hope to sign an agreement that provides for greater exchanges in the tourism sector, including the visit of cruise ships.” Referring to his visit to Khulna, he said that he arrived in Khulna directly from a visit to the Khulna-Mongla railway line project financed under a line of credit from India. Land acquisition by the concerned authorities has begun. “This has allowed construction to begin, making it possible for us to aim to complete the Rupsha Bridge by 2018 and the project by 2019.” “Once completed, the railway line will significantly improve connectivity between Mongla port and the rest of the country through Khulna,” he said.

As part of India's larger focus to improve connectivity and trade infrastructure between India and Bangladesh, Petrapole integrated check post with state-of-the-art infrastructure for facilitating cargo movement was jointly inaugurated by the prime ministers in July 2016, he said. The Ghojadanga Land Customs Station (Bhomra on the Bangladesh side), which is closer to Khulna, is also proposed to be upgraded to

an integrated check-post. The trial run of the Kolkata-Khulna bus service ended successfully in August 2016, and now it is also expected to be launched soon, he said. He said the bilateral trade has registered a substantial increase over the last few years. Since 2001-02, Bangladesh's exports to India grew 10 times and India's exports (and the total trade) grew nearly six-fold. Total India-Bangladesh trade stood at \$6.14 billion in 2015-16.

However, India's exports to Bangladesh have declined although Bangladesh's exports to India have seen a substantial increase in the last two years. Bangladesh's exports to India increased 30.8 percent year-on-year to \$689.62 million in 2015-16, while India's exports declined 6.3 percent in the same period.

Source: www.thedailystar.net, 13 January 2017

Kenya in deal with Denmark to revamp shipping sector

Kenya yesterday signed a five-year agreement with Denmark that will see players in the maritime and shipping sector get advanced training. The country could benefit more from other financial investments under this agreement. Denmark, which boasts a large maritime and shipping industry, will from next month offer training to Kenyan cadets. The training will be undertaken by Denmark's leading shipping company, Det Forenede Dampskibs-Selskab (DFDS). "This five-year agreement will enable Kenya marine engineering and nautical science cadets acquire seagoing service of 12 months which is a mandatory requirement towards attainment of professional qualifications in the maritime industry either as marine engineering officers or navigating officers," Nancy Karigithu, the Permanent Secretary for maritime and shipping affairs, said. Ms Karigithu said the shipping industry had stagnated over the years, but attempts are being now being made to revive it. "We have got one of the longest coastlines in Africa, and it's sad that we are not a power to reckon with when it comes to shipping and other maritime affairs in the continent. But with the setting up of the new department that I am heading, as well as partnerships with notable global players like Denmark, I am sure the situation will change," Karigithu said. The PS said that to grow the sector, a new law now requires that imported cargo to be insured by local underwriters. While putting her signature onto the agreement, the Danish Ambassador to Kenya, Ms Mette Knudsen, said she hoped Kenya would take advantage of the opportunities in shipping, given that the sector was not only important for commercial services, but also for military defences.

ALSO, READ: Flight MH370 families urge Mauritians to be on alert for debris Indian Ocean trade “Denmark, like Kenya, has a rich history in sea-faring. Our Scandinavian ancestors- Vikings — were great seafarers. The Kenyan coast pioneered dhow-making during the Indian Ocean trade with the West. This tradition should be uplifted to empower the modern shipping industry and reap its gains,” said Ms Knudsen. DFDS is northern Europe’s largest shipping and logistics company. The conglomerate, which was worth Euro1.6 billion (Sh177.6 billion) as of 2014, is also utilised by the military as it provides strategic sealifts for The North Atlantic Treaty Organisation (NATO).

Source:www.standardmedia.co.ke, 14 January 2017

Profitable Coral Reef Fisheries Require Light Fishing

New York (January 12, 2017) - Fishing is fundamentally altering the food chain in coral reefs and putting dual pressures on the valuable top-level predatory fish, according to new research by the Wildlife Conservation Society, Lancaster University, and other organizations. Fish that sit at the top of the food chain, such as snapper and groupers, are highly sought-after in restaurants the world over, commanding a high price in fish markets and supporting fishing communities across the tropics, but maintaining them may be challenged by the complexity of the coral reef food web, according to a newly published study titled "Human disruption of coral reef trophic structure" in the journal *Current Biology*. "Given the fragile state of the world's coral reefs it is important to understand how human activity such as fishing impacts upon coral reef ecology," said lead author Nick Graham of the Lancaster Environment Centre, Lancaster University. "Our study has shown these top-level predatory fish are only likely to be viable in overall lightly fished reefs, for example the Great Barrier Reef. To both conserve these top-of-the-food-chain fish, and to maintain fisheries for them, overall fish biomass on the coral reef needs to remain high.

Studying a large array of reefs in the Indian Ocean, the researchers found that reef food webs are altered in ways that can undermine valued species by bottom-up losses of available food as much as the top-down forces of fishing. These predators feed on other moderately sought fisheries species, such as parrotfish and surgeonfish, which appear both slow to recover from fishing but are also replaced by sea urchins as grazers, which are not the prey of these valued predators.

Consequently, replacing fish at the bottom of the food web with sea urchins may bolster the mid-tier species of fish but at a cost to the most prized predators. Fisheries in these situations struggle to maintain their preferred catch and pricey yields. The ecosystem is fundamentally altered in ways that may undermine the potential to recover their value.

The team also found that an hourglass food web shape emerges in what is frequently predicted to be an ecosystem pyramid, implying that energy in the ecosystem may accumulate at the top of the food chain by high productivity but low biomass of the mid-tier predators. This suggests lightly fished systems support these valuable top-level fish if lightly fished but fishing lower in the food chain can cause a collapse of the top tier predators. This is also most likely to occur when these mid-tier predators are fished and when herbivorous fish are replaced by sea urchins at the bottom of the food chain. Sea urchins proliferate when their mid-tier predators are fished even lightly. These ecological insights cast a new light on how to manage tropical fisheries and policies for maintaining intact food webs, filling an important gap in our understanding of fisheries targets on coral reefs. "Previous research by our team has identified target levels of biomass which sustain fisheries for a diverse array of species, while maintaining ecosystem structure. This current work identifies a higher target for fisheries that aim to target predatory fish and focus on high value fisheries," said Dr. Tim McClanahan, Senior Conservation Zoologist of WCS and a study co-author. "Key to these targets is the objective of maintaining the ecosystem at the same time as supporting fisheries and livelihoods."

