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Sri Lanka Navy Journal is a bi-annual publication which provides the opportunity to discuss matters relevant to Maritime, Strategic and global affairs. It serves as a potent medium for all serving members of the Navy to present ideas, express opinions and share insights on subjects of national and global importance whilst enabling them to improve writing skills and broaden the horizon of knowledge.

The journal publishes papers and articles of professional interest to the Sri Lanka Navy.

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FOREWORD

It is my sincere pleasure to welcome the maritime enthusiasts to the latest edition of the Sri Lanka Navy Journal (SLNJ). This issue, the 11th edition of the publication launched first in 2015, presents a diverse array of articles that delve into new perspectives on matters pertaining to maritime domain, national security aspects and, more broadly of global affairs. SLNJ is open to the entire fraternity of naval personnel including all levels of ability. As the commander of the Sri Lanka Navy, I take immense pride in issuing the foreword for SLNJ, the compilation of exemplary writing, thoughts and wisdom by the naval scholars.

The ocean has long been the primary focus in terms of economic prosperity and means of subsistence. The national economy significantly depends upon maritime activities such as fishing, sea transportation, tourism, offshore mining and energy generation. Paradoxically, even if expanding human activities in the seas contribute to global wealth, they are also to blame for the decline of maritime ecosystems. To this end, conservation and sustainability are major concerns and can be achieved only if the legal frameworks, which secure critical background conditions, are sufficient and enforced. This is where Navy comes into establish conditions for national economy to thrive. Therefore, Sri Lanka Navy has extended its mission through Naval Research Wing to research, analyse and bring meaningful insights for the issues pertaining to maritime domain, national security aspects and, more broadly of global affairs.

This issue of SLNJ features eleven papers written by authors from different expertise and is packed with informative and thought-provoking articles on Foreign Policy, Maritime Security, Artificial Intelligence, Blue Economy, Naval Training, Marine Environment Protection, a book review and award winning essays of the Admiral Clancy Fernando Memorial Essay Competition-2022. I also, appreciate the work of all contributors who submitted manuscripts, though only eleven papers have been accepted for publication. I congratulate all prospective wordsmiths of published papers and encourage budding talents to contribute their valuable insights in future publications.

I would like to express my sincere gratitude to the editorial board for their tireless efforts in bringing this publication to fruition. The guidance and support provided by the editorial board has been invaluable and has greatly contributed to the quality of the final product.

I hope that this issue of SLNJ will provide valuable insights and stimulate discussion among maritime professionals. As always, we welcome your feedback and submissions for future issues.

UVMP PERERA, RSP**, USP, ndu, psc
Vice Admiral
Commander of the Navy

Message from the Editor-In-Chief

Editorial board of Sri Lanka Navy Journal (SLNJ) is proud to produce its 11th edition of publication. Over the last 10 editions of SLNJ publishes number of articles of multidisciplinary, peer reviewed original research papers of naval researches ensuring with enhance of intellectual capacity. I'm sure that 11th edition of the journal has also strived to contribute to the academic discourse in maritime domain, national security aspects and, more broadly in global affairs.

One of the objectives of this journal is, to provide an ideal forum for naval researchers to present and discuss various matters, issues and phenomena in wide range of disciplines whilst encouraging the aptitude for research. Without being limited by the traditional categorization of naval subjects, the journal encourages to present multidisciplinary research papers focusing to broaden mental faculties of naval personnel and readers of wider interests.

The topics covered in the journal include a collection of high quality research papers, a book review and two winning essays of annual Admiral Clancy Fernando Memorial Essay Competition conducted by Sri Lanka Navy. It is our responsibility to mention that after screening plagiarism of all received manuscripts, a meticulous process of double blind peer review was followed to select the high quality research papers while maintaining high academic standards, academic ethics and academic integrity.

I would like to extend my gratitude to the Commander of the Navy for the guidance, and encouragement provided us throughout towards publication of this journal. Especially, I congratulate all authors whose research papers are published in this issue whilst encouraging all other contributors who submitted manuscripts, even those are not been selected to publish in this issue. Further, I extend my heartfelt gratitude to the reviewers, members of the editorial board, who have worked extremely hard during the reviewing process of this journal. Finally, I would like to thank the publication staff of Naval Printing Unit for their continued and substantial assistance with the successful launch of the journal in a timely manner.

While we always welcome Comments, suggestions and concerns, I invite the fraternity of naval officers and interested academia to join us to work towards making the journal a truly informative publication.

Thank you.

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CASE STUDY
ANALIYSIS OF FIRST SEA CONVOY ATTACK IN SRI LANKA NAVAL HISTORY

Rear Admiral Pradeep Rathnayake, RWP, RSP*,USP, ndu, psc, MMaritimePol, MSc (MS & NSSS)

Introduction

The LTTE Naval wing, popularly known as "Sea Tigers" during its existence, became a capable adversary to the Sri Lanka Navy (SLN). They posed a sizable challenge for SLN to maintain the control of Sea Lanes of Communication between Jaffna Peninsula of North and Trincomalee of East of Sri Lanka. Thus, attacks on sea convoys between Jaffna and Trincomalee were frequent during the LTTE launched civil war against Government of Sri Lanka (GoSL). This case will discuss the first sea convoy attack carried out by the LTTE against Sri Lanka Navy ships carrying 450 troops from Kankesanthurai (KKS) at Jaffna peninsula to Trincomalee on 02nd October 1995. The analysis aims to draw tactical lessons and place accurate account of the incident for future references and decision making.

During the period from 1995 to 2006, LTTE Sea Tigers have launched attacks on Sri Lanka Navy escorted sea convoys carrying troops and military hardware between KKS and Trincomalee in six different occasions. The first attempt was the attack on the Sri Lanka Navy Ship (SLNS) Ranagaja; a Landing Craft Mechanized (LCM) type vessel carried 170 Army personnel on 02nd October 1995. Subsequent attempts include attack on Merchant Vessel (MV) Nagaroma on 30th March 1996, SLNS Pabbatha and Valampuri on 22nd February 1998, MV Pride of South carrying 1316 troops from Trincomalee to Jaffna on 16th September 2001 and attack on MV Pearl Cruise off Vettilaikerny on 11th May 2006.

The Recount of the LTTE Attack on SLNS Ranagaja

Task Allocation and Convoy proceeding.   The LTTE launched its   first attempt to attack SLN escorted convoy on 02nd October 1995. The convoy consisting SLNS Pabbatha, SLNS Ranagaja, and L821 was bound to Trincomalee carrying 450 troops from Jaffna on leave. SLNS Ranagaja embarked 170 Army troops while SLNS Pabbatha and L821 embarked 187 and 93 soldiers respectively with most of soldiers carried their personnel weapons and other belongings onboard.

The convoy left Kankesanthurai harbour at 1030 hrs under the protection of five fast Attack Craft (FACs). The convoy instructions and escort plan had been given to Commanding Officers (COs) and Officer In-command (OIC) of FACs as follows;

- **SLNS Ranagaja.**   Commanding Officer (CO) held the total responsibility of the convoy as the Officer in Tactical Command (OTC).

- **P485 , P486 and P458.**   Assigned to Northern Naval Area (NNA) and tasked to escort up to the North –East Change of Operational Control (N-E CHOP Line).

- **P466 and P473.**   Assigned to Eastern Naval Area (ENA) and tasked to escort up to the port of Trincomalee.

- ENA to take over operational command from the N-E CHOP line and send FACs to continue escort to Trincomalee.

On this day the sea conditions were favourable, thus the convoy reached the N-E CHOP line around 1700hrs, one hour earlier than the Estimated Time of Arrival (ETA). It was expected that the FACs coming from Trincomalee arrive early at the N-E CHOP line and sanitize the area before take over the convoy. Conversely, the scheduled FACs was not available to take over the convoy due to its early arrival. Consequently, the OTC ordered P485, P486 and P458 to continue escort duties further until clear the Mulaitivu sea area as it was the Sea Tiger strong hold of the Northern province at the time. The OTC felt confident the units can safely and quickly pass the sea tiger strong hold with much ease.
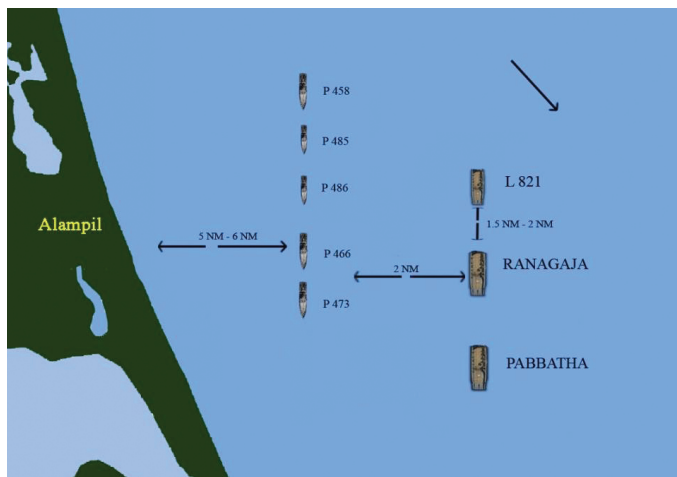
Figure 1: Convoy Plan
Source: Developed by Author

The units took positions in the convoy as illustrated in Figure 1. P466 and P473 positioned between land and the main body of the convoy (SLNS Ranagaja) to provide close protection from possible enemy attack approaching landward. SLNS Pabbatha and L821 were positioned at the ahead and astern of SLNS Ranagaja respectively. P486, P485 and P458 were positioned trailing behind L821 with instructions to pass the critical area on the orders of OTC until arrival of the craft expected to arrive from Trincomalee.

The Enemy Attack

While the convoy passing through Mullaitivu area which was considered the critical area, a cluster of enemy boats were appoaching from Mullaitivu coast was detected by the SLNS Ranagaja and SLNS Pabbatha. Having made the enemy contact report, OTC ordered P466 and P473 to intercept the enemy movement towards the main body. P466 and P473 approached the enemy cluster in a failed attempt to get the enemy boat cluster into the effective range of the 20mm main armament. Seeing the ineffective firepower of the two FACs, 12-16 enemy craft easily penetrated the landward defence and approached directly towards the main body which is SLNS Ranagaja. During this time P486 and P485 trailing behind rushed to support SLNS Ranagaja while SLNS Pabbatha and L821 altered course to 090^0 as per the evasive strategy and moved further towards the sea. Survivor's accounts reveals that it was a total chaotic situation where own units could not distinguish between friend and foe through the radar leading to a pandemonium where no one knew what to do and the worst case scenario would have been attacking own units due to misidentification. However, after sometime P486 and P485 approached close to the main body under the cover of darkness, despite being outnumbered by enemy craft.

Initially, P486 daringly engaged the enemy boats. It was a perfect asymmetric situation in which enemy boats largely outnumbered the SLN attack craft. P486 drew heavy enemy fire from many directions. Also they may have got into the crossfire of own units. It was a chaotic situation. In the midst of the confusion P485 thought, it was not the LCM but the P486 which was surrounded by enemy boats having assessed the scattered echo pattern on the radar display yet to be clarified through communication. After considerable time lapse Signal Centre at KKS confirmed, that P486 had left the scene one and half hour ago on sustaining damages to craft also with injuries to the OIC and one sailor. The withdrawal of the P 486 from the situation was not known to units present at the time. During the first few hours of the battle all the FACs engaged in the escort were totally disoriented and did not know where the enemy and own units were located. In the ensuing battle SLNS Ranagaja got isolated, yet was able to fire and destroy one approaching suicide craft just before it struck the LCM. The ship's communication and steering system was badly damaged due to the huge impact of the explosion in the close proximity. This made the ship spin around herself and move in a circular pattern without any communication.
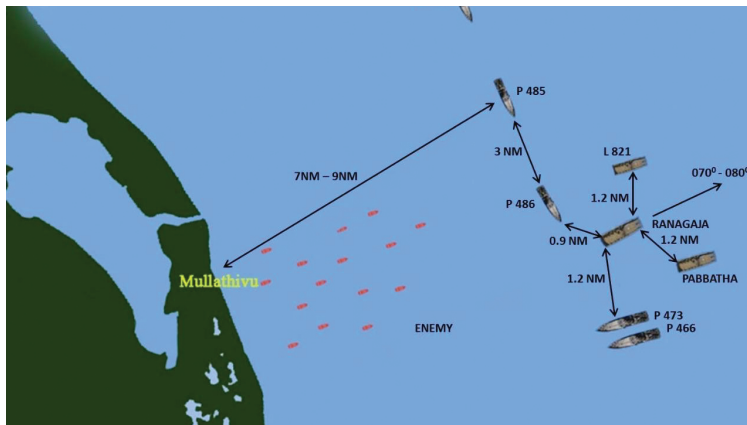
Figure 2: Enemy Penetrations
Source: Developed by Author

SLNS Ranagaja being a stable platform fitted with 14.5mm gun continued to attack when the enemy groups got close to the LCM, despite the serious casualties on-board. It was the sheer courage and determination of five gunnery sailors on-board who fought back being on-board LCM during the most difficult situation that anyone could imagine. FACs could not effectively assist SLNS Ranagaja due to the difficulty involving identification where the continuous firing of the main two 14.5mm, four 12.7mm, 7.62 mm MPMG, 7.62mm LMG and 40mm AGL guns kept the enemy away and also inflicted some serious damages to the enemy craft as well. The LCM had to fight alone until the situation and the tactical picture became very clear to everyone present.

Another favourable situation of that time, the ship was drifting towards the sea as a result of monsoonal current pattern. At the very beginning Ordinary Seaman Wettasinghe who accurately hit the suicide craft sustained a fatal injury and lost his life due to the explosion. Some Army soldiers also died and suffered heavy casualties as they were on the open vehicle deck. Commanding Officer also sustained with the minor injuries. Executive Officer (XO) and Senior Administrative Officers on-board did a remarkable job before sustaining them with serious injuries. They had quickly replaced Army soldiers who were familiar with 12.7mm guns when gunnery sailors got injured due to the enemy fire. Therefore, the ship could continue to fight back in spite of the losses.

The battle lasted for many hours. LCM had to fight her way through with three coordinated enemy groups who took turn while the SLN units were in disarray. The enemy used coloured lighting system to regroup after each attack run. Survivors of the ship told, the LTTE used an infrared beam to fire RPGs. In each enemy attack run LCM crew suffered casualties. However, LCM crew kept on firing until they ran short of ammunition during the late night. In the meantime, the ship managed to assemble a handheld communication set.

Finally, CO Ranagaja communicated the inability to continue further and expected the only remaining FAC, P485 to intervene. LCM crew was instructed to cease fire before P485 approach towards LCM. Seizing the initiative and cutting through enemy fire P485 reached closer to the LCM in the midst of cheers and applause of the Army soldiers. The other FACs, P453 and P458 in the vicinity also approached LCM from two directions and joined in. But the enemy was still looming at large desperate as they could neither destroy nor capture LCM.

By this time two FACs, P457 and P467 commanded by Lieutenant (Lt) rank officers had set sail from Trincomalee. P457 had boarded two SBS officers and team of Special Boat Squadron (SBS) personnel to board the ship in case of enemy capture the LCM. However, by the time they arrived on the scene the LCM had already settled on the tow of P485 and P457 embarked all the serious casualties while on tow and rushed back to Trincomalee for early medical treatments.

Discussion

The attack on the SLNS Ranagaja and other ships carrying 450 troops recorded as the first ever sea convoy attack in the history of SLN. The confrontation lasted for more than seven hours from 1745hrs on 02nd October to 0200hrs on 03rd October 1995 losing 20 lives and sustaining injuries to half of the ship's crew. This convoy attack marks a significant milestone in the history of SLN as the first ever sea convoy attack, one of the longest confrontations at sea and drawing many lessons for subsequent convoys those valid even for future applications. Discussed below are the areas where major lessons could be drawn.

Battle Tactics

In order to achieve victory, willpower and courage must always accompany tactical art and science and often dominate the outcome the battle. The LTTE carried out coordinated attack what could be resemble as "wolf packs" attack in the wilderness. The term wolf pack refers to the mass-attack tactics against convoys used by German U-boats of the Kriegsmarine during the Battle of the Atlantic and submarines of the United States Navy against Japanese shipping in the Pacific Ocean in World War II. Application of Wolf pack tactic by LTTE made a significant impact on the battle outcome. They coordinated many of their attack craft to single out SLNS Ranagaja carrying biggest number of troops and attacked continuously at the same target leaving no room for other craft to assist. Only the FAC, P485 was able to stay close to SLNS Ranagaja to assist fighting the enemy.

SLN also employed attack tactics by carrying out "attack runs" to employ a continuous fire on the enemy, however failed due to communication and radar failures and lesser effective ranges of main armament.

Communication

One of the greatest challenges faced by military commanders is the communication. Clear and concise exchange of information has always been vital to any successful military operation and none more so than in modern times. It was revealed that the communication between naval units had lost at the first few hours in the battle. P485 had not known the disappearance of her buddy craft P486 until Signal Centre - KKS informed. Also, much of lives would have been saved had the other craft could reach Ranagaja to save her. However, no craft could close to the ship due to the fear of misidentification. The situation started favourable only when the Ranagaja could establish communication with own units and coordinated fire which shaped the situation for P485 to tow the damaged ship out of danger. Conversely, enemy had wisely used the communication means to better coordinate of the Wolf pack attack. However, the enemy used coloured lighting system to regroup after each attack run, which immensely improved their communication without using voice communication. In each enemy attack run LCM crew suffered casualties. Therefore, this battle reiterates the importance of communication by many means and wise use of various communication means is essentially and a deciding factor in a battle.

Use of Technology

The technology is not tactics, but it may have a decisive effect in both altering the face of battle and affecting its outcome. Survivors of the ship observed that LTTE used an infrared beam to fire Rocket Propeller Grenades (RPG). Also the low profile of the LTTE attack craft offered a difficult target for SLN units. LTTE also used a lighting system to coordinate attack craft which eased up communication and improved their fighting efficiency. On the other hand, SLN units also wisely used technology for their advantage. One of the main advantages of the compact design of this 19 metres long P48 series FAC was, that she could deliver similar fire power of 71 feet Israel built FAC and could operate in extremely shallow water where the depth was less than one metre. Also, P485 being small, lightweight and low profile had the advantage of mingling with the enemy craft in the darkness. The low profile of the craft made it unidentifiable to the enemy. P485 transformed its technological advantage into tactical advantage and inflicted considerable loses to enemy changing the battle outcome.

Figure 3: P 485
Source: Developed by Author

This battle also proves the need of new technological advances as a conventional Navy. Main technological challenges faced by the SLN units include;

- Shorter effective range of main armament.

- Unavailability of radars with tracking facilities.

- Secure communication systems.

These technological lapses lead to a situation where identification of friend or foe became difficult and enemy could easily hear own communication. Therefore, this battle again proves that courage and resolve were powerless against progress and armour.

Fighting Spirit

The battle lasted for many hours. LCM had to fight her way through with three coordinated enemy groups who took turn while the SLN units were in disarray. At the very beginning ordinary seaman LWG Wettasinghe who accurately hit the suicide craft sustained a fatal injury and lost his life due to the explosion. Some Army soldiers also died and suffered heavy casualties as they were on the open vehicle deck. Commanding Officer was also sustained minor injuries. Executive officer and two senior administrative officers on-board did a remarkable job before sustaining with the serious injuries. They quickly replaced army soldiers who were familiar with 12.7mm guns when gunnery sailors got injured due to the enemy fire. Therefore, the ship could continue to fight back in spite of the losses.

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Fortune Favours the Brave

The SLNS Ranagaja had come to the end of her fighting efficiency while experiencing shortage of ammunition, deaths and injured troops on-board and maneuverable difficulty. CO Ranagaja communicated the inability to continue further and expected the only remaining FAC, P485 to intervene. LCM crew was instructed to cease fire before P485 approach towards LCM. Seizing the initiative and cutting through enemy fire P485 reached closer to the LCM in the midst of cheers and applause of the Army soldiers. The other FACs, P453 and P458 in the vicinity also approached LCM from two directions and joined in. But the enemy was still looming at large desperate as they could neither destroy nor capture LCM.

The only remaining option to save Ranagaja was to tow her out of the danger. It was a challenge for the FAC with 28 tonnes displacement to tow a 700 tonnes LCM. Further, water jet propulsion system on-board   P48 series had not been tested for towing. Also, it was evident the mismatch of the displacement and the power between towing and towed vessel that the towing operation was not a possibility. However, instructions from the engineering staff at the command operations room at Trincomalee was given to make an attempt to tow the LCM out of danger area even at the expense of the main engines of P485 considering the lives on-board the LCM were more important than the engines.

Thereafter, OIC P485 obtained a towing rope from LCM and secured it to the 20mm stern gun mount due to the absence of a proper towing bollard to take on the heavy weight of the 700 tonnes LCM. The trial and error that worked on that day reminded the famous quote "fortune favours the brave". The 28 tonnes boat supported by the long stay of the heavy rope gently gathered the momentum of the LCM. The delicate balance of RPM (Revolutions Per Minute) and the cavitation did the trick of the day despite having no previous knowledge of towing of hugely dissimilar type of vessels.

To the dismay of the LCM crew while the rope being secured to the port side of the ship another enemy craft which approached the ship from starboard side fired at the ship injuring the first additional officer in the leg before fleeing away. On engaging the main engines thrust against 700 tonnes LCM by 28 tonnes boat, the LCM slowly moved, despite the lifting effect of the astern of the boat. Later it was realised the towing operation was feasible only at a very low speed and speed cannot be increased. The success of towing operation brought the SLNS Ranagaja out of danger saving many lives and the ship. The bravery of fighting men, decisiveness, risk taking, adaptability, communication with command centres and inter branch corporation proved enormously vital in this towing operation.

Figure 4: SLNS Ranagaja
Source: Developed by Author
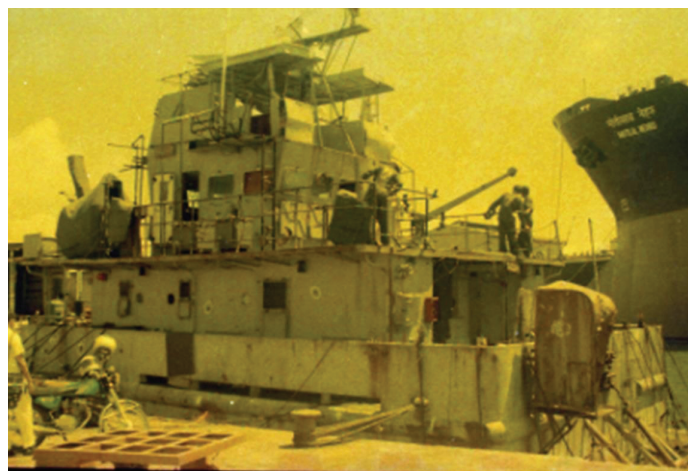
Figure 5: SLNS Ranagaja Battle Damages
Source: Developed by Author

Lessons Learnt, Recommendations and Conclusion

The incident led to uncover many areas of inefficiencies, lessons and to introduce developments to the naval fleet. Among many lessons, following proved vital takeaways of the incident;

- The tactics used by enemy enabled them to inflict heavy damages to SLN units. Also they were able to take the full control of the situation at the initial fighting as SLN units experienced difficulties in coordination. Therefore, tactical art is a prerequisite for the victory at any battle. Development of tactical art through battle studies and providing opportunities to exercise tactical situation is emphasized.

- Loss of communication at the initial stage led to a chaotic situation where units could not launch a coordinated attack on enemy instead enemy used better communication to overpower the technically advanced naval units. Therefore, it is reiterated that availability of different means to communicate, communication security and technical competency of using communication equipment should never be underestimated.

- Units involved in the operation did not have night fighting capability and secure communication sets. Therefore, the identification of the friend or foe became a main challenge. In a naval battle, though the courage and man power are significant, technology plays a vital role in deciding the outcome of the battle.

- The incident sparked lot of controversy, debated and questioned the morale of the FAC squadron despite, the credible action of few officers. At the tactical level lack of fighting efficiency and the fighting spirit had been observed by the authorities. Lack of confidence, boldness and poor commitment resulted due to absence of proper operational directives and briefings by the relevant authorities prior deployment of operational duties. However, despite the short comings, the courage and determination shown by all Officer and sailors involved were of highest order and they deserve to be heroes of the nation.

- The towing operation of the SLNS Ranagaja was never considered possible, however, 28 tonnes FAC towed 700 tonnes LCM out of danger which is a clear display of courage, risk taking and comradeship of the officers involved. It further teaches that decisiveness pays high dividends at the right time.

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IMPACT OF ARTIFICIAL INTELLIGENCE ENABLED SYSTEMS ON HUMAN SECURITY

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Abstract

Artificial Intelligence (AI) is the capability of computer systems to perform tasks that normally require human intelligence. Basically, AI is about computations that make it possible to perceive, reason, and act. AI is one potential way to enable real-time, cost-effective, and efficient responses to a variety of human security related issues. AI can play a big role in ensuring freedom of want, freedom from fear, and freedom from indignity aspects of human security. AI grew at a much faster pace due to growth in computing performance, availability of large data sets, and advances in machine learning techniques coupled with extensive commercial funding. In the Military sphere, AI transformed national security by improving the capability of the forces and decreasing the cost of engaging in military activities. The paper explores the advantages and disadvantages of utilizing AI in advancing human security and regarding the ethical concerns when dealing with humans.

Keywords: Artificial Intelligence, Human Security, Military

What is Artificial Intelligence?

According to US Defence Science Board, "Artificial Intelligence (AI) is the capability of computer systems to perform tasks that normally require human intelligence. Basically, AI is about computations that make it possible to perceive, reason, and act. AI is one potential way to enable real-time, cost-effective, and efficient responses to a variety of human security-related issues".

As a simple definition, Artificial Intelligence is the capability of a machine to act like a human with intelligence, learn from experiences, adapt to the most recent data, and work like people.

Human Security

Human security is a "concept that takes the human, as opposed to the state, as the primary locus of security" (Chatham House, 2017). It is widely known that there are a number of factors affecting human security. Commission on Human Security stated "human security is to protect the vital core of all human lives in ways that enhance human freedoms and human fulfilment. Human security means protecting fundamental freedoms, freedoms that are the essence of life. It means protecting people from critical and pervasive threats and situations. Human security integrates three

freedoms, freedom from fear, freedom from want, and freedom from indignity".

a. **Freedom from Fear.** It refers to "protecting individuals from threats directed at their security and physical integrity and includes various forms of violence that may arise from external States, the acts of a State against its citizens, the acts of one group against others, and the acts of individuals against other individuals.

b. **Freedom from Want.** It refers to the protection of individuals so that they might satisfy their basic needs and the economic, social and environmental aspects of life and livelihoods.

c. **Freedom from Indignity.** It refers to the promotion of an improved quality of life and enhancement of human welfare that permits people to make choices and seek opportunities that empower them"(UN OCHA, 2010).

Subsets of Artificial Intelligence

Artificial Intelligence executes tasks intelligently that yield in creating enormous accuracy, flexibility, and productivity for the entire system. Companies are increasingly making approaches to induce artificial intelligence technologies into their organizations to linguistics, bias, vision, robotics, planning, natural language processing, decision science, etc. (Dialani, 2020).

Machine Learning

Machine Learning (ML) is considered a subordinate area of AI that provides computers with an opportunity to derive learning skills from information and use that learning without human involvement. In a demanding position where an answer is hard to find due to a huge data set, AI is the best course of action. "ML could perform more than anticipation at processing that information, extracting patterns from it in a small amount of the time a human would take and delivering in any case out of reach knowledge", says the experts in data science management.

Neural Network

Combining cognitive science and machines to perform tasks is the idea projected through neural networking. The neural network is a subset of artificial intelligence that uses nervous system science, imitating the human mind where the human brain contains an unbounded number of neurons.

Deep Learning

Deep learning utilizes so-called neural systems, which "learn from

processing the labelled information provided during training and uses this answer key to realize what attributes of the information are expected to build the right yield", as per one clarification given by Deep AI. "When an adequate number of models have been processed, the neural network can start to process new, inconspicuous sources of info and effectively return precise outcomes."

Robotics

The discipline of robotics has reached great heights in the field of artificial intelligence. Developing and designing robots are an interesting area of study. The disciplines of mechanical, electrical, computer science engineering, and many more areas combine in tandem with robotics. The designing, producing, operating, and use of robots are the main components of robotics. Through robotics, computer systems could be managed, controlled, and achieve enhanced developments.

In many difficult tasks for people skills, robots are the answer in today's context. From transporting huge components required at space stations to automobile related work these robotic functions have created a paradigm shift in the contemporary world.

Computer Vision

Computers have been designed in such a manner that it could perform tasks in a speedy and faster way than the human skill. Besides, the demanding tasks are performed with minimum of effort and difficulty.

In some literature, AI is considered to be having machine learning and deep learning as major subsets in a single main sphere.

Key Drivers of Rapid Progress in AI Technology

These four key drivers are much important in AI related systems:

- Long period of high growth.
- Enhanced availability of large datasets capable of training machine learning systems.
- Upgrade in the implementation of machine learning techniques.
- Enhanced and swiftly increasing commercial investment.