"Understanding how humans alter energy flows within coral reefs gives us another tool for deciding how much fish we can safely take for ourselves," said Dr. Aaron MacNeil of the Australian Institute of Marine Science, and Dalhousie University. "And by accounting for the energy stored in the system, we can choose to allocate effort to different parts of the food web and maximize overall catch and function." McClanahan added: "Millions of people in coastal communities around the world rely on natural resources from coral reefs and other marine ecosystems. Studies such as this one that determine how much fishing these ecosystems can sustain are more important than ever if we are to keep coral reefs fully functional for sustainable use."

Organizational partners in the study are: Australian Research Council Centre of Excellence for Coral Reef Studies, James Cook University, Australia; Wildlife Conservation Society, Marine Programs, Bronx, USA; Australian Institute of Marine Science, Australia; Department of Mathematics and Statistics, Dalhousie University,

Halifax, Canada; Department of Parks and Wildlife, Kensington, Perth, Australia; School of Plant Biology, Oceans Institute, University of Western Australia, Australia. The research was supported by the Western Indian Ocean Marine Science Association, the John D. and Catherine T. MacArthur Foundation, the Australian Research Council, the Leverhulme Trust, and the Royal Society.

WCS (Wildlife Conservation Society)

MISSION: WCS saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature. To achieve our mission, WCS, based at the Bronx Zoo, harnesses the power of its Global Conservation Program in nearly 60 nations and in all the world's oceans and its five wildlife parks in New York City, visited by 4 million people annually. WCS combines its expertise in the field, zoos, and aquarium to achieve its conservation mission. Visit: newsroom.wcs.org Follow: @WCSNewsroom. For more information: 347-840-1242.

The John D. and Catherine T. MacArthur Foundation supports creative people, effective institutions, and influential networks building a more just, verdant, and peaceful world. MacArthur is placing a few big bets that truly significant progress is possible on some of the world's most pressing social challenges, including over-incarceration, global climate change, nuclear risk, and significantly increasing capital for the social sector. In addition to the MacArthur Fellows Program, the Foundation continues its historic commitments to the role of journalism in a responsible and responsive democracy; the strength and vitality of our headquarters city, Chicago; and generating new knowledge about critical issues.

Source: www.eurekalert.org, 15 January 2017

Sri Lanka's Mega Port city poised to change face of Colombo

Sri Lanka is building a mega port city project in its capital Colombo that will transform the country into an international financial and business hub in the Indian Ocean region in the coming years. The \$1.4 billion project, which is currently under-construction near Colombo Harbour, is Sri Lanka's largest foreign investment and the port city would be the first of its kind in the South Asian region, Xinhua news agency reported on Sunday.

The project is an investment of China Communications Construction Company Limited (CCCC) and has to date employed hundreds of locals. "I feel very proud to be contributing towards this project as a Sri Lankan. The project is going to create more than 80,000 jobs within the next 20 years, which will benefit Sri Lanka immensely," said Chiranthi Balapatabandi, Marketing Communications Executive of CHEC Port City Colombo, the project's contractor. Balapatabandi said that the project would help promote Sri Lanka's economy by encouraging foreign direct investments and private sector growth.

Sri Lanka, taking advantage of its strategic location, is seeking a strong role in China's Belt and Road Initiative. "The Colombo port city will make Colombo a better place for Sri Lankans living overseas to return to their motherland to work and live. I truly believe the project is going to help Colombo become a vibrant business hub in South Asia," Balapatabandi said. The project, which initially began construction in September 2014 under the former government, was suspended in March 2015 by President Maithripala Sirisena's government due to environmental concerns.

However, in March 2016, the project was given the nod by the government after successful discussions between the two countries and with all environmental reports cleared. —IANS

Source: www.business-standard.com, 15 January 2017



MARINE ENVIRONMENT



JN Port holds interactive session along with DG Shipping & JNCH to promote DPD facility

MUMBAI: JN Port along with Jawaharlal Nehru Customs House (JNCH) and DG Shipping held an interactive session with the trade on 6th January 2016 at the Hotel Taj Mahal Palace, Mumbai to promote the DPD (Direct Port Delivery) service under the aegis of Ministry of Shipping's initiative to promote Ease of Doing Business. This interactive session was held to seek the possible solutions and suggestion from the trade on hindrance being faced by importers in order to promote DPD service. The short-term aim is to take the share of DPD service upto 40 % for import laden container to be further scaled to almost 70 % in order to improve India's ranking in Ease of Doing Business Globally.

The trade got a rare opportunity to interact with some of high level Government Officials from JN Port, JNCH, DG Shipping, CONCOR besides other private terminal players like DP World Nhava Sheva & APM Terminals Mumbai. Also present were representative from Trade Bodies like CSLA, MANSA, INSA, BCHAA, AMTOI and FFFAI. Mr. Anil Diggikar, IAS, Chairman – JN Port, Mr. Neeraj Bansal, IRS, Deputy Chairman – JN Port, Ms. Malini Shankar, IAS, DG Shipping, Dr. John Joseph, IRS, Chief Commissioner of Customs – JNCH, Mr. Subhash Agrawal, Commissioner of Customs, Mr. Sharat Chandrayan, Chief General Manager – CONCOR, Mr. Kamal Jain, CEO – APM Terminals Mumbai and Capt. Ravinder Johal, CEO – DP World Nhava Sheva were present on this occasion to interact and take queries from the trade on the possible solutions to accelerate the share of DPD services going forward.

Dr. C. Unnikrishnan Nair, Chief Manager Traffic – JN Port welcomed all the Dignitaries on the dias and the trade, who was present in large number for this interactive session. Dr. John Joseph of JNCH expected all the stakeholders to contribute constructively in its endeavor to promote the share of DPD from JN Port in order to promote Ease of Doing Business.