Human Security Aspects of AI

The use of AI has number of advantages in the discourse of human security. It is a cost effective, efficient system that enables real time response. AI in many ways, it empowers human potential and, thus uses communication

related skills to good effect.

Advantages of Artificial Intelligence in Human Security

The concept of artificial intelligence has created extraordinary advantages for mankind over a short span of time. Especially the war making capabilities have been changed dramatically and the end results of waging war now mostly depend on technological advances such as AI.

- **Less Errors.**   The intelligent element of the machines which are subjected to AI has created a phenomenon where the errors are bear minimal. In the context of human intelligence, it is well recognized error ratios of various proportions.

- **Ability to Perform Complex Tasks.**   The AI-driven machines are exceptionally upgraded in many spheres and, thereby are capable of performing tasks of complex nature. These tasks force a real challenge on humans and most are not capable of meeting those.

- **Available on a 24/7 Basis.**   When the human tasks are replaced by AI-enabled systems, these tasks are handled on a 24/7 basis without any interruptions. Human fatigue is a factor that is quite difficult to address and creates situations similar to the fog of war.

- **No Risks.**   We can handle many risky limitations of humans by developing an AI robot that can perform risky operations for us. Tasks that can pose a danger to humans can pay off nicely when machines are put to work. AI can predict natural calamity, which in return, eases the pressure on humans and provide more accuracy in pinpointing technical details when compared to traditional manual methods.

- **Efficiency through Correct Decision Making.**   The AI component has enhanced the efficiency and effectiveness of the decision making process to a greater extent. Giving the data and situational information correctly, the AI has the ability to make far more efficient decisions than the human ability.

Disadvantages of AI on Human Security

Artificial Intelligence is systematically and gradually changing the complexities of military domain. Although it has created certain dimensions for the benefit of war making process, the negative factors need special attention at all times. The traditional combat capacities have been subjected to constant changes due to the advent of AI. The main disadvantages of AI enabled systems are shown as follows;

- **The High Cost Factor.**   In order to create the ability of humans in the machine, it requires a colossal amount of expertise as well as

resource allocation. In that the involvement of money for the said exercise is extremely high. Creating human thinking with rational strength and reasoning ability is anyway not an easy task. Hence, the high cost factor is a definite negative point in relation to AI.

•   **Reducing Work for Humans.**   Though AI offers various benefits, it is also creating unemployment. The need for human interference is decreasing with the usage of AI-enabled machines which provides error-free and risk-free work. Machines also bring with them speed and accuracy, which kills many job opportunities and employment options that were once present.

•   **Zero Ethical Behaviour.**   The machine would continue the given command irrespective of the outcome. However, the complex nature of human society warrants much more ethical thinking and behaviour. These vital concerns have taken a centre stage in today's environment.

•   **Reducing Human Involvement.**   The AI-based machines have created an environment where the skills of humans have been mainly replaced. The outcome has been fewer opportunities for humans where the employment opportunities would reduce drastically in the related field.

•   **No Concern for Ethics.**   The machine obviously has zero ethical concerns and thereby finds it difficult to perform in a given situation. Especially where the ethical factor might decide on the level of destruction needed the machine would just go ahead and might lead to a disaster, although the end results may have been achieved.

•   **Human Skills Lead to Erode.**   The excessive use of AI enabled systems would lead to a scenario where the humans tend to be lazy, thus energy for devotion and commitment would reduce.

AI Privacy and Security Challenges

AI at times has created a series of challenges and difficulties through its mode of operation. The high level of usage of datasets is a primary concern in this regard. It is established that human security has met with unprecedented challenges with regard to AI-based breaches. Most organizations are advised to keep their data assets closely guarded in highly secure systems and, due to cyber-attacks of all kinds, it is unlikely for organizations to allow data to move freely into and out of their organizations.

Keeping with less security the datasets of AI is an attractive target for hackers. Hence, there is a severe need for regulations surrounding AI, and how to protect patient data using these technologies. Ensuring privacy for all data will require data privacy laws and regulations to be updated to include data used in AI and ML systems.

Advancing Human Security through AI

According to the United Nations Human Development Report of 1994, none of the primary goals such as peace, human rights, environmental preservation, population management, and social integration can be achieved without promoting people-centred development. All nations must realise that being proactive rather than reactive, that is, repairing the harm and returning to normal, is less expensive.

The inability to know about dangers in adavance, the inability to plan proper courses of action to face such threats, and the incapability to empower individuals to adequately act are three major limits on human security-related tasks. Solving these problems could save tens of thousands of lives. Artificial intelligence (AI) could be one technique to offer real-time, cost-effective, and efficient answers to a number of human security challenges.

Knowledge

When raw data is evaluated with meaning and context, knowledge is formed. There are a few roadblocks in the way of generating knowledge to address human security issues. The first stems from the massive amounts of data that coming generations will collect as a result of numerous devices and social media content. There will be a mechanism to interpret and analyze these data to forecast extreme weather events, understand war zones, political unrest, and social events. Another area in which AI can be used to improve human security is health. It can recognize patterns faster and more accurately than people thanks to high-resolution images. This has proven especially true when it comes to the diagnosis of some cancers. Another important topic is enabling mobile healthcare delivery and tailored treatment using smartphone diagnostics, which will benefit millions of additional people.

Planning

It is also necessary to be able to prepare a suitable reaction, in addition to obtaining and contextualizing knowledge. Planning achieves objectives and ways to carry out dynamic and multi operations swiftly, appropriately, and dependably.

The fact that preparation occurs after all of the governmental hurdles have been cleared lengthens the time and it takes to launch a human security mission. Considering that many humanitarian crises involve on-going wars, most of the necessary information is already accessible and might be utilized to develop basic operations or contingency plans.

As a much greater amount of data from multiple resources, satellite imaging, and AI would aid significantly in a variety of human security-related scenarios,

such as complicated humanitarian crises, either governmental or natural disasters.

Empowerment

As human security has such a broad definition, AI can assist individuals in a variety of ways. The point is that such programmes help actors to make better judgments by empowering them. "Human security necessitates people-centred, comprehensive, context-specific, and prevention-oriented responses that improve the protection and empowerment of all people and communities" (Chang et al, 2007). As a result, achieving empowerment is difficult. Due to the lack of emotion in AI systems, the contribution of AI for empowerment is dubious, and in other cases, the same empowerment of machines may foster racist, sexist, or extremist ideas. As a result, AI could be employed cautiously to empower human activities through the employment of machines.

Analysis of AI on Equity, Transparency and Accountability

Finally, as more data is used to influence the decisions and, as algorithms are increasingly employed to shape, guide, or make these decisions, people must demand openness, accountability, equity, and universality from these applications. All of these things go into guaranteeing a fair distribution and reporting benefits of AI.

Individuals, groups, NGOs, and governments must use broader data-sharing schemes when it comes to disaster assistance, preventive diplomacy, human rights protection, and justice applications.

However, it is equally critical that data be protected to the maximum extent feasible while being shared and acquired. One of the first focus areas for privacy, transparency, and accountability rules, best practices, and legislation is health.

In other words, AI that allows human security must be designed to minimize human insecurity, maximize human empowerment, and be as equal, transparent, and accountable as feasible. The repercussions of algorithms incorrectly categorizing or failing to prepare properly could be disastrous. As a result, good policy, regulation, and accountability mechanisms are required. These can range from putting in place a set of standards ahead of time to enacting remedial or coercive actions after the event. AI must be sensitive to context, vulnerability, and capacity-building, but should be governed by good judgment, foresight, and justice ideals.

Conclusion

AI is one potential way to enable real-time, cost-effective, and efficient

responses to a variety of human security-related issues. AI can play a big role in ensuring freedom of want, freedom from fear, and freedom from indignity aspects of human security.

AI grew at a much faster pace due to growth in computing performance, availability of large datasets, and advances in machine learning techniques coupled with extensive commercial funding.

There are significant advantages of utilizing AI in advancing human security, just as there are disadvantages in some aspects such as reducing work for humans, making humans lazy, and AI not having ethical concerns when dealing with humans.

The inability to know about dangers in advance, the inability to plan proper courses of action to face such threats, and the incapability to empower individuals to adequately act are three major limits on human security-related tasks. Solving these problems could save tens of thousands of lives. Artificial intelligence (AI) could be one technique to offer real-time, cost-effective, and efficient answers to a number of human security challenges.

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WORKABLE STRATEGY TO EXPLORE INTO THE BLUE ECONOMY IN SRI LANKA

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Abstract

The concept of the Blue Economy is relatively new in Sri Lanka but already looks very promising in the global economy. It is a hope and a means of developing the country in the near future. Since Sri Lanka is geo-strategically located close to the one of the busiest international shipping lanes, it has the potential to increase the Blue Economy to address the present economic crisis. The abundance of beautiful beaches, natural harbours, deep water ports, natural resources, tourist attractions, potential of renewable energy, and fishery industry are some of the opportunities which Sri Lanka has on Blue Economy. On the other side, illegal fishing practices, exploitation of natural resources by others, overfishing, the rise of the sea water level and global warming, maritime pollution and ship accidents, and the increased Transnational Organized Crime activities have negatively impacted the Blue Economic potential. Hence, the role of the Sri Lankan Armed Forces is a very important factor. This is especially true for the Navy and the Coast Guard which revolve around the protection of the nation's maritime interest in peace and war. Overall, Sri Lanka will be able to sustain any future global economic crises as a middle-income country by utilizing the potentials of the Blue Economic concept.

Keywords: Blue Economy, Transnational Organized Crimes, Armed Forces, Navy, Tourism

Introduction

Oceans and seas constitute 70% of the surface of the earth. More than 90% of the world's living and non-living resources are found within a few hundred kilometers of the coasts and nearly 2/3 of the world's population lives on the seacoast. The ocean offers food, minerals, tourism, chemicals, oil, gas, and energy. Since ancient times, the ocean is the cheapest means of transportation and a major source of food. Moreover, the ocean influences the weather, climate, monsoon seasons, and biodiversity. Therefore, the sea is a vital source of growth and prosperity for many nations (UNCTAD, 2020).

The Blue Economy concept is new and at a stage where a comprehensive definition has yet to be formulated due to its ever-evolving nature. However, the Blue Economy has been synonymously called the green economy, the coastal economy, the marine economy, and finally, the ocean economy. The Blue Economy has been termed as an ocean economy that is focused on the livelihood improvement and well-being of humans. Furthermore, the reduction

of environmental risks, limiting scarcities in ecological systems, and social equity were discussed at the United Nations Conference on Sustainable Development (UNCSD) held in Rio de Janeiro in 2012 (UNSD, 2014). The Blue Economy decouples socio-economic development from environmental degradation within ecological limits effectively and efficiently by optimizing marine natural resources. The Blue Economy further constitutes economic activities taking place in a particular coastal area directly or indirectly using the sea as a process for economic benefit (UNSD, 2014).

The Blue Economy business model is thought to be able to shift society from scarcity to abundance. As a result, the Blue Economy concept and perspectives are spreading around the world and are proving to be diverse, dynamic, and wide-ranging. Blue Economies are very prospective and resourceful which could determine the sustainable development of the future. Every maritime nation in the world is heavily dependent on oceans for fishery industry, exploitation of minerals, oil and gas, renewable energy, hydrocarbons, rare earth metals, and other living and non-living resources as an income for living and to attain economic development. In this regard, it is a matter of great concern for the developing countries to attain growth and development through the optimal and sustainable use of oceanic resources (Gjerde, 2001).

Blue Economy is a new concept for Sri Lanka. The government has not yet totally developed a strategy to utilize the Blue Economy for the country's development and prosperity. Sri Lanka, as an island nation, must consider the seaborne economy as about 95% of the country's export and import activities are through the sea. Moreover, 80% percent of sea transport transit through the Indian ocean and easy access to the East and the West sea lines provide Sri Lanka a considerable opportunity to prosper Blue Economic potentials. Further, it is estimated that about one million people in the country are directly or indirectly dependent on oceanic activities and another three million also depend on the ocean and related activities. Sri Lanka has a coastline of 1,340 km and a sea area seven times larger than the landmass. Sovereign rights have been established on more than 21,500 square kilomtres of territorial waters and 517,000 square kilomtres in the 200 nautical miles of the Exclusive Economic Zone (EEZ) (Martenstyn, 2015).
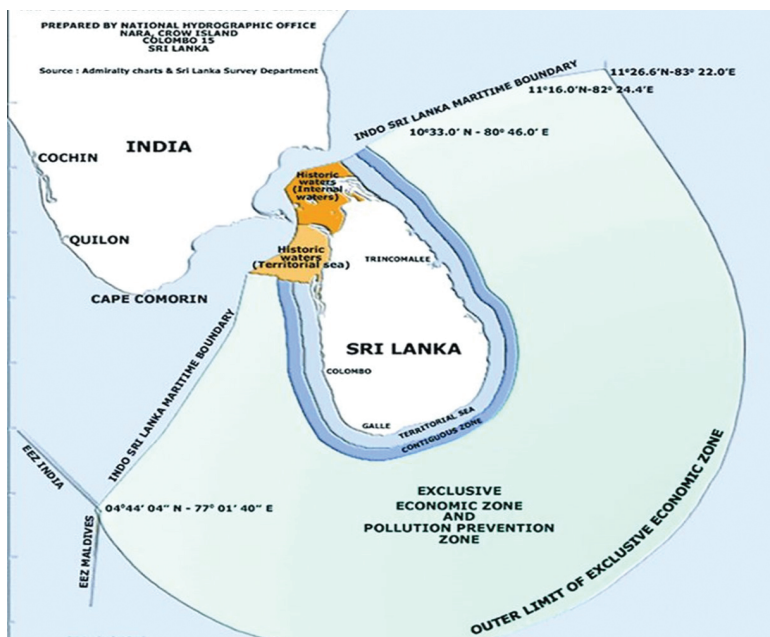
Figure 1: Maritime Zones
Source: Maritime Doctrine of Sri Lanka, 2020

The Easter Sunday attacks in 2019 and the COVID-19 pandemic have severely affected the Blue Economy of Sri Lanka. As a result of prolonged curfews, lockdowns, inter-district travel restrictions, and health protocols, the Sri Lankan GDP dropped from 3.6% to 2.3%. Furthermore, the tourism industry, which was contributing to 5.1% to the GDP, has also dropped as tourist arrivals were reduced by 70%. Finally, the COVID-19 health guidelines also resulted in a sharp decline in the fisheries sector which contributed to 1.6% of the GDP. Fish and seafood consumption was reduced and retail sellers were affected, mainly after the second wave at the Peliyagoda fish market. Additionally, the fish export market is also affected due to the shutdown of airlines. As economic activities came to standstill, some micro, small, and medium-sized industries, hotels and trades had also collapsed (Wijayasiri, 2019).

Concept of Blue Economy

The concept of the Blue Economy is still very new and thus, still in an evolutionary stage. There is yet any comprehensive and appropriate definition of the Blue Economy from an operational point of view. From the Blue Economy perspective, oceans and seas are considered to be 'Development Spaces' which integrate the sustainable use of living and non-living resources. These include oil and the extraction of other minerals, their conservation, bio-prospecting, renewable energy production and marine transportation (UNSD, 2014). Moreover, the Blue Economy is seen as the combination of marine economic

development, environmental sustainability, social incorporation, innovatory dynamic business models. The Blue Economy conforms to sustainable economic development by managing various ocean/seaborne activities and the resources of the blue sea.

> • **Vision and Strategic Path of Sustainable Sri Lanka 2030.**   The sustainable development vision and the strategy of Sri Lanka by 2030 are that "Sri Lanka hopes to become a sustainable, upper middle income, Indian Ocean hub with an economy that is prosperous, competitive and advanced; an environment that is green and flourishing; and a society that is inclusive, harmonious, peaceful and just. We will follow the middle path based on balanced inclusive green growth" (Anon., 2019).

> • **Objectives of Blue Economy.**   The objective of the Blue Economy is "to promote smart, sustainable and inclusive growth and employment opportunities within the Indian Ocean region's maritime economic activities" (IORA, 2019). The main objective of Sri Lanka's conservation of the Sri Lankan Shoreline, Beaches, and Waves project is to contribute to the preservation of coastal biodiversity and natural heritage, "to preserve and encourage economic opportunities, and to reinforce social links" (AFD, 2020).

The European Parliament Research Service (2020) has defined the concept of the Blue Economy as 'encompassing all economic activities relating to oceans and seas. The Blue Economy was viewed as the Ocean Economy in the 2012 UN Conference on Sustainable Development (UNCSD) which was aimed at the 'Improvement of human well-being and social equity while reducing ecological scarcities and environmental risks significantly' (UNSD, 2019). The paper titled "The Future We Want" underlines the contribution of the ocean to the growth of mankind where it highlights the importance of sustainable use and the conservation of the natural resources at seas and for sustainable development (UN, 2012).

According to Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), the Blue Economy is the set of socially and environmentally supportable money-oriented ventures, products, services, and investments reliant on and influencing coastal and marine resources. The projects which disintegrate natural reserves through the degradation of ecosystem services are essentially not supportable and not "blue" (Whisnant, 2015). Whisnant and Reyes (2015) argues that four key elements are present in marine economic activities that can be considered a Blue Economy:

> • Creates sustainable, equitable economic benefit and inclusive growth.

> • Sustains healthy marine ecosystem resources across restoration and protection.

> • Innovates, and is backed up by the best available science.

- Integrate approaches between multiple industries and government.
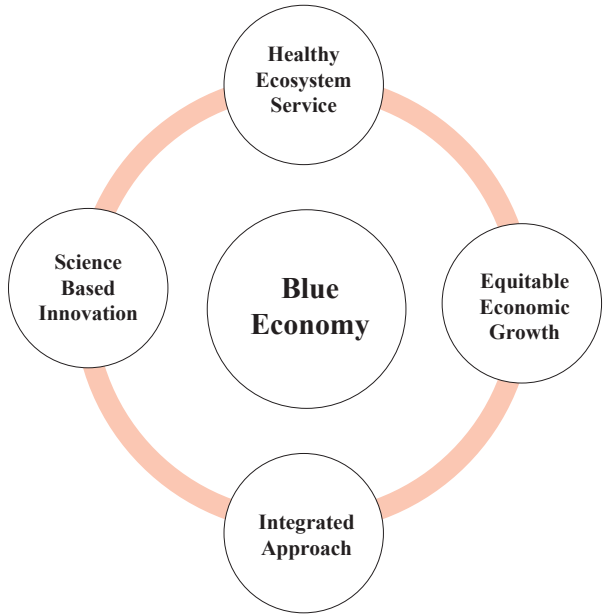
Figure 2: The Key Elements of Blue Economy
Source: Whisnet and Reyes (2015)

The Blue Economy is very popular for the surfacing focal points of oceans and coasts as a provable enforcer of the economic growth of a nation. Even though the concept of the Blue Economy is not very new, there is no common definition yet established. Therefore, governments and other related maritime organizations have defined it for their understanding. The Bandaranayake Centre for International Studies (BCIS) has identified that the Blue Economy concept in Sri Lanka can be developed tremendously in various emerging sectors such as oil and gas, fisheries, shipping, and port facilities, mid-sea bunkering, seaborne trade, maritime legal services, coastal tourism and sports, resorts and coastal development, aquaculture, renewable blue energy, marine biotechnology, seabed mining, cruising, ferrying, and environmental services, etc. (Kumar, 2019). Moreover, the sea and waves have enormous potential to generate renewable energy such as wind power and tidal energy (Daud, 2019).
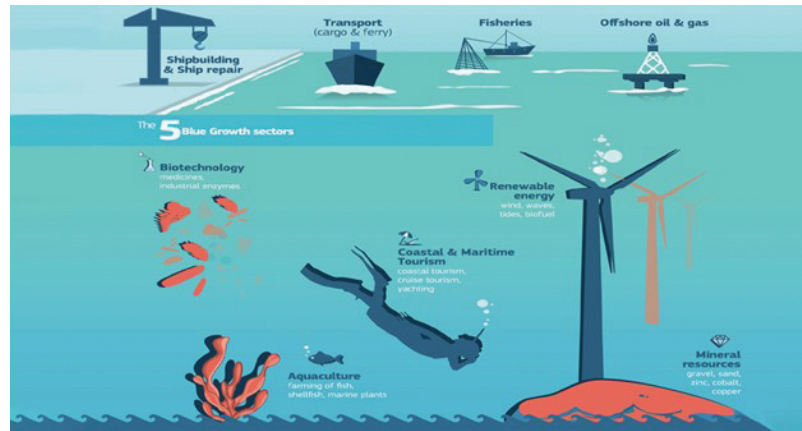
Figure 3: The Blue Growth Sectors
Source: Zogopoulos (2020)

Fundamental Features of the Blue Economy

The Rio20 Outcome Document - The Future We Want, (2012) and the Blue Economy Concept Paper of the UN Conference on Sustainable Development (UNCSD) described the concept, development, prospect, and challenges of the Blue Economy and the commitment to sustainable use of oceans and seas. The Rio +20 preparatory process presented strong positions for a more prominent Blue Economy approach. They promoted the Blue Economy as a tool for Small Island Developing States (SIDS) and coastal states to respond to their sustainable development challenges. Following the Rio+20, it became apparent that in-depth attention and coordination are needed to preserve the world's oceans and seas.

The concept of the Blue Economy is a tool for maritime nations to shift toward a sustainable development route. Fundamental to the Blue Economy technique are the equitable principles through which the prospering maritime nations can:

•   Optimize the Blue Economic assistance by developing marine and other related sectors such as mineral extraction, bio-prospecting, and fishery.

•   Advocate gender equality, national equity, decent jobs for all, and generation of inclusive growth.

•   Reflection of concerns and interests while developing maritime areas away from the national jurisdiction of a coastal nation.

Adherence to the principle of equity would allow the states at international and national levels to earn income from the available resources. Furthermore, this revenue can be reinvested in national development to eradicate poverty and

endorses the productivity of healthy marine ecosystems as a pathway for marine-based economies. The crux of the Blue Economy is the socio-economic expansion avoiding environmental degradation. Thus, the Blue Economy concept focuses on the incorporation and assessment of the absolute amount of marine financing into various fields such as maritime infrastructure development, exploitation of surface and subsurface resources, seaborne travel, maritime trade, tourism, and generation of renewable energy and effective consumption of resources. On the other hand, conceptualization, effective planning, productive utilization of resources, and optimization of them are very important actions being as a coastal nation must implement concerning ecological and environmental systems (Colgan, 2017).

Prospects of Blue Economy in Sri Lanka

Sri Lanka is situated at the epicenter of the Indian Ocean where it is near the busiest international maritime route connecting the East and the West. It has deep-water ports, a natural harbour in Trincomalee, and navigable waters are ideal assets for Blue Economy. Further, there are 19 main fishery harbours, 40 anchorages, and more than 1,500 landing sites for fishermen. Sri Lanka also has two monsoons (South West and North East) to its advantage. The sea area is 7 times larger than the landmass which has an abundance of resources for the Blue Economy. Moreover, Sri Lanka has requested from the UN to increase the Exclusive Economic Zone (EEZ) through submission and if approved, the total sea area would be 21 times the total landmass (Bank, 2022). To achieve the UN Sustainable Development Goals (SDG) by 2030 to end poverty, peace, and prosperity for all people and to protect the planet, Sri Lanka must fulfil this aim. Further, SDG 14 is about the Blue Economy (Life below water) and it is a very good opportunity for our policymakers to explore and enhance the Blue Economic potential of the country (UN Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development, 2015).
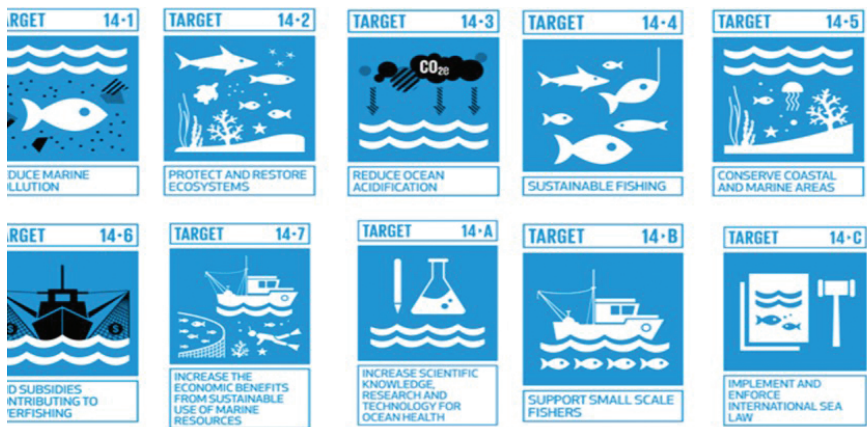
Figure 4: Sustainable Development Goal -14
Source: United Nations (2022)

Since Sri Lanka's marine environment is rich with harbours, beaches, lagoons, natural waterways including inland waters, ecosystems, and a variety of natural resources, our coastal community is heavily dependent on tourism and fisheries. Moreover, mangrove forests, seagrass, coral reefs, and shipwrecks provide ideal breeding grounds for fisheries. Some of the prospects we have as an island nation are as follows (UNCSD, 2012).

a. **Fisheries.**   It Contributes 1.6% of GDP.

- Capture fishery using modern technology.

- Aquaculture - breeding, raising, and harvesting fish, shellfish, and aquatic plants for the export market.

- Seafood processing – mainly for the export market.

- Provision of 65% of animal protein available at the sea bed.

- Direct employment of 583,000 individuals.

- Supporting a workforce of another 3 million.

- Marine fishery sector provides 415,490 MT of fish annually.

- Inland sector also contributes 90,340 MT of fish annually.

- Annual fisheries export income is USD 287 million.

- Domestic annual income is USD 171 million.

b. **Maritime Commerce, Shipping and Logistics.**

- Export and import – annual revenue of LKR 5,609 million.

- Container transhipment of 70% to India mainly from the Port of Colombo.

- Handles an annual container volume of 7.25 million.

- Can take Triple 'E' class ships (largest container ships) to the newly expanded Colombo South harbour.

- Maritime legal services provide income.

- Bunkering and logistics are also very lucrative services.

- Maritime financial services.

- Ship repair and ship building facility at the Colombo Dockyard.

c. **Tourism.**

- 1.9 million Tourists arrived in 2019 and so far surpass 100,000 only in the month of March 2022.

- USD 475.20 million of revenue recorded in 2019.

- Contribution of 5.1% toward GDP.

- 156 classified tourist hotels (star class).

- 239 unclassified tourist hotels.

- Direct employment of 400,000.

- Snorkelling, diving, surfing, jet skiing, underwater museums are some of the facilities available for tourists.

- Whales and Dolphins watching are also bringing good income.

- Turtle's hatchings are also very popular among tourists.

d. **Ship Building and Repairing.**   Neglected are a by the government of Sri Lanka has only the Colombo Dockyard Limited (CDL) which brings revenue of USD 52.18 million. More recently, the CDL received a USD 240 million offer to construct ships. CDL is not only building ships but undertakes repairs as well.

e. **Mineral Resource and Hydrocarbon.**   Sri Lanka has sufficient mineral sands such as Ilmenite, Rutile, especially on the East coast. Further, the possibility exists to explore oil and gas in the Mannar basin. Exploration of hydrocarbons such as methane, ethane is also a very good option the country has.

f. **Renewable Energy.**   Since Sri Lanka has two monsoons, exploring renewable energy would be a better choice and an ideal solution to replace hydro energy. So far we have only one wind power in Mannar (100 MW) and we can expand it to the Eastern sector of the country also. Furthermore, wave energy using sea tides is a new concept that we can experiment with. At the moment we have a Norwegian government-funded floating solar tidal energy plant of 46 kW at the Jaffna University premises in Killinochchi.

g. **Yachts and Boat Building.**   Historically, Sri Lanka has been famous for boat building. However, it reduced dramatically. Still, SLN, Blue Star Marine, Neil Marine, Cey-Nor, and a few more boat-building yards in down South build boats. Additionally, Yacht Marinas at the Port City and in the Galle harbour could be expanded to provide better facilities to the tourists.

Challenges to the Blue Economy

Sri Lanka should initially solve its issue with India over the Kachchativu Island and International Maritime Boundary Line (IMBL) diplomatically to prevent Illegal Unreported and Unregulated (IUU) fishing and poaching by the Indian trawlers. Further, the Island nation should enhance its regional cooperation for the effective exploration of Blue Economic resources, especially in the Palk Bay, Palk Strait, and the Gulf of Mannar. Lack of regulation, unhealthy practices like bottom trawling, illegal businesses such as human smuggling,

transfer of narcotic drugs, and smuggling of goods from India are some of the major concerns of Sri Lanka (Ranasignhe, 2017). Some of the other challenges Sri Lanka facing right now are listed below;

- IUU fishing by both local and foreign fishermen mainly Indians.

- Overfishing due to illegal fishing procedures and unreported fish stocks.

- Depletion of fish stocks mainly by bottom trawling, dynamite fishing, and environmental damages to the breeding grounds.

- Global warming and rise of seawater level.