Mr. Anil Diggikar highlighted the global best practices adopted by the JN Port in order to reduce the import and export dwell time. He also mentioned that this

interactive session was being conducted to understand the problems being faced by the importers and to find the possible solution for the same. Mr. Sharat Chandrayan of CONCOR highlighted the initiatives taken by CONCOR for boosting the export-import trade from JN Port. Mr. Neeraj Bansal of JN Port gave an indepth presentation on possible ways as to increase DPD facility and asked the trade to give in writing the current problems faced by the importers in getting registered for DPD facility in order to develop a robust mechanism to take this initiative forward.

Mr. Kamal Jain of APM Terminals Mumbai and Capt. Ravinder Johal of DP World Nhava Sheva assured the trade wholehearted support for this DPD initiative. Initiatives taken by JN Port to be globally Competitive As India's leading Container Port, JNPT is constantly innovating and upscaling operations to not only meet but exceed the global benchmarks with an underlying commitment to provide seamless customer service and Ease of Doing Business.

During recent years, JNPT has taken a number of initiatives for faster and economical operations along with automation that has helped in streamlining the process and helping in reduction of cost, time and documents and thus making it easier for clients and partners to do business. In order to bring in more transparency in the operations for logistics chain, JNPT has started sharing all the relevant information about the port and other stakeholders with the trade and in the process, empower the trade in making the right business decisions.

As a result of these initiatives, the Average Import dwell time at JN Port has reduced to 1.5 days, which is comparable to the international benchmark of 1-2 days. Similarly, the Average Export Dwell time is reduced to 63 hours from the earlier 88 hours.

To further decongest the port and expedite the delivery of consignments and reduce costs, Direct Port Delivery (DPD) facility has been initiated by JN Port in an aggressive manner. In fact, JN Port first started this DPD facility in Feb 2007 for the import laden containers wherein the container is directly delivered to the client's doorstep, for all the customs approved ACP clients on minimum volume criteria. Thus, between Feb 2007 and Jan 2016, 11 clients signed up for this facility.

However, in Feb 2016, JN Port took a path breaking initiative of eliminating the minimum volume criteria for availing of the DPD facility so that maximum number of clients can take the advantage of this cost effective and time reducing service.

Consequently, the number of ACP clients rose to 123 in the subsequent 11 months which now stand at 778 as on today and is likely to swell in coming days. To further streamline the process, registration as well as renewal to avail this DPD, is made available online through JNPT's website.

In fact, this facility has reduced the import dwell time from earlier 9-11 days (inclusive of 7-8 days of process time at CFS's end) to 1.5 days. Apart from this, the trade is also saving approximately saving Rs. 25,000 to Rs. 40,000 per TEUs in transaction, inventory and container detention cost.

Source: www.dailyshippingtimes.com, 09 January 2017

Aircraft carrier cleanup sparks pollution concerns

BREMERTON — The Navy's fast-tracked preparations to dismantle an old aircraft carrier could be putting Sinclair Inlet's health in peril. Environmental regulators and local groups are concerned that the Puget Sound Naval Shipyard is scraping toxic amounts of copper-based paint directly into the water from the hull of the USS Independence. The Navy plans to tow the 1,070-foot-long carrier to Brownsville, Texas, where it will be handed over to shipbreakers. It was scheduled to leave Bremerton two months ago,

Nearly 60 years old, the Independence is one of two inactive carriers moored on Bremerton's south shore. The Navy scrapped two other Bremerton-based carriers — the USS Constellation and the USS Ranger — since 2014. Dive crews Friday began the weeks-long process of removing a 3-inch layer of barnacles and other marine growth from the Independence's hull. This "biofoul" must be removed to limit the spread of invasive species during the ship's 16,000-mile trek to Texas.

In a statement, Navy officials said divers are "gently scrubbing" to avoid the removal of paint. "The Navy's action will not adversely impact endangered or other species or their critical habitat," the statement read. The U.S. Environmental Protection Agency and the state Department of Ecology aren't so sure. They joined the Suquamish Tribe and Washington Environmental Council in expressing concern that the Navy's actions might harm the fragile waterway. The copper common in hull paint causes serious harm to marine species. Even in low doses, copper can damage the sensory systems of salmon, inhibiting their ability to detect predators and find spawning

areas. The Navy has conceded there is some risk of contamination from decommissioned carrier hulls. In a 2014 environmental assessment for the Ranger, the Navy indicated that the act of towing the vessel “could pose risk to water quality if substantial quantities of paint from the underwater hull is released into the environment.”

Suquamish Chairman Leonard Forsman said no other boat owner in Puget Sound would be allowed to dump hull waste into open water. “I don’t know why the Navy believes it shouldn’t be held to the same standards as everyone else,” Forsman said.

In Washington, all boats must be hauled out for hull cleanings. But the Navy is beholden to federal clean water rules — not the state’s — and can claim an exemption from national pollution discharge rules. The Navy typically conducts hull cleaning at the shipyard’s large drydocks. In documents submitted to the EPA, the Navy touted the Bremerton Navy Yard’s state-of-the-art marine pollution prevention and waste disposal capabilities. But the carrier’s “size and complexity” make it difficult to drydock, Navy officials said Tuesday.

According to Suquamish biologists who have been in contact with the Navy, cleaning the Independence’s hull will release up to 73 dump truck loads worth of material into the inlet. “That will mobilize a lot of copper, and there’s already so much copper in Sinclair Inlet,” said Mindy Roberts, the Washington Environmental Council’s Puget Sound director.

The shipyard is considered one of the state’s most polluted areas. Designating it a federal Superfund cleanup site in 1994, the EPA estimates about 350 acres of land and 340 acres of tideland were fouled by large amounts of hazardous waste, including copper, mercury and other heavy metals, since the base and shipyard were established in 1891. The hull scraping could be a setback for a site that was showing signs of recovery, EPA officials say. “We have expressed our concerns to the Navy about the potential impact on Puget Sound and the potential to add contamination to the Superfund site,” the EPA said in a statement. “We have asked the Navy to develop a more robust monitoring plan to address these concerns, and to share this plan with us.” Ecology is asking that the Navy conduct sediment testing once the hull cleaning concludes. “If the contamination doesn’t stay within (the guidelines), we would want cleanup work and other measures to protect the site,” Ecology spokesman Larry Altose said.