- Coastal erosion due to monsoons and destruction of Corals and Mangroves.

- Rising levels of Carbon Dioxide impacts marine ecosystems.

- Illegal exploitation of natural resources by other countries due to the lack of proper surveillance in our EEZ.

- Transit hub for Transnational Organized Crime activities (TOC) such as human smuggling, drug trafficking, and maritime terrorism.

- Coastal pollution and ocean pollution.

- Impact of Ballast water from Merchant Shipping as ships become a carrier for the transfer and spread of threatening invasive aquatic species.

- Ship accidents and oil leakages which damaging the beaches, sea bed, corals, killing marine life and pollution.

- Acoustic pollution close to ports.

- The energy crisis in Sri Lanka is severely affecting the port operations, fishery industry, and tourism industry.

- Prolonged power cuts are also affecting the tourism, fishery industry, and port operations heavily.

- The high cost of living is also impacting heavily on the tourist sector.

Workable Strategy for the Next Five Years

Sri Lanka has enormous potential in Blue Economy. The Author after analyzing the potential and the challenges which faced by the Sri Lanka has on Blue Economy identified as a viable and workable strategy for the next five years. Thereafter, It was felt that Sri Lanka needs to mainstream the ocean economy to the Sustainable Development Goals of the UN. Further, an all-inclusive effort to the resources within ecological systems, resources, and limits must be made to find opportunities in the marine environment (UNCTAD, 2014). The following

strategies are recommended for the consideration of the government of Sri Lanka;

- Generate awareness about the Blue Economy and its influence on sustainable economic development.

- Comprehensive reforms in the maritime sector and promote transparent and predictable marketing.

- International cooperation and support to elevate Blue Economy sectors.

- Partnerships with maritime agencies and International Maritime Organization (IMO) and integrating all maritime stakeholders.

- Sustainable management and protection of marine and coastal ecosystems with the support of the commercial sector in Sri Lanka.

- Enhance maritime surveillance by the Sri Lanka Navy, Coast Guard, and Air Force to curb TOC group activities and illegal exploitation of resources at sea.

- Aquaculture developments and attract private investment.

- Inter-Organizational Coordination with all maritime stakeholders such as the Marine Environment protection Authority (MEPA), Sri lanka Ports Authority (SLPA), Customs, National Aquantic Resources Research and Development Agency (NARA), Sri Lanka Coast Guard (SLCG), and the tri forces.

- Establish Regional and International Cooperation through the Indian Ocean Naval Symposium (IONS) and the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP).

- Enhance regional cooperation among small island developing states by combating maritime threats and will help in the Blue Economic development of the country.

- Enhance ship building and ship repairing facility at port Hambanthota as the port is situated very close to one of the main shipping lanes.

- Ship recycling industry at Kankesanthurai (KKS) considering the cheap labour resource available in the North and creating new job opportunities to the people.

- Develop marine aquatic products, farming of Oysters, Algae on the North-Western coast

- Introduce marine biotechnology utilizing biological systems, living organisms to develop or create different products such as beer, wine, washing detergents, and personal care products.

- Sea salt export production enhancement targeting the European market.

• Ocean renewable energy development in the fields of wind power, wave energy techniques and develop floating solar tidal energy.

• Reverse osmosis project in North to address drinking freshwater crisis.

• Seabed mineral mining to obtain valuable minerals such as copper, zinc, and lithium.

• Expand coastal tourism with government support in recreational water sports, yachting, and aqua golf.

• Cruise tourism with the Maldives and other island nations and start passenger ferry services via sea routes and inland waters.

• Development of Eastern and Western terminals of the Colombo port to increase container handling capacity.

• Pollution control out at sea and from land-based activities to prevent bio-diversity.

• Mid-sea bunkering off Hambantota to generate foreign revenue.

• Enhance deep water fishing with government support, eliminate IUU fishing and destructive fishing practices and also regulate overfishing.

• Explore oil and gas in the Mannar Sea through a joint venture with a developed country.

Recommendations

Given the above empirical findings, the followings are recommended;

• Sri Lanka Navy(SLN), Sri Lanka Coast Guard(SLCG) along with relevant stakeholders may take initiative to generate awareness about the Blue Economy and its influence on the sustainable economic development of the country amongst people by organizing workshops, seminars, and publications in coordination with different private organizations, electronic and print media.

• Government may take initiative to integrate all maritime stakeholders and coordinate amongst various organizations and ministries involved directly or indirectly with Blue Economy. SLN may be engaged as the lead organization to perform this coordination.

• Sri Lanka may develop a forum with the regional countries to support each other and organize maritime military exercises and deployment of cooperation for the common interest concerning prospects of Blue Economy.

• A viable maritime ocean policy may be formulated earliest to bring comprehensive reforms in the maritime vision and to address Sri Lanka's

dynamics of commerce and security, incorporating various blue water issues and as a key enabler for the development of the maritime sector.

- The Government of Sri Lanka may formulate a comprehensive policy on combating the effect of climate change where the role of the Disaster Management Centre (DMC) and Armed Forces to mitigate and control its adverse effect must be well defined.

- The government must strengthen SLN, Sri Lanka Air Force, and SLCG adequately to enhance maritime security through physical presence, monitoring, and surveillance for combating maritime crimes and provide necessary protection to all Blue Economic activities.

- A cooperative and coherent maritime strategy may be formulated soon encompassing the political, economic, and security interests of Sri Lanka to implement the future maritime policy integrating all maritime stakeholders.

Conclusion

Oceans and seas constitute 70% of the surface of the earth and over 90% of the planet's living and non-living resources. Nearly, two-thirds of the world's population lives within one hundred kilometres of the coast. The oceans offer transportation, food security, job opportunities, sustainable economic growth, minerals and hydrocarbons, rare earth materials, etc. Moreover, the ocean influences the weather, climate, monsoon, biodiversity, absorbing carbon; thus, influencing the temperature of the world. Presently, the ocean offers job opportunities to more than 30 million people, who are directly or indirectly involved with maritime activities such as fisheries, shipping, trade, and other activities.

The ocean, sea, and coasts are the drivers of the economy in many littoral states and offer huge potential developmental through the Blue Economy. The concept of the Blue Economy is still under development. However, the sectors that are part of the Blue Economy are in many cases already well developed in many other countries. This research has found the potential of various Blue Economy sectors of Sri Lanka such as fisheries, aquaculture, shipping, maritime transport, tourism, renewable energy, sea sports, hydrocarbon, etc.

This study demonstrates the importance and major challenges to the Blue Economic aspiration of Sri Lanka as a whole and found a range of challenges that are largely specific to maritime security, fishery Protection, tourism, renewable energy, and marine pollution. More so, Blue Economy represents the natural resources and requires a long-term solution with local strategies on disaster management, prevention of pollution, and most importantly skilled manpower.

Coastal and marine ecosystems, and their products, are treasures of the

seas around Sri Lanka. Transformation to a Blue Economy is the way forward to ensure the sustainability of both the economy and ecosystem. Blue Economy offers a mindset to manage different risks and generate new opportunities. Since the country is already experiencing impacts of economic crisis, global warming and climate change, marine pollution, overfishing, and all stakeholders need to start acting now. Thus, the Blue Economy can build connections with the sea to boost the economy, and well-being of humans and the environment.

All endeavours for the economic development of the country through a Blue Economy cannot be achieved without awareness of the people and a comprehensive maritime security policy. Maritime security is the greatest challenge in the Blue Economy. Maritime terrorism, piracy, drug trafficking, human trafficking, gun-running, and transnational crimes are the main hazards that can diminish blue economic activities. SLN and the SLCG directly contribute to the fisheries sector by protecting marine fisheries from poaching and illegal fishing. It is not always possible to monitor physically such a vast area with a limited number of naval and air platforms. Hence maritime partnerships with neighbours and like-minded nations are very important.

On the other hand, the adverse effects of climate change have aggravated the overall economic development scenario of Sri Lanka. The government is pursuing to take measures against the adverse effect of climate change. Again, marine pollution has a direct effect on the biodiversity and ecology of the ocean. The ocean carries tremendous prospects and potential both from the geo-economic and geostrategic points of view. It facilitates maritime trade and brings economic prosperity allowing exploitation and exploration of her maritime resources. Proper management of this vast region and its effective utilization is not possible by a single nation alone. Thus, working together as a single entity would allow the littorals to utilize every potential for the greater benefit of humanity.

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SWOT ANALYSIS: WAYS AND MEANS FOR SRI LANKA TO BECOME A MARITIME NATION

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Abstract

Is Sri Lanka a maritime nation? As Sri Lanka produces very negligible percentage of its annual income from marine sector and has little influence on global marine activities from the sea and in the sea, the author opines that Sri Lanka is yet to become a maritime nation. Hence, it is timely that finding root causes for preventing Sri Lanka to become a maritime competitor. An analysis was conducted to identify strengths, weaknesses, opportunities and threats in maritime sector. Whilst naturally blessed marine features along with literate population identified as strengths, opportunity of conceptualising, global trends and rapid development of maritime sector were identified as opportunities. Further, found that maritime blindness as a nation, lack of leadership, technologies, policy making and cooperation are the weaknesses and root causes for the circumstances. These strengths and opportunities could be used to eliminate threats and weaknesses through farsighted leadership, diplomacy conceptualising maritime interest, policy and strategy.

Keywords: Maritime Nation, Maritime Blindness, Maritime Strategy, Maritime Interest, Maritime Policy

Introduction

Destiny of nations lies on their behaviours of the people and performances of economic activities; characters of leaders. Also governments have a direct influence on behaviour of their publics, their economic activities and finally to determine the future of the countries. The Henry the navigator motivated Portuguese, to explore the sea to become a Thalassocracy. Mahan (1890) states that character of people and character of government affect the sea power of a nation. Not all the coastal states are able to become maritime powers; however the nations have effectively used the seas to generate significant amount of their income, overcome the economic difficulties and have become maritime nations. Nonetheless, being an island nation and having fulfilled physical prerequisites to engender profits from the sea, Sri Lanka currently earning less than 2.5% of its Gross Domestic Product (GDP) from maritime sector (Colombo International Maritime and Logistic Conference, 2022). When it is compared with the other maritime nations this figure implies that Sri Lanka has been blind on its maritime prospects.

Thus, Sri Lanka exemplifies that mere surrounding by the sea will not

make a country a maritime state. A significant amount of country's economy, livelihood of its people, food and energy supply, power projection capabilities and ability to influence other nations through statecraft should depend on seaborne activities to become a maritime hub. Nevertheless, Sri Lanka has not understood the importance of the sea for accomplishing the national interests. The root cause seems to be the unawareness: maritime blindness, attitude of the rulers and public towards sea: character of people and government, lack of technology to exploit maritime resources, lack of cooperation among maritime related stakeholders/ agencies and absence of visionary leadership. Consolidation of above causes has headed towards poor conceptualising, policy planning and execution. Therefore, strategy must be framed to eradicate above root causes. Joseph (2015) indicates that future of Sri Lanka will depend on how profound she uses sea around her. He emphasized the requirement of a well formulated maritime strategy for the country in order to exploit her maritime resources.

On the process of setting the strategy, Sri Lanka needs to concern on capitalising maritime strengths, minimising weaknesses, neutralising the threats and exploiting the opportunities. United States led "Free and Open Indo-Pacific Policy (FOIP)", China's "Belt and Road Initiative" (BRI), geostrategic competition among major powers and realising "Asian Century" along with skilful statecraft would provide plethora of prospects for Sri Lanka to rise as a maritime nation. Whilst studying and learning the lessons from the succeeded models applied by the other countries, Sri Lanka must have an own model which is appropriate for local circumstances to satisfy her maritime interest.

In this context this paper aims to conduct SWOT Analysis: identify the maritime strengths of the country, major drawbacks/ weaknesses that Sri Lanka faces in maritime sector, emerging threats in maritime sector, opportunities that are available for Sri Lanka to capitalise on her maritime strengths and nullify the threats. Further, it will highlight the necessity of having a maritime strategy itself as an opportunity and major aspects that need to be taken into consideration whilst articulating the maritime strategy.

Strengths vs. Weaknesses

Mahan (1890) has identified following principle requirements to define sea power of a nation;

- Geographical Position.
- Physical Conformation, including, as Connected therewith, Natural Productions and Climate.
- Extent of Territory.
- Number of Population.
- Character of the People.

- Character of the Government including therein the National Institutions.

In this perspective it is deceptively seems that Sri Lanka has fulfilled almost all the requirements in the aspect of sea power. In fact, it can be agreed that first four elements of Mahan's concept are satisfied by Sri Lanka as they have been naturally blessed. Sri Lanka's strategic location in centre of shipping routes, its natural and manmade harbours, lengthy coastline, scenic beaches and number of literate population that can be easily converted to skilful labour force and all are to be considered as certain assets and strengths of our nation. However, Sri Lanka has not reached at least among the first 30 maritime nations in the world (DNV Report 2018). The weaknesses headed to the shortfalls are drawbacks in last two elements of Mahan's requirements; the elements of character of people and governments. The attitude of the people and administration towards the sea has not been satisfied to required level.

Maritime nation is any nation which is bordered by the seas and depends heavily on commerce, transport, defined territorial boundaries and maritime activities. On the other hand Corbett (1918) states that the control of maritime communication whether commercial or military purposes need to be ensured to identify as a maritime power. Till (2018) defines Sea Power as the capacity to influence the behaviour of other people by what you do at or from the sea. In terms of Shipping, Maritime Finance and Law, Maritime Technology, Ports and Logistics, Ship Building and Repairs, Maritime Services and Sea Power sectors Sri Lanka has very limited influence on other nations. Hence, the weaknesses in these sectors suggest Sri Lanka has long way to become a maritime competitor.

Sri Lanka has approximately 1340 km lengthy coastline and fishing and tourism sectors are affiliated with the coast. The World Bank Group (2017) states that "Fisheries make an important contribution to food security, employment, GDP, contributing only up to 4.5% of Sri Lanka's total export revenue, with further significant growth potential". Further, the World Bank report (2022) highlights that half of fish catch spoiled due to insufficient refrigeration technology.

The oil reserves available in Mannar basin are yet to be exploited. Had Sri Lanka developed technology to yield the reserves, energy security could have been ensured and foreign currency could have been reserved today. Wind power generation technology is a sustainable strength for guaranteeing the energy security, yet Sri Lanka still struggling with China and India to offer the project. As far as ports and infrastructures are concerned, Colombo harbour is placed few of top harbours of the world. However, again important container terminals were undergone to great power competition and Sri Lanka happened to lease the terminals due to lack of funds for further development. Hambantota Port also was a misadventure and Sri Lanka was unable to sustain the port operations owing to economic mismanagement and unprofessional statecraft.

As per the United Nations Convention of on the Law of the Sea (UNCLOS), a provision has been given coastal states to claim for continental shelf up to 350 Nautical Miles depending on their natural prolongation. Sri Lanka has naturally blessed with long continental shelf which could be considered as a strength. However, Sri Lanka was late to submit its claim to International Seabed Authority (ISA), since it did not have required technology and economic environment to get the formalities done for the claim. Almost all the sectors of maritime prospects have been in substandard mode or led to mismanagement due Sri Lanka happened to face weaknesses in required technologies.

In the recent past Sri Lanka faced few yet devastative maritime accidents such as MT New Diamond and X-Press Pearl issues. Sri Lanka suffered unexpected environmental disasters and had to depend on foreign assistance to mitigate the damages due to underdevelopment of required technologies. The compensations for the disasters also could not be claimed due laws have not been updated and not merged with domestic laws: The out-dated law system is a weakness for Sri Lanka to become a major maritime performer.

Major cause for above discussed technological inferiority is unawareness of the prospects lies in the sea by the authorities and lassitude of stakeholders: maritime blindness. Paththinigama (2019) has defined sea blindness as "Lack of awareness about maritime matters by a nation". He questions whether Sri Lanka suffering from this syndrome. Further, he argues that had our ancestors focused on sea with the skills, they would have excelled in land; we would have been stood parallel or ahead of other maritime nations today. The countries such Singapore and Korea demonstrate the character of governments and character of population have direct influence to gain the prosperity through the sea. In case of Sri Lanka, the authorities did not envision the opportunities and consequently general public did not receive any stimulation to experiment the sea. The deficiency of visionary leadership can be acknowledged as a weakness for the sea blindness.

The seas are full of resources and states and its people must have an interest and required knowledge for exploiting the resources. For that the knowledge should be engendered specially among the younger generations. Then only the researchers are tend to conduct maritime scientific research on developing seaborne technology. Sri Lanka very recently initiated actions to induce maritime related knowledge to its education system and establish a maritime university, which seems very late. Even knowledge on established education organs such as National Aquatic Resources Research and Development Agency (NARA) and Colombo International Nautical and Engineering College (CINEC) is very less due to unawareness. Therefore, deficiency of education opportunities on maritime sector can be admitted as a weakness.

The maritime sector is colossal in nature and the management and responsibilities have been divided into a large number of entities such as Ports

Authority, Shipping Cooperation, Aquatic Resources Department, Fisheries Department, Marine Environment Protection Athority, Sri Lanka Navy (SLN), Sri Lanka Coast Guard (SLCG), National Aquatic Resources Research and Development Agency (NARA), and Private Sector Industries. To succeed in maritime sector, an effective interaction and cooperation among these institutions is must. Nevertheless, in Sri Lanka it is observed that the synergy among these entities is very less when dealing with each other which is a definite weakness to become a maritime nation.

Opportunities and Threats

In order to capitalize on maritime strengths and mitigate weaknesses a maritime policy, maritime strategy, action plan to meet the strategic objectives and leadership to coordinate these organizations will create a great opportunity for Sri Lanka. A maritime strategy is not just about naval forces or naval strategy, it consists management of other organizations in marine sector such as shipping, maritime finance and law, maritime technology, ports and logistics, ship building and repairs, maritime services and private sector industries. In this context, Sri Lanka needs to take strategic approach to overcome the challenges which faced in maritime sector. The maritime policy needs to be derived in order to accomplish the national and maritime interests. Depending on the maritime policy, strategic objectives are to be set for each sector and sub sectors in coordination with all the departments. Ways and means to reach the desired objectives are to be spelled out with action plan and deadlines. The responsibilities, role and task of each stakeholder are to be elaborated.

Fundamentally, a maritime strategy cannot be articulated overnight, it requires comprehensive studies, inputs from experts of all the sectors. Joseph (2015) emphasises governing body, board of officials consist of decision making level representatives with expertise knowledge from related fields/ institutions would be appointed to frame the strategy. Intellectuals, think tanks and policy makers can be appointed in the proposed institution. A mechanism to generate synergy among all the institutions must be encompassed in the process. The governing body must be empowered to make directives, generate synergy among all the players, monitoring the process and making the adjustments when required.

The strategy should be essentially focused to eradicate the root causes of maritime blindness discussed above in the document. The character of the government should be attuned for yielding economic prospects from maritime sector by understanding the trending growth in global maritime sector. The attitude of the people towards the sea needs to be changed so as to engage maritime activities positively. The entire nation needs to be motivated through a strategic and whole country approach to see the prospects in the sea.
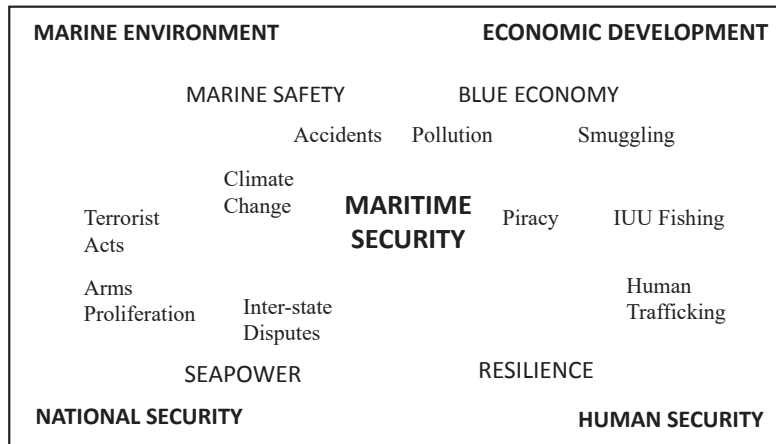
Figure1: Maritime Security Matrix
Source: Bueger (2015)

In addition, as pointed out by Bueger (2015) in Figure 1 maritime security has influenced on every other sector. Rise of India and China, US interest in the region has created Sri Lanka, centre of geostrategic competition which seems very sensitive and threatening for Sri Lanka's interests. In addition, maritime accidents, rise of sea level, natural seaborne calamities, non-traditional and transnational threats such as drugs trafficking, piracy, illicit trafficking, pollution and maritime terrorism offer greater threats for the Sri Lanka's maritime interests. These threats could be nullified through maritime arm components and law enforcement and strategy must include the ways to develop law enforcement authorities such as SLN and SLCG. Therefore, maritime strategy must concern on establishing maritime security which directly related to national security, security from external parties and seaborne threats, economic security, food security, energy security, environment security and human security. The maritime strategy must spell out and determine the ways and means to ensure maritime security through sea power, marine safety, blue economy and resilience to face the challenges.

The opportunities for education on maritime sector such as shipping, maritime finance and law, maritime technology, ports and logistic, aquaculture, marine biology, and maritime research and developments must be broadened. Development plans for maritime education and maritime technology must be included in maritime strategy.

Whilst determining the maritime strategy, it is required to study how other countries succeeded, what approach they have taken, how their approaches are applicable in Sri Lankan context, how leadership and policy makers influenced, what are the latest trends and technologies in maritime sector, which factors differentiate Sri Lanka from others. Especially Sri Lanka might learn lessons from

models applied by Singapore, Philippine, Malaysia and Indonesia. Attanayake (2021) states that post-independence journeys of Sri Lanka and Singapore have been unique and the different opportunities and challenges that both countries have experienced have resulted in making them the nation states they are today. Further, he mentions that "Thus, Singapore views Sri Lanka to be a country with an abundance of opportunities". Thus, Sri Lanka should determine to use these opportunities. However, applying same models will not succeed Sri Lanka and it is required to define an own style which is more appropriate for local circumstances.

Further, emerging global trends such as "FOIP" strategy, China's BRI, US, Indo China power competition, concept of "Asian Century" would have much influence on Sri Lanka's policies. FOIP aims at broad range of cooperation from security, economy, and technology to peace in Indo-Pacific Region, whilst BRI intend to make Maritime Silk Rout. With rise of India and China worlds supremacy said to be shifted to Asia in 21st century: "Asian Century". The roles of multilateral organizations such as Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) and Indian Ocean Rim Association (IORA) and their initiatives in maritime sector would benefit Sri Lanka if cooperate well with them. The maritime sector is developing globally in unprecedented rate. These megatrends open greater opportunities for the country and the maritime strategy must elaborate how these opportunities could be exploited. Therefore, emerging global trends must be used as ways and means to capitalize strengths, minimize weaknesses and threats through profound diplomacy and statecraft. The maritime interests, maritime policy and strategy should be aligned with foreign policy and foreign policy need to be realigned with global trends strategically: Strategic Realignment. In that case, Attanayake (2021) says "in order to successfully make use of strategic hedging, it is important for the country to stay neutral with everyone and make friends with all. This is a great lesson for Sri Lanka to learn from Association of South East Asian Nations".

Summarized strengths, weaknesses, opportunities and threats and deductions reached are portrayed in following conceptual framework as shown in Figure 2.

Strengths	Weaknesses
Geographical Location	Unawareness: Maritime Blindness
Extent of territory (Coast line, Bays)	Lassitude Character of governments and people
Physical Conformation (Harbours and infrastructures)	Poor Maritime Technology
	Poor Maritime Education
Literate Population	Lack of cooperation among authorities
	Inferior Leadership and statecraft

Sri Lanka As a Maritime Nation

Opportunities	Threats
Maritime Policy planning	Great Power Competition
Frame a Maritime Strategy	Maritime Accidents
FOIP, BRI, BIMSTEC, IORA, Asian Century	Maritime Security Threats
High rate of development in maritime sector/ technology	

Deductions: Maritime Strategy Concerns

Leadership, Statecraft and Strategic Realignment to use global trends as an opportunity to accomplish maritime interests

Generate cooperation among maritime institutions

Benefit from Geographical Location by developing shipping

Develop Maritime Infrastructures, ports and harbours, repair facilities

Develop Maritime technologies to optimize maritime strengths

Educate population to eradicate maritime blindness- Whole country approach to change character of authorities and people

Create maritime education opportunities to conduct more research and developments

Develop Sea Power to counter maritime threats, accidents and great power contest

Ensure Marine Safety, use Blue Economy concept and Resilience to recover from disasters

Figure 2: Sri Lanka as a Maritime Nation SWOT Analysis: Conceptual Framework
Source: Developed by Author

Conclusion

Workable Strategy for the Next Five Years Sri Lanka has long way to sail to use the title of maritime nation. The paper identified Sri Lanka as a state with resourceful maritime strengths. However, weaknesses such as maritime blindness, lack of technology, lack of interest and leadership, lassitude of

authorities and population and lack of cooperation among the maritime institutions has prevented the country becoming flourishing maritime nation. A well-defined maritime policy and strategy aimed to optimize the strengths, to reduce the weaknesses, to use opportunities and to nullify the threats will produce convenience to become prominent maritime nation.

In addition, global trends such as BRI, FOIP and Asian Century, great power competition among major powers could to be converted to benefit own interest through statecraft. To realize these dreams Sri Lanka need visionary leadership to change character of government and people through whole country approach. As it is evident that the existing approach has not yield the expected consequences, visionary leadership for sound planning, policy making, conceptualising and strategizing to achieve the desired ends along with use of insightful statecraft and strategic realignment is vital for the country to meet the maritime interests.

Recommendations

Depending on deduction from the SWOT analysis following recommendations could be derived;

a. **Visualizing.**   As visionary leadership has an effect on country's development, the strategic level leaders need to visualize future development of maritime sector and need to decide envisioned end status in each subsector of maritime sector to become a maritime nation.

b. **Conceptualizing.**   Depending on the national interest, Sri Lanka needs to derive maritime interest, maritime policy and formulate a maritime strategy to meet the desired maritime strategic objectives of the country. Appoint an institution which consists of think tank and experts from each sub fields of maritime sector, for formulating, implementing and timely reviews of maritime strategy (Josheph 2015).

c. **Strategizing.**   Plans, ways and means to realize maritime strategic objectives are required to strategize. Special attention must be given to capitalize discussed strengths and opportunities and to eradicate the root causes of the problem and threats discussed in the paper;

• Develop the shipping industry, maritime infrastructures, technologies, ports and harbours and repair facilities in order to obtain the benefit from geographical location to enhance the economy.

• Exploit the maritime domain to address the economic security, food security, energy security, environment security and human security of the country.

• Improve awareness of general publics on prospects of maritime

sector by educating population in order to eradicate maritime blindness: Take a whole country approach with nationwide campaign to change character of authorities and people on maritime affairs.

- Create and broaden education opportunities in maritime sector to conduct more research and developments.

- Develop Sri Lanka Navy, Sri Lanka Coast Guard and law enforcement authorities in maritime sector to counter maritime threats, accidents and great power contest.

- Ensure marine safety by applying blue economy concept and resilience to recover from disasters.

- Upgrade maritime related legal system and incorporate domestic laws with maritime laws.

- Concentrate on diplomacy, statecraft and foreign policy to use policies of global powers' and global trends in order to yield through investments in maritime sector.

d. **Synergizing.**   Synergy among the maritime agencies must be established in order to generate necessary cooperation to meet maritime strategic objectives.

e. **Realizing.**   Sri Lanka needs to ensure that the set maritime strategy is implemented and targets are realized on time through monitoring mechanism.

f. **Revising.**   The plans should be revisited time to time and need to ensure necessary corrective measures are taken when and where required.

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A SHORT ANALYSIS OF SRI LANKAN FOREIGN POLICY SINCE 1948

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Abstract

United Nations (UN), considered the supra national organization, was established to prevent future wars. However, it is questionable whether the present UN stands for that. Many conflicts have transpired globally with the sole purpose of achieving their national goals. Powerful states have used and continue to use their hard and soft power against small states. Being a sovereign state, it has all the rights that the powerful states enjoy. However, the difference between two nations can be seen by looking at their capabilities and how they handle the power. Therefore, small states like Sri Lanka will always be at the cutting edge when dealing with other states. Hence, foreign policies are created to establish strong relationships with other states, and thus, a country's foreign policy plays a vital role when dealing with such situations. The foreign policy of any government is a critical aspect and depends on internal and external factors. Sri Lanka's foreign policy since 1948 to present, visible that it has not been constant. It has changed throughout with the change of government. Therefore, this study aims to identify the key features that influence the foreign policy of Sri Lanka. The paper predominantly uses secondary data.

Keywords: United Nations, Small states, Foreign policy, Power and Capability, Soft power and Hard power

Introduction

"Domestic policy can only defeat us; foreign policy can kill us"

John F. Kennedy

Every state enjoys its sovereignty in a multipolar world irrespective of their neighbours' influences beyond the boundaries. This is a unique feature of an independent state. There were two great wars and the Cold War in the world history, which drove the world to a new era to avoid the same in the future. Hence, states established international organisations to represent their voices in the international arena. United Nation (UN) is such an international organisation that barely stands against the states to prevent such occurrences.