Source: www.kitsapsun.com, 10 January 2017

A new Pipeline in Canada Could Cause Marine Species to be flooded with noise

On Wednesday, British Columbia granted environmental approval of Kinder Morgan's Trans Mountain pipeline project, following a federal green light in late 2016. Both governments believe this project can simultaneously achieve economic gain and environmental safety, with BC adding 37 new conditions (including stronger protections for wetlands, caribou and grizzlies) to the National Energy Board's 157. The pipeline will augment transport of diluted bitumen from Alberta to BC for export. It will also lead to greatly increased tanker traffic on the coast—and a profound change in local underwater soundscapes.

The potential damage of this project to endangered whale populations has incited environmental groups to challenge the federal approval in court. Canada has put forward an Ocean Protection Plan in part to address this, although it's yet to be tested. The plan aims partly to reduce noise that could harm marine mammals, chiefly whales. While scientists have long described the acoustic world of cetaceans, it is only recently that we've begun to acknowledge the importance of sound to other marine life. As a marine biologist based in BC, this has been a focus of my work.

Take the lesser-known plainfin midshipman, which gets its name from the spectacular pattern of silver light-emitting organs called photophores that run the length of its belly and are likened to the buttons of a naval uniform. In the summer months, these brilliant fish flood the intertidal zones from Alaska to Mexico, bringing a tremendous surge of nutrients to a host of predators, including mink, seals, crabs, and starfish.

But the most phenomenal thing about this fish? It sings.

Also, known as the canary fish or talking fish, the male plainfin midshipman sings to attract females to his nest. (After she lays her golden, M&M-sized eggs, childrearing is left completely to the alpha male.) His hum is a low frequency 100 Hz, and one drone can go on for over an hour. Standing by the water's edge on summer nights, when many males chorus together, the sound resonates clearly out of the ocean and into the air; the result is a zen-like, uninterrupted 'ommmmm' like a roomful of yogis. It's hypnotic.

To some, it can be annoying. In the 1980s, an unidentified hum woke up houseboat tenants in San Francisco Bay. Beginning in the summer months just after dark and

continuing until just before dawn, the sound drove resident's crazy. They accused everyone and everything from the US Army Corps of Engineers to the local sewage plant for being responsible for the buzz. When a neighboring biologist suggested the source was the plainfin midshipman, everyone scoffed. A fish produce that much noise? Impossible. But they were wrong.

Fish are acoustic creatures. Of the 30,000-known species of fish, all those studied can hear. Further, at least 800 can make sound. Many fish depend on sound to communicate, detect prey and avoid predators.

But it's not just fish. Snapping shrimp and sea urchin can produce an enormous racket, while many other forms of sea life—from crustaceans to bivalves to coral—rely on sound to orient themselves and find habitat. In some places, noise produced by fish and invertebrates is the dominant sound in the ocean, and can be a proxy for ecosystem health. Life inside the ocean has adapted to a diversity of natural sounds relating to animals, climate, and geologic activity. But a different type of noise introduced by humans (termed “anthropogenic noise”) is causing problems today.

Imagine living in a construction site, 24/7: while you and I can plug our ears, or walk away, many of these organisms are stuck and forced to endure. As a result, many face harms. Whale and dolphin strandings and deaths have been recorded near Navy test sites for decades. Pile driving—the process of hammering infrastructure into the ground to support anything from offshore gas platforms, wind farms to bridges—can damage fish, causing inner bleeding or injury to swim bladders. Seismic noise has been shown to cause internal bruising in crab, and malformations and developmental delays in scallops. Even octopus and squid can suffer massive acoustic trauma from low frequency noise.

In their review of Kinder Morgan's application to the National Energy Board regarding the pipeline expansion project, the Department of Fisheries and Oceans addresses impacts of pile driving on fish and invertebrates, and discusses recommendations to decrease them. But when it comes to tanker traffic, DFO concludes that the impact of increased noise on fish is “likely to be of low risk.” The rationale appears to be a lack of data. The words ‘precautionary approach’ are not found in the review.

This is troubling. Ship noise, which tends to be chronic, low frequency, and far longer-reaching than high frequency noise, could be the most damaging form of global noise pollution, given its current scale and predicted growth.

Further, noise emitted from ships has a frequency that commonly overlaps with those produced by marine animals, and can mask communication; how can these organisms talk to each other over all that racket? While it's true we can't say exactly how sea life will respond to increased shipping noise off our coast, research is showing that fish, crabs, and even sea slugs can suffer in multiple ways from boat noise exposure. We should at the very least act with caution.

There is a silver lining to this problem, if we're prepared to accept it. Unlike many global ocean threats (ocean acidification, warming waters, overfishing, marine pollution), noise has a comparatively simple solution: quieter props. Most of a ship's noise comes from propeller cavitation, when bubbles are formed and then pop. New, more efficient propellers and even retrofitted old ones can cut down on noise dramatically. Another way to limit noise is to decrease ship speed, which also saves on fuel: a win-win. Updating our propeller technology and reducing ship speed will be an important part of quieting our oceans. But it won't address the host of other problems increased tanker traffic will bring about, including ship strikes and oil spills.

Source: motherboard.vice.com, 12 January 2017

Recent Loss of Ice in Arctic is One of the Largest in History

It's quite a worrying thought really. We all hear quite regularly that the ice caps are melting, and that global warming is happening all around us, but how much attention or thought is given to it by the average person? Statistics have been released from the National Snow and Ice Data Center that showed in just four days the Arctic lost over 238,000 sq km (91 sq mi) of ice. That's an area almost equivalent to the size of the UK. Perhaps that will make more people pay attention!