The world is facing rapid challenges than never before; disputes such as inter and intrastate wars, terrorism, health issues, global pandemic, technical development and globalisation, and many more. These issues impact on the

movements of the sovereign states in the international arena, directly or indirectly. Stronger nations survive in this diverse nature, while weaker nations struggle to keep up their vibrant. In this nature, mutual understanding and cooperation are essential for the state to balance the situation. The best way for a state to counteract this condition is, having a potent 'Foreign Policy' to build collaboration among nations.

Foreign Policy in this gesture is the key to a country's success. It represents the nature of its relations with the states. Formulating a nation's foreign policy requires considering many factors, 'Internal' and 'External'. Internal factors are regarded as geography, demography, natural resources, etc., while external factors represent the geopolitical situation, international law, power structure, and many more (Baskaran, 2021). The Foreign Policy of a country is also an instrument of its 'National Interest'. According to the regime change, the national interest of a state change, and changing a state's leader would directly impact its national interest as well. In contrast, it is the leader's responsibility to change the national interest according to the situation in the country (Baskaran, 2021). This allows concluding that a country's national interest will determine its foreign policy.

Evaluation of Foreign Relation in Sri Lanka

Sri Lanka's international relations occurred in epic circumstances when a momentous link was established in the 3rd century BC with India (Mendis, 1998). Sri Lanka had maintained a cordial relation with neighbouring states even beyond its boundaries, proving her capability of foreign cooperation and stance of geopolitical cooperation. Further, Sri Lanka's unique geographical location has created more added advantage on her foreign relation where it could be used for many purposes, such as the gateway to East and West, large Area of Influence, Sea Lanes of Communication, and many more. However, with European power's arrival to Sri Lanka, all cordial relations changed and finally came under foreign interest. This was further exaggerated in 1815 when Sri Lanka became a colony of the British throne. The British colony lasted for nearly 150 years and changed Sri Lanka relations forever.

Since the independence on 4th February 1948, Sri Lanka was permitted to follow its own foreign policy to meet her national interests. Changing Sri Lanka's foreign policy with the change of regime can be identified, and those are unique and standard features in the foreign policy. Only two political parties, namely the United National Party (UNP) and Sri Lanka Freedom Party (SLFP), have governed the country since 1948 until 2020.

Sri Lanka was on course with Western policies since independence. The ruling parties did not attempt to deviate much or change the existing structure of the Sri Lankan political system. Some similarities can be identified in both ruling

parties of Sri Lanka. From 1948 to 1956, under the UNP government, leaders followed Pro-Western policies and were reluctant to establish a relationship with communist countries. Therefore, the UNP government barely mingled with communist countries, which caused to reject the application for United Nations in 1955. The UNP government did not establish or had cordial relations with littoral states in South Asia, especially with India. This was the biggest vacuum created by the UNP government during their tenure, where India is the closest and the regional power. In contrast, UNP leadership favoured following the open relation and open economy, paying attention to keen relation with socialist countries.

The SLFP government differs from the UNP government, though policies of the country should not be changed according to the changing regime. The SLFP government gained much international recognition due to the induction of non-alignment policy, and strategically handled balancing the relationship between the Western and the Eastern countries.The Cold War had been started in this period, where most countries selected their power block. In this gesture, many countries appreciated Sri Lanka's movement towards non-alignment. However, SLFP foreign policy is more closer to the communist countries relative to Pro-Western and the Indian relation also immensely benefited Sri Lanka in the international arena. Hence, its Area of Influence (AI) significantly increased due to that strategic movement.

However, due to the increase of internal reasons such as Janatha Vimukthi Peramuna (JVP) insurrection in 1971, inflation, social unrest, increased unemployment rates, the Sinhala only act, and Indo-Sri Lanka agreement in 1964 focusing on Indian Tamils, resulted in removing the SLFP government by the UNP leaders who came to power with a 2/3 majority in 1977. The year 1977 was the landmark year for Sri Lanka, which opened her economy to the world, and thus, Sri Lanka became the first Asian country to liberalise the economy (Madanayaka, 2016). This created a massive Foreign Direct Investment (FDA) to Sri Lanka and boomed the economy (Amirthalingam, 2014). Again, the country's national interest changed and foreign policies were created to handle such. Further, UNP leadership introduced a new constitution in 1978, starting immense power vested with the president called 'Executive President'.

UNP leadership also faced social unrest created by the JVP in 1987-1989 due to inequality and implementing socialism within the country. It developed into insurgencies, making a black mark in the international forum. On the other hand, extremism activities increased in the Northern part of Sri Lanka by Tamil youth aiming discrimination against the country's minority. Handling these two insurgencies were priority targets of the UNP government in the 1980s. The damage caused by the JVP insurrection was immense and never recovered; foreign invests were lost, and Sri Lankan recognition was severely damaged.

The Tamil insurgency resulted in changing the Sri Lanka political structure. For many reasons, Tamil youth in the Northern part stood against the government with arms and struggled protracted for nearly 30 years until the end in May 2009. Sri Lanka development went back for years due to this asymmetric conflict. India's direct involvement for both the Sri Lankan government and the Tamil militant group was also identified (Gunarathne, 1993). Sri Lankan foreign relation in this period was at the top, and many countries from regional and extra-regional countries were in hand with the Sri Lankan government. During that period Sri Lankan government's interest mainly on the national security , where they heavily struggled to stop the conflict through foreign involvement.

Foreign involvement during this period is evident. The Indian government's high involvement, even changing the political structure of Sri Lanka, was noted. For an example 1987 Indo- Sri Lanka peace accord was resulted create provincial council in the country which never experienced early. During the latter part of the conflict, the Norwegian government involved as a mediator to the conflict. Participation of the Indian Peace Keeping Force (IPKF), USA, UK, China, Russia, Pakistan and Israel could be identified as the supportive foreign governments in this gesture (Gunarathna, 1993); they provided military training, military equipment, intelligence etc to tackle the terrorism. The Tsunami in December 2004, was also a turning point in Sri Lankan national interest. There was a high possibility to terminate the conflict through discussions, same as the case in Indonesia between the free Aceh movement and the government of Indonesia. However, it failed in Sri Lanka, and the conflict continued until 2009.

Until the end of civil conflict in 2009, no any difference could be identified on the foreign policy of Sri Lankan government, as every government's top priority effort was to terminate the conflict, either by discussion table or through arms. During this period Sri Lanka gained much sympathy from the international arena. As a result, the government was able to get the international support.

During United People's Freedom Alliance and the alliance government (1994 to 2015), the policy was more focused towards China which created an uncertainty relation with India (Madanayake, 2016). This was highly reflected during the UN session on war crimes against Sri Lanka where India voted against Sri Lanka. After 2009, Chinese involvement was high in Sri Lankan territory. They mostly invested in post-war reconstruction and rehabilitation in war-affected areas in the country. Sri Lankan government was highly recognized by the international community, being the first nation in the world who defeated terrorism through arms.

After the conflict, the entire foreign policy was changed to face the alleged crimes committed by the Sri Lankan armed forces during the final phase of the battle where the Western countries attempted to infiltrate the land in Sri Lankan soil to establish their presence in order to execute their foreign

policies. This problem put huge pressure on the Sri Lankan government from the international community, abending or isolating in the international forum such as the United Nations Human Rights Council (UNHRC). However, due to the strong relation with China and Russia, Sri Lanka could bearup the pressure of Western countries, which again caused isolation of Sri Lanka in the international arena. Further, US - Sri Lanka ties were discontinued due to criticism of alleged war crimes, human rights abuses, corruption, and nepotism. Therefore, with the backing of United States', the UNHRC requested an investigation into wartime wrongdoings, provoking a negative response from Sri Lanka (Balazs & Medis, 2015).

With the external and internal pressure against the government increased for various reasons. Until 2015, Sri Lanka experienced an autocratic political system, though it was not visible. One person represented all the three pillars of the government, i.e., the Executive power, Legislature, and the Judiciary. Therefore, Sri Lanka experienced autocratic situation until 2015. Sri Lanka did not maintain a good relationship with India who was also unhappy with the relation of China due to the cold war between India and China. India cast his vote against the Sri Lanka during human right council. Sri Lanka foreign policy did not adjust to address the situation and continued to reject international complaints.

New Government

As a result of this precarious situation, an idea created among the Sri Lankan people to change the government, which happened during the presidential election in 2015. Again the coalition government was in parliament to steer Sri Lanka on a new course with many challenges. Sri Lanka was isolated in the international forum until 2009, and China was the only saviour. During that post-war period, the reconstruction process in the country was the sole interest. Due to the arms conflict in the country, infrastructure development, education, health were received minor attention, since high budget allocations were required for defence and security (Amirthalingam, 2014).

Sri Lanka allowed China to invest much in the country with a low return of invest (Britanica, 2021). Some projects took place during this period were the development of Katunayake Airport Expressway, the Southern Expressway, Hambantota International Port, Norochcholai Coal Power Plant, and Mattala International Airport, the Lotus Pond (Nelum Pokuna) Performing Arts Theatre, expansion of the Colombo Port and Initiating Colombo Port City project was among the biggest, undertaken by the Chinese government.
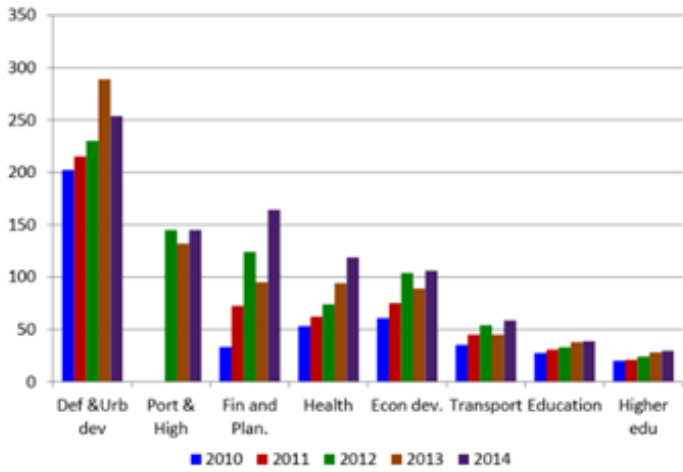
Figure 1: Budgetary Allocation for the Ministries (LKR Billions)
Source: World Development Indicators Database (2015)

China's Belt and Road Initiative (BRI) in 2013 was a strategic initiative from the Chinese perspective, which was the containment of India from the Indian ocean while opening land access from various places in South Asia to create self-sustain and the ensuring flow of energy without any disturbance. Hence, China initiated Hambanthota inland port in Sri Lanka, Pakistan deep water port Gwadar, and upgrading Chittagong port in Bangladesh, a few actions in the Indian ocean. Further, the China's naval presence in the Indian ocean was high in that time compared to the latter part. This was a direct threat to the regional power in India. Sri Lanka failed to maintain any cordial relation with India which further divided the relation with India.

Balancing the Relation

Sri Lanka was pro-China favoured until 2015, and the new coalition government opened the country for re-engagement with India and the United States. The new government restored the foreign policy direction returning to the traditional practice of parliamentary democracy and renewed her relationship with India and the USA. However, it seemed that the government had slightly taken away from the Chinese connection causing grave damage to Sri Lanka. Balancing these relationships among the nations was delicate of non-aligned foreign policy (Balazs & Medis, 2015).

The enormous loan settlement led Sri Lanka to the balance of payment crisis in 2016 (Britannica, 2020). After winning the election battle, Sri Lankan leader visited India as his first foreign visit and made four agreements, which included a civil nuclear collaboration pact. The Indian Prime Minister paid the

return visit to Sri Lanka and pledged to assist the uplift of Sri Lankan strategic important places such as developing the Upper Tank Farm at China Bay and transform Trincomalee into a "Regional Petroleum Hub" (Balazs & Medis, 2015).

On the other hand, the Sri Lankan government temporarily suspended the Colombo Port City project for many reasons mainly as a result of a promised made during the election period. The government requested a loan from the International Monitory Fund (IMF) to settle the loan. However, the balance of payment crisis continued, while losing public support to the government. That was exaggerated due to the circumstances such as leasing of Hambantota harbour for 99-years to China, Central Bank incident and the Easter Sunday bomb attacks. It was evident that how internal determinants would directly impact on shaping a country's foreign policy.

After the 2015 election, the government tried to amend the existing constitution by introducing the 19th amendment. Establishing Independent Commissions, establishing the Office on Missing Persons during the conflict period and the Right to Information Act were the promises made to the international community. This was the action initiated to overcome international pressure. It shows that how external determinants would shape the country's foreign policy. A small states like Sri Lanka will never be able to formulate their own foreign policy unless they are self-sustained and have a strong international voice.

Aiming for an economic boom in the country, the newly-elected government would shape her economic diplomacy through changing the foreign policy (MOFA, 2016). The objective was to participate in the private sector to propel that strategy of the government. Together the government's intension was to become a regional economic player by attracting foreign investment through the direct involvement of Diaspora.

A New Era in Foreign Relation

The vision of newly-formed Unity Government's in 2015 was to promote a peaceful, democratic and secure country in an international community. Sri Lanka foreign policy of 'friendship with all and enmity with none', was much close to the Non-Alignment Movement followed in 1960. In keeping with these policies, coalition government propelled towards promoting Democracy, Good Governance, Human Rights, The Rule of Law, Reconciliation process, and the sustainable development in the international community to show that Sri Lanka is a responsible member in the international community, thereby bringing benefits to its people (MOFA, 2017).

Sri Lankan government always had priority to promote relation with neighbouring countries in South Asia. Relations included in many areas, such as bilateral and multilateral agreements, high profile visiting, meetings etc.

Further, the Sri Lankan government increased cooperation in many aspects to strengthen and renew trust and warm friendship of SAARC countries which was lost years back. South Asia is comprised of many diversities. Violent extremism, terrorism, poverty, hunger, border conflicts, Illegal, Unregulated, and Unreported fishing, drug trafficking, human trafficking, slavery, piracy, etc., are emerging. Being positioned in a strategic location, Sri Lanka has an unconditional responsibility to cooperate with neighbouring countries to secure and bring stability to the region. Therefore, Sri Lankan government enhanced participation in Indian Ocean Rim Association(IORA), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), Galle Dialogue, and many regional forums to project its objectives.

Sri Lanka's relationship with the European Union (EU) cannot be neglected since 2015. The European countries had been highly criticising Sri Lanka for its behaviour since the war ended in 2009, and the country faced many economic challenges due to EU decisions. The banning of import of fishing and removing Generalised Scheme of Preference Plus (GSP plus) have positively impacted the country's economy. However, the coalition government was able to secure and regain those opportunities from the EU. Further, the action to develop good governance, the rule of law, and human rights dialogue was continued with the EU which helped Sri Lanka to maintain LTTE in the banned terrorist group list for two consecutive years (MOFA, 2018).