On December 22, the area surrounding the North Pole was said to be at the freezing point, which is unusually warm for this location. The last recorded occasion when temperatures rose so sharply was back in 1958! Another pretty shocking statistic is that there have only been six other occasions since 1978 where the Arctic has seen a

more rapid decline in ice loss, with the latest one being in January 2012. December 23 saw the largest ever one-day drop since 2007 and that measured 174,000 sq km in size, which is roughly around half the size of Germany. This ice loss is the seventh largest of its kind on record.

These are staggering figures and will hopefully make more people aware of what's happening to the world around them. This massive loss of ice is proof that global warming is happening and is having a major effect on the environment. We now just need to work together to make the world a better, much safer place for us all to live.

Source: www.trendintech.com, 14 January 2017

India, US hold talks to protect ocean ecosystems

WASHINGTON: Officials from India and the US have held talks here to protect ocean ecosystems and promote sustainable development through the 'blue economy'. During the dialogue held here on January 13, the two sides held wide-ranging discussions on areas of cooperation in sustainable marine resource management, including the blue economy, fisheries security, and joint exploration of exclusive economic zones.

The first-ever US-India Ocean Dialogue Preparatory Meeting is part of a decision made during the first US-India Strategic and Commercial Dialogue in 2015 to protect ocean ecosystems and promote sustainable development through the 'blue economy', a release said. The American side was led by the Acting Assistant Secretary for the Bureau of Oceans and International Environmental and Scientific Affairs Judith G Garber with Joint Secretary Munu Mahawar representing India.

Reflecting government commitment to marine protection, US participation included representatives of the Department of State, US Coast Guard, National Oceanic and Atmospheric Agency, and National Science Foundation, the release said. Collectively, the United States and India have approximately 17,000 miles of coastline, making this official dialogue one of the largest bilateral diplomatic engagements in the world that is specifically focused on oceans.

Source: economictimes.indiatimes.com, 14 January 2017

The Arctic's Freakishly Warm Winter is Due to Humans' Climate Influence

For the Arctic, like the globe as a whole, 2016 has been exceptionally warm. For much of the year, Arctic temperatures have been much higher than normal, and sea ice concentrations have been at record low levels. The Arctic's seasonal cycle means that the lowest sea ice concentrations occur in September each year. But while September 2012 had less ice than September 2016, this year the ice coverage has not increased as expected as we moved into the northern winter. As a result, since late October, Arctic sea ice extent has been at record low levels for the time of year.

These record low sea ice levels have been associated with exceptionally high temperatures for the Arctic region. November and December (so far) have seen record warm temperatures. At the same time Siberia, and very recently North America, have experienced conditions that are slightly cooler than normal. Extreme Arctic warmth and low ice coverage affect the migration patterns of marine mammals and have been linked with mass starvation and deaths among reindeer, as well as affecting polar bear habitats. Given these severe ecological impacts and the potential influence of the Arctic on the climates of North America and Europe, it is important that we try to understand whether and how human-induced climate change has played a role in this event.

Arctic attribution

Our World Weather Attribution group, led by Climate Central and including researchers at the University of Melbourne, the University of Oxford and the Dutch Meteorological Service (KNMI), used three different methods to assess the role of the human climate influence on record Arctic warmth over November and December. We used forecast temperatures and heat persistence models to predict what will happen for the rest of December. But even with 10 days still to go, it is clear that November-December 2016 will certainly be record-breakingly warm for the Arctic.

Next, I investigated whether human-caused climate change has altered the likelihood of extremely warm Arctic temperatures, using state-of-the-art climate models. By comparing climate model simulations that include human influences, such as increased greenhouse gas concentrations, with ones without these human effects, we can estimate the role of climate change in this event. This technique is similar to that used in previous analyses of Australian record heat and the sea temperatures associated with the Great Barrier Reef coral bleaching event.

To put it simply, the record November-December temperatures in the Arctic do not happen in the simulations that leave out human-driven climate factors. In fact, even with human effects included, the models suggest that this Arctic hot spell is a 1-in-200-year event. So, this is a freak event even by the standards of today's world, which humans have warmed by roughly 1°C on average since pre-industrial times.

But in the future, as we continue to emit greenhouse gases and further warm the planet, events like this won't be freaks any more. If we do not reduce our greenhouse gas emissions, we estimate that by the late 2040s this event will occur on average once every two years.

Watching the trend

The group at KNMI used observational data (not a straightforward task in an area where very few observations are taken) to examine whether the probability of extreme warmth in the Arctic has changed over the past 100 years. To do this, temperatures slightly further south of the North Pole were incorporated into the analysis (to make up for the lack of data around the North Pole), and these indicated that the current Arctic heat is unprecedented in more than a century. The observational analysis reached a similar conclusion to the model study: that a century ago this event would be extremely unlikely to occur, and now it is somewhat more likely (the observational analysis puts it at about a 1-in-50-year event). The Oxford group used the very large ensemble of Weather@Home climate model simulations to compare Arctic heat like 2016 in the world of today with a year like 2016 without human influences. They also found a substantial human influence in this event. All of our analysis points the finger at human-induced climate change for this event. Without it, Arctic warmth like this is extremely unlikely to occur. And while it's still an extreme event in today's climate, in the future it won't be that unusual, unless we drastically curtail our greenhouse gas emissions. As we have already seen, the consequences of more frequent extreme warmth in the future could be devastating for the animals and other species that call the Arctic home.

Source: theconversation.com, 14 January 2017



Taiwan tries to keep Central American allies away from China

Taiwanese president Tsai Ing-wen heads to four Central American countries this weekend in an effort to stop more of the self-governing island's remaining diplomatic allies defecting to China. Beijing has restarted a diplomatic war with Taipei in response to US president-elect Donald Trump's suggestion that he might deepen ties with Taiwan and the election last year of Ms Tsai's party, which promotes Taiwan as a de facto independent country. Last month Beijing persuaded the tiny African nation of São Tomé and Príncipe to cut diplomatic ties with Taipei, leaving Taiwan with just 21 allies. But in the US backyard there is much more at stake than Taiwanese pride. Central American leaders, nervous about the incoming Trump administration, are eager to attract more Chinese investment into their underdeveloped economies. Beijing has an opportunity to enhance its influence — and ruffle US feathers — in the strategically important region if it can convince some of Taiwan's 12 diplomatic allies in Latin America and the Caribbean to switch sides. "If Taiwan is ejected from Central America, then China's interests in the US backyard could be a threat," says Lo Chih-cheng, a member of Ms Tsai's ruling Democratic Progressive party and the head of the foreign affairs committee in Taiwan's legislature. Taiwan's diplomatic ties in Central America go back to when the Republic of China, as it is officially known, was recognised by many countries as the legitimate government, rather than the communist People's Republic of China. In recent decades, however, it has had to rely on financial aid and technical assistance to maintain those relationships. Diplomats say several of Taiwan's Central American and Caribbean allies have been wavering for some time, enticed by the promise of more aid, trade and investment from China. "All our countries have been pressured to switch to mainland China," says Rafael Fernando Sierra Quesada, the ambassador to Taiwan from Honduras, which Ms Tsai will visit as well as El Salvador, Guatemala and Nicaragua.

If just one of the Latin American countries defects "it will open the floodgates", warns Jorge Guarjardo, a former Mexican ambassador to China. "I think China sees an opportunity to establish a beachfront right next to the US at an important time when the US is threatening them in the South China Sea." Mr Guarjardo says it is ironic that Mr Trump's efforts to reach out to Taiwan, after taking a congratulatory phone

call from Ms Tsai, are “actually exposing and weakening Taiwan’s position vis-à-vis China”. Ms Tsai will make stops in Houston and San Francisco on her way to and from Taiwan, with these transit visits traditionally affording a rare opportunity for the Taiwanese president to interact in person with US officials and lawmakers. But analysts believe she is unlikely to meet senior officials or Trump transition team members on this trip, for fear of exacerbating tensions with Beijing. Under its One China policy, Beijing refuses formal ties with any country that recognises Taiwan, which China insists is its territory. The lack of diplomatic relations does not prevent Chinese investment. One Chinese company is proposing to build a rival to the Panama Canal in Nicaragua, an ally of Taiwan, while the Dominican Republic, Haiti and Panama — also Taiwan allies — all have trade offices in Beijing. But formal ties would help to deepen trade and investment, while also allowing Beijing to offer development assistance and potentially establish military links.

“The new crisis of Latin America relations with the United States is an opportunity for China,” says Enrique Dussel-Peters, director of China-Mexico Studies Centre at the National Autonomous University of Mexico. “But this is a double-edged sword. This puts certain expectations on China to fill these gaps, to meet expectations of financing, trade and infrastructure.” Historically, US officials have not placed much importance on supporting the maintenance of Taiwan’s Central America relationships.

A professor of Taiwanese and Chinese politics at North Carolina’s Davidson College, says Washington ought to think more about the risks of growing Chinese influence in this region. “These countries are close to and very integrated with US society,” she says. “The US has a vulnerability to everything that happens in Central America, with so much attention domestically focused on immigration, which is related to dislocations in Central America.” Margaret Myers, director of the China and Latin America programme at Inter-American Dialogue, a US think-tank, says China will not find it easy to supplant the US as it is “still learning to navigate the region”. But as Mr Guarjardo, the former Mexican ambassador, points out, if Mr Trump pursues hardline policies towards China and Latin America at the same time, the potential for mischief-making is plentiful. “They could do something like send a ship to fuel in a Latin American port,” he says. “Little signals like that send a message: if the US wants to be in the South China Sea, we can just as easily push for our navy to make fuelling stops in South America.”

Source: www.ft.com, 06 January 2017

Why do Indonesia, Asean matter to China? The Jakarta Post Columnist

JAKARTA (THE JAKARTA POST/ ASIA NEWS NETWORK) - Early last year, Poppy Winanti and I wrote about China's increased investment in Asean, especially Indonesia, and whether China can behave responsibly. Since then The Jakarta Post has published a number of expert opinions on Indonesia and China relations, from the fear of China's rise as a regional hegemon to a balanced view on China, dispelling such a fear. But less has been said about one question: why do Indonesia and Asean matter to China? What drives China to put billions of dollars in Indonesia following various multilateral and bilateral agreements at the Asean level and between Indonesia and China?

In 2016, China became the third largest investor in Indonesia after Japan and Singapore. After the signing of the Indonesia China strategic partnership in 2005 and the upgrade into a comprehensive strategic partnership in 2013, China is now Indonesia's largest trading partner. What does it mean to be a strategic partner for China? One should note that since the early 2000s, China has signed strategic partnership agreements with 47 countries and three international organisations in which Asean is one of them. Feng Zhongping and Huang Jing (2014) argue that the boom of China's strategic partnerships is a result of China's embrace of globalisation and multi-dimensional diplomacy. It is a diplomatic instrument to secure China's core interests and its peaceful rise as a global power.

A comprehensive strategic partnership as articulated by the Chinese premier Wen Jiabao, in 2004, is an all-dimensional and multilayered, long-term and stable partnership that transcends differences in ideologies and social systems. It seeks to expand converging interests and seek common ground on the major issues while shelving differences on the minor ones. Along with Indonesia, other Asean members who have signed strategic partnerships with China are Vietnam, Cambodia, Laos, Myanmar, Thailand and Malaysia.

The strategic partnership is used by China as a diplomatic tool to protect its core interests, which include state sovereignty, national security, territorial integrity and national reunification. These core interests are reflected well in all documents of China's strategic partnerships. The question then is, why do Indonesia and Asean more broadly deserve a position as China's strategic partner? I would strongly argue that it is to protect China's core interest, its national security. In this case, securing its energy supply. Energy security for China, as Downs wrote in 2006, means the acquisition of sufficient energy supplies to protect China's core objectives.

In recent years China, has emerged as a global player in the energy sector. This is a result of soaring economic growth, hovered between nine and 10 per cent per year for three decades since 1980. And since 2012, China still shows impressive growth at a rate of seven to eight per cent. This is why China's demand for energy is massive and propels the country to undertake energy acquisitions worldwide. Domestic energy in China is scarce except in coal, but with low quality.

China became a net oil importer in 1993, a net gas importer in 2007, a net coal importer in 2008 and the first global oil importer in 2014. It means that in 2014, China has become a consumer of 30 per cent of global oil consumption and 45 per cent of global coal consumption. Given this enormous energy demand, China has no other option but to go overseas to secure energy supply.

Why is Asean strategic for China? It is because about 60 per cent of China's oil import is transported through the Strait of Malacca. A strategic partnership with Asean will help mitigate the risks of disruptions in China's energy transport from piracy, congested traffic, terrorist attacks and especially the naval forces of other major powers like the United States and Japan.

One way to mitigate the risk in the Strait of Malacca is the construction of the oil and gas pipeline from Madaya Island in Myanmar to Yunnan Province in China, which has been operational since 2015. It has cut by 30 per cent the time needed to transport crude oil to China and reduced the risk of piracy and other risks. Also, in November last year, China and Malaysia signed deals on defence. The two parties also agreed to resolve the South China Sea case on a bilateral basis. This further secures China's energy interest in the Strait of Malacca and South China Sea. Asean countries encompass all of China's energy shipping routes from the Middle East, Africa and Latin America. Therefore, it is in China's core interest to maintain peace and stability in the region and seek closer economic cooperation with Asean member countries including Indonesia.

When he came to power in 2014, President Joko 'Jokowi' Widodo projected Indonesia as a maritime power and this has become central in Indonesia-China relations since 2015. It sits well with China's Maritime Silk Road ambition. Indonesia's diplomacy toward China can be further improved to mutually benefit the two parties when we understand why Indonesia and Asean matter to China.

Source: www.straitstimes.com, 06 January 2017

Japan wary of China's push to give names to undersea features close to disputed areas

Japan says it is “watching very closely” the actions of the Chinese delegation to an international maritime organisation after it accepted Chinese names for undersea features that have previously been surveyed and named by Tokyo and are near its exclusive economic zone. An official for the Ministry of Foreign Affairs in Tokyo told *South China Morning Post* that the applications do not, at present, “directly affect the interests of nearby maritime nations” but some officials have described Beijing’s moves as “aggressive” and accused China of “seeking to assume control over territory”.

The Sub-Committee on Undersea Feature Names (SCUFN), which comes under the International Hydrographic Organisation and is based in Monaco, received 50 applications from the State Administration of China in 2016 to name undersea features, including sea mounts and ridges. The organisation released its annual report on December 21, in which it said 16 of the applications in the Pacific had been accepted while 34 were not. The *Yomiuri* newspaper reported that the sub-committee rejected most of the names because “naming them in Chinese may develop into disputes with coastal countries”. Among the applications that were turned down were eight close to the Southern Kyushu-Palau Ridge Region, which runs south from Okinotorishima, Japan’s most southerly island, towards Palau to the south. At least two of the sites that China sought to name lie in an area that Japan applied to exercise sovereignty over to the United Nations commission examining nations’ applications to claim continental shelf territory.

In 2014, the panel delayed a decision on Tokyo’s application for the region, which covers 252,000 sq km to the east of the Philippines and borders Palau’s EEZ. Six of the features that China applied to name appear to fall within Palau’s waters. Earlier this year, the Foreign Ministry in Beijing said Japan’s claim to the region is “illegal” and China does not recognise the EEZ or continental shelf claims of the Okinotori.

In 2012, SCUFN approved Chinese names for three undersea features some 450km from Miyakojima Island, in Okinawa Prefecture. Japan’s EEZ stretches 370km from Miyakojima. The ministry in Tokyo has emphasised that China has sought to name features that are in international waters and is therefore free to conduct such research. It is clear, however, that Japan is concerned at what is seen as a pattern of assumption of territories in the region and Beijing’s failure to cooperate – or even communicate – with Japan on surveys of the area.

The features close to Japan's EEZ have previously been surveyed and have Japanese names. "This sub-committee sits for the purpose of selecting names for features so they can be standardised for academic purposes," the official said. "Naming does not directly affect the interests of other maritime nations, although we are watching the situation closely." But Yoichi Shimada, a professor of international relations at Fukui Prefectural University, says Japan needs to make its concerns heard very clearly and that the foreign ministry is "too anxious about not provoking China to stand up for Japan". "This sort of aggression by the Chinese is nothing new," he said "They have made many claims against remote islands in the region and this is just the latest example ... Japan needs to protest any such move because failing to do so is only going to cause more and bigger problems in the future."

China is aware of the competition for undersea resources and rights, but naming features is "a common practice of the world's maritime powers", the Xinhua news agency said. Over the past six years, China has successfully had 76 names approved, including the 16 in 2016. Among the 50 Chinese proposals this year, 21 features are in the controversial nine-dash line, with which Beijing claims most of the South China Sea. The line had been declared by an international arbitration tribunal in Hague as invalid in July, a month before China's submission.

According to the SCUFN regulations, naming a feature does not necessarily give the namer any rights to it, since any country can apply names to an unnamed feature in international waters. But the regulations also ask other countries to recognise a name applied by a sovereignty state within its territorial sea. "Naming the undersea features ... reflects the potential rights China has to these features," a maritime expert Yang Suihua was quoted by Xinhua as saying.

Source: www.scmp.com, 07 January 2017

Turbulence in South China Sea: India Offers Missile to Vietnam

New Delhi (Sputnik) — India has offered to supply indigenously developed Akash missile to Vietnam at a time when both countries are talking of China's growing assertiveness in the Asia-Pacific region. India to Test Nuclear-Capable Submarine-Launched Ballistic Missile In fact, India has been helping Vietnam's defence modernization when it is trying in confrontation with China on the South China Sea issue. It recently underwrote the costs of four patrol boats that it will build especially

for Vietnam. Akash is a medium range air-to-air missile system developed by India's Defense Research and Development Organization (DRDO).

Akash has the capacity to destroy targets up to 30 km away. Initially, India will supply the missiles off-the-shelf to Vietnam and could later into a joint production arrangement. Vietnam has been a close Indian ally in South East Asia and Prime Minister Narendra Modi's visit to Vietnam last year saw both countries elevating their strategic partnership to a comprehensive strategic partnership. India-Vietnam defense ties are an important aspect of their strategic partnership. Earlier, India had offered to supply naval vessels to Vietnam as well as the BrahMos supersonic cruise missile. India also trains Vietnamese fighter pilots as both countries mainly operate Russian fighter jets. "It's a part of India-Vietnam defense cooperation. Supplying of Akash missiles by India to Vietnam is very small in comparison to what China had supplied to Pakistan. But it's a beginning," Srikant Kondapalli, Professor of Chinese Studies in Jawahar Lal University in New Delhi told Sputnik.

Source: Sputniknews.com, 09 January 2017

Is McDonald's A Victim of South China Sea Disputes?

McDonald's has no claims in the South China Sea. It hasn't taken any sides in the dispute between China and its neighbors either. Still, the South China Sea disputes may have had something to do with the company's decision to sell its businesses in mainland China and Hong Kong for \$2.08 billion to Citic, a state-owned conglomerate, and Carlyle Group, a private equity firm. How so? South China Sea disputes have ignited Chinese nationalism against every country that disputes China's quest to control the region. And America is on the top of the list, as are companies that are American business icons — like McDonald's, Apple and others.

Last July, Apple's stores in China attracted the angry protests of nationalists trying to boycott Apple products. Why? Because America has been on the Philippines' side of the South China Sea dispute. That's something Beijing and the nationalists who carried its message to the streets couldn't accept or comprehend. One week earlier, an international arbitration court found that China has no historic title over the waters of the South China Sea—a ruling which served to contain China's ambition to control trade and resources in the region.

Source: www.forbes.com, 11 January 2017

Why China Should Fear India's Arms Sales to Vietnam (Think South China Sea)

India is poised to sell its sophisticated Akash missile defense system to Vietnam, the latest development in a broad strategic relationship that has grown rapidly in recent years and added a new twist to the spiraling power contest in the South China Sea. The talks, consistent with India's ambition to be a major arms supplier, were first reported this week by the Times of India. The medium range surface-to-air missile, produced by New Delhi's Ministry of Defense, can target aircraft, helicopters and drones up to 25 kilometers away at a time when China is building up aerial defenses over fixtures it claims in the contested maritime area. India has also offered to sell its Varunastra anti-submarine torpedoes to Vietnam amid heightened tensions with China. Vietnam has steadily built up its military capabilities over the past decade, including a surge in new foreign procurements with applicability in the hotly contested South China Sea. Beijing reacted with irritation to last year's lifting of the US' long-held arms embargo against Vietnam. It has not yet responded to reports of the proposed Akash missile system sale.

Defense cooperation has been central to bilateral ties since 2007, when India and Vietnam signed a broad memorandum of understanding on training, exchanges, and visits. In September, last year, the two sides elevated ties from a "strategic" to a "comprehensive strategic" partnership, making India one of Vietnam's top strategic allies. Since 2011, Vietnam has doubled to 15 the number of global strategic partnerships it engages in a bid to diversify its post-Cold War diplomacy. The pending missile system sale comes to light after earlier talks on Vietnam's bid to procure the Brahmos short-range supersonic missile system, produced by an Indo-Russian joint venture, stalled without Russia's agreement. The Brahmos is known to be the world's fastest anti-ship cruise missile in operation. India and Russia plan to develop a new generation of the missile capable of hitting targets at a 600-kilometer range.

Indian Prime Minister Narendra Modi has put wind into the sails of Indo-Vietnamese defense cooperation. In October 2014, when then-Prime Minister Nguyen Tan Dung visited India, Modi said: "Our defense cooperation with Vietnam is among our most important ones. India remains committed to the modernization of Vietnam's defense and security forces." Ties were further enhanced in a 12-point Joint Vision Statement, headlined by a US\$500 million line of credit for Vietnam defense procurements from Indian producers, during Modi's visit to Hanoi in September. That line of credit was boosted fivefold from the US\$100 million

extended in 2014. Vietnam is a useful and strategic client for India as it looks to increase its weapons exports to US\$2 billion in coming years.

Bilateral defense education and training programs are also growing, as witnessed in rising Indian assistance to the Information Technology and Foreign Languages Training Center at the Signal Officers Training School in Nha Trang. The central coast town is near the strategic Cam Ranh naval facility, where Russia maintains residual influence from the Cold War era and the United States is now known to desire special access.

India has agreed to train Vietnamese pilots on Russian-built SU-30s and Sukhoi fighter jets and currently trains Vietnamese submarine operators on Russia-produced Kilo-class submarines. Vietnam purchased six of the vessels from Russia in 2009, the last of which was delivered in 2016. There is also an agreement on the peaceful exploration of space, including over satellites which India will launch from Vietnam to oversee sections of the South China Sea.

As long time clients of Russian arms, India and Vietnam already share a high level of force interoperability. Previously, Vietnam would even send Russian-made parts to India for repairs, as they were done more cheaply there than in Russia. Both nations have also undertaken significant force upgrades in recent years. From 2011 to 2015, Vietnam was the world's eighth-largest weapons importer, according to a report from Stockholm International Peace Research Institute.

India's arms sales to Vietnam are part of its 'Look East' policy, New Delhi's pivot-like policy toward Southeast Asia. The Akash missile system sale, if completed, may open the way for greater Indian access to Cam Ranh for purposes of maintenance and training. India is also involved in oil and gas exploration in the South China Sea, including areas that Vietnam claims. An Indian presence at Cam Ranh would be a potential deterrent to China interfering in such exploration operations, analysts say. Though China obviously factors into Indo-Vietnamese defense cooperation, Hanoi is implementing a wider hedging strategy. India's Non-Aligned Movement background and growing regional muscle make it a valuable ally outside of US-China competition for influence, as well as the uneasy non-alliance of China and Russia. How China reacts to India's rising military involvement in the South China Sea, however, is yet to be seen.

Source: nationalinterest.org, 11 January 2017