Today, Sri Lanka maintains overseas relations over 17,457 (Embassy of SL-USA, 2021). Among these 6773 are from the Middle East region, 1892 from Europe, 1302 from South Asia, 1028 from North America, and over 6000 from other parts of the world. Figure 1 illustrates the overseas relations of Sri Lanka.
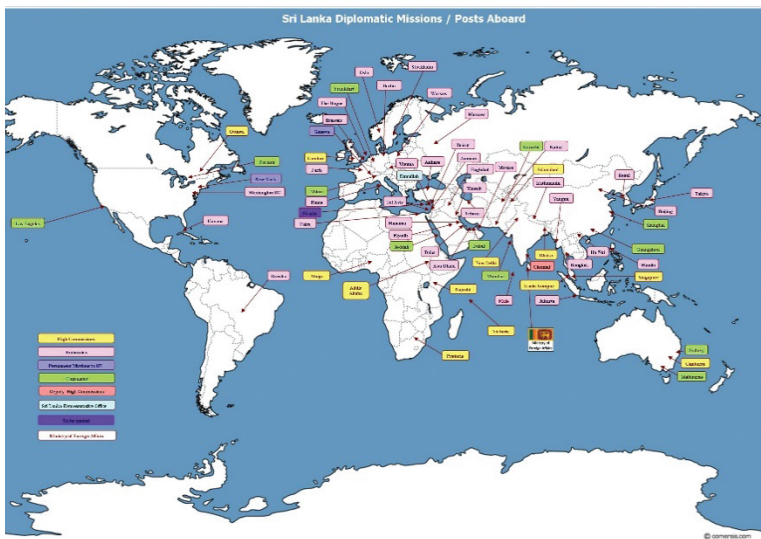
Figure 2: Sri Lanka Diplomatic Relation/Posts Abroad
Source: Embassy of Sri Lanka - United State of America (2021)

Sri Lankan foreign policy also shaped from the national security. Being in the strategic location in the Indian Ocean, it is of utmost importance to provide a safe and secure Sea Lines of Communication across the world. Many non-traditional threats are emerging in the Indian Ocean that cannot be addressed alone, and regional cooperation in this regard is essential. Piracy, trafficking of arms, humans, and drugs are common in this region. Maritime terrorism is another threat to be addressed. Moreover, South Asia is a most unstable and highly diverse region in the global context. The country's foreign policy should shape following these issues. Hence, regional cooperation, regional integration, multilateral, and bilateral agreements are vital factors when formulating country's foreign policy. Figure 3 shows Sri Lankan strategic geographic location and the transit sea routes from East to West.
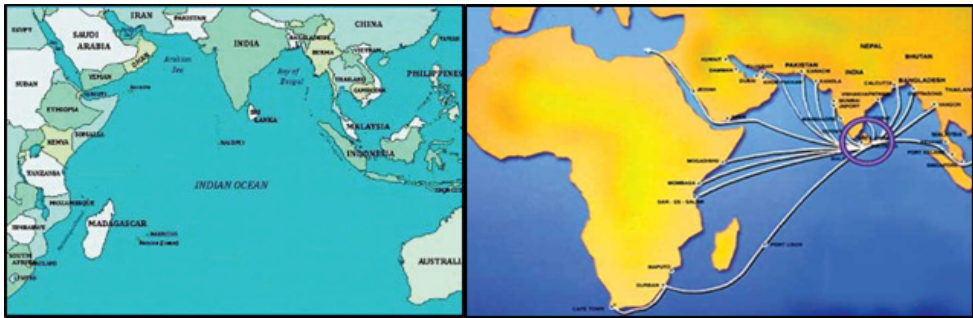
Figure 3: Sri Lankan Strategic Geographic Location and Sea Routes in the Indian Ocean
Source: Google (2020)

Economic relations paved the way to Sri Lanka's development after the presidential election in 2015. Economic diplomacy was the main instrument during that period, and the Sri Lankan government had paid more effort to better the country's economy. It is worthy to note that Sri Lanka has not been following a unique foreign policy since the independence, and it has been changed from government to government, leader to leader. Therefore, Sri Lanka has not gained much economic progress. Figure 4 depicts a linear decline of GDP growth of Sri Lanka since 1948. The graph also shows the negative growth of the country's GDP during 1977, 1983, and 2009, which can be identified as the involvement of military conflict and the JVP insurrections. Winning of GSP Plus, removing the IUU ban, tourism, involvement of the private sector, Foreign Direct Investment (FDI), and bilateral and multilateral economic agreements were few actions implemented by the unity government to uplift country's economy.
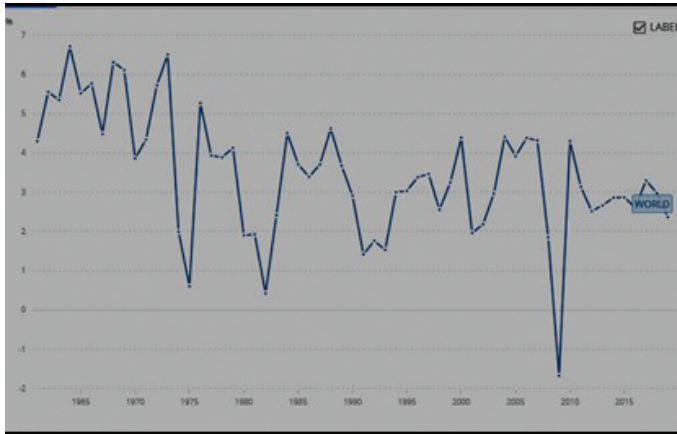
Figure 4: Annual GDP Growth Rate of Sri Lanka
Source: World Bank (2021)

Lessons Learnt and Way Forward

The foreign policy of Sri Lanka has been changed many times with the change of governments. Government intention was one internal factor affecting the country's foreign policy. The literature provides evidence that many factors have influenced Sri Lankan foreign policy, as described in this paper. Those factors can be identified as internal and external, including political dynamics, existing security environment, foreign involvement, and national leadership. The foreign policy of any nation should be constant and should not be changed according to the government changes. However, small states may change their foreign policy due to the factors motioned above.

However, many small states play prominent roles and are global players in international relations. Singapore is one of the best examples that formulate their foreign interest to achieve their national interest. Being an island nation in the world's busiest waterways, Sri Lanka faces multiple challenges when developing its own foreign policy. The best way to balance these factors is to have a firm foreign policy and foreign service.

Conclusion

Foreign policy of a country expects to achieve national interest of the country. Since independence, the national interest in Sri Lanka has been changed according to the government. Hence, the country's foreign policy was also changed automatically. This was clearly identified when the two political parties controlled Sri Lanka. The country faced civil unrest, terrorism activities, insurgencies, religious extremism and foreign involvement on internal problems that paved the way to shape Sri Lanka foreign policy. Sri Lanka gained international attention in 2009 by defeating the terrorist group by militarily,

which was a turning point of the country's economy. Until 2009, an uncertainty prevailed in Sri Lankan security and the economy. Therefore, only the least development took place in the country. Further, FDI also did not take much in the country. However, defeating terrorism created a favourable environment in the country. Many massive projects initiated in the country enabling long-term benefits.

However, Sri Lanka's image gradually faded and became isolated in an international forum, Since it failed to answer the human rights allegations effectively. During the last phase of the conflict, there was an allegation on human rights against Sri Lanka armed forces. Sri Lanka government's stance was to investigate as an internal problem instead of allowing foreigners to enter the country to investigate.That led to many consequences, and the government became more autocratic, leading the country to instability.

International image on Sri Lanka again received attention after the presidential election in 2015. The unitary government formed with two coalition parties, which promoted good governance. The unity government took several actions to address the issues prompted by the United Nations on the human right violation; i.e., Formulation of National Human Right Action Plan 2017-2021, promoting reconciliation, accountability, transitional justice, non-recurrence with a victim-centred approach, recognising the impact of conflict on all citizens of the country irrespective of their ethnicity, gender, social status, age, and other identities (MOFA, 2017).

During the unitary government period, Hambantota harbour was leased for 99-years to China, a controversial action against other countries operating around the Indian Ocean. Under-utilisation of Mattala Airport, termination of mega projects and Easter Sunday attacks were few government actions, which induced negative impacts. However, Sri Lankan foreign policy towards non-alignment maintain a good relationship with regional and extra-regional other states. With the new government in 2020, it was not easy to decide the foreign policy. However, the government prioritises national security, and fair relations with China and India could be noted. However, COVID-19, national security, East Container Terminal problem, nationalism, and Millennium Challenge Cooperation agreement are few challenges, which the government must tackle under international watch.

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A COLLABORATIVE APPROACH TO OVERCOME NON-TRADITIONAL THREATS AT SEA

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Abstract

Both littoral and inland states, seek to use their region to sustain their control over the ocean and land borders. It is an alarming fact that besides enabling conducive maritime trade, sovereign territory, territorial and international waters are being used by numerous non-state actors and unlawful groups. It directly and indirectly poses threats to any sovereign states, maritime trades, and most populations of island nation countries in and around the world. The impact of non-traditional threats through non-state illegal maritime activities was not being looked after through receiving appropriate attention. As such, maritime threats were surpassed by the outmoded conventional military security challenges. Even though how best your navy is in terms of handling non-traditional threats, increasingly, the non-traditional threats at sea challenge the Sea Lines of Communication (SLOCs). It eventually endangers access to strategic resources, overshadowing traditional defence responsibilities, and badly damages the ocean environs. Here, it is worth to mention that one country could be more powerful in terms of military, wealth, size, or otherwise. However, unless otherwise, that country is having a robust connection in the regional integration process, the mere survival of a particular country is questionable. An ideal example is the way that the Sri Lanka Navy (SLN) handled the MT New Diamond and X-Press Pearl incidents with other stakeholders as regional integration is fast becoming the concern of the entire world.

Keywords: Maritime Trade, Non-state Actors, Non-traditional Threats, Maritime Domain, Regional Integration, Regional Cooperation.

Background of the Study

The research aims to focus on overcoming non-traditional threats at sea emphasising the maritime security challenges as an island nation in the contemporary challenges in the maritime context. The researcher finds the nature and the degree of non-traditional threats, and the ways to fight against them, dealing requires a collaborative approach, a mutually agreed international legal framework, and historical and political science analysis with the approach.

The Objective of the Study

The main objective of this research is to study a collaborative approach to contemporary maritime security challenges over non-traditional at sea and expect to explore a wide range of common frameworks. The primary objectives of the research are;

- Study of non-traditional maritime security challenges.

- Identify the current maritime security challenges as a naval affair.

- Identify a collaborative approach to overcome challenges at sea with a common framework.

Research Design and Approach.

The qualitative research method was used principally for this research. Few senior naval officers' expert ideas were involved in the research sample. The ethnographic methodology was also used for speciality research methodology and research paper-related observation methodology.

Methodological Framework (Data Collection Screening/ Secondary Sources /Primary Sources/Data Analysis Process)

The research recognises the importance of naval experts, researchers' suggestions, and recommendations as an instrument to understand the common framework and collaborative approach to contemporary non-traditional maritime threats at sea. The data sources are at once primary and secondary. Descriptive analysis was used for research purposes based on primary data. Other than this method of study, detailed ideas of naval expertise were used in the selective sample of the study. Research papers, journals, publications, websites, and online journals were used to collect the secondary data.

Introduction

"The bigger powers, whether traditional or non-traditional, see our strength as a strategic space for the assertion of their strategic interests. How do we ensure that we play a part in shaping and determining the regional security oceans cape, rather than being spectators on the sidelines?"

Dame Meg Taylor

When considering the national security of the country, is a focus that few could claim irrelevant certainly at present, the majority would say it is of uppermost importance for countries and their citizens (Joseph, 2012). The culmination of the Cold War leads to understanding the nature of national security has become more and more multi-layered. The Post-Cold War period

has shown a collecting ground for political challenges aggravated by speedy globalization, the insubstantiality of many small states, and the increasing influence of typically negative-minded non-state actors (Jian & Othman, 2013).

As the number of maritime security concerns raise, the more burdens are there against the respective countries to find a collaborative approach to overcome non-traditional threats at sea and withstand such evolving challenges. Frequently it comprises finding novel and imaginative ways to use countries' militaries. As Peter Hough has argued, "There is a case to be made those nontraditional threats in the 21st century are seeming as ever and may be even greater than the previous " the simple fact remains that those threats are not the only threats that face by the individual countries, individual people, and it is the world as a whole.

Overcoming non-traditional threats at sea has emerged as a popular subject, which necessitates constructive engagement and a collaborative approach by all maritime stakeholders in this globalized world. In this paper, the researcher will share his thoughts on "A collaborative Approach to Overcome Nontraditional Threats at Sea". The paper will cover the subject areas in the sequence of Introduction, Geostrategic Maritime Environment, Non-traditional Maritime Security, Overcoming Non-traditional Threats as a Naval Affair, A Collaborative Approach, Recommendation and Conclusion with gained knowledge about the subject by the researcher.

Geostrategic Maritime Environment

At the culmination of the Cold War and after the 9/11 attacks, the world was alarmed by instability in the global strategic environment (Zakollah, 2012). The international security environment is dynamic and uncertain in nature with respect to recurring disputes, crises, and conflicts. The concern over "Sea Lane" and "Choke Point" security is one that any maritime nation cannot abandon in the present-day scenario (Hough, 2004). The interdependence among nations for the smooth functioning of global maritime trade cannot be restricted. Disruption of such maritime governors will disturb all nations and it could lead to the gravest situation for few of them. To overcome those issues, it is significant that the maritime nation is ready to meet any adverse conditions that may arise from these vital sea lanes, chokepoints, and narrow seas coming under threat or siege.

Uncertainty and complication illustrate the maritime environment which shows little signs of letting up in the future. Additionally, the sphere of security has also widened various to include multi-layered aspects. Another important feature of the modern maritime environment is the fact that Geo-economics has arisen as a well-known strategic thought that is taken into consideration by every country (Aswani, Sajith & Bhat, 2021).

Thus, access to resources sits on top of states' agendas. In the maritime domain, as a natural sequel to its security of global seaborne trade and energy lifelines which underpin the worldwide economic system has gained much attention. The security of global maritime trade responsibility affects all nations around the world. The credibility of free and continual use of the world's oceans underscores our future sequence.

Non-Traditional Maritime Security Threats

Unlike the past, the present day enemies are unpredictable and unconventional as we envisage in the maritime domain. The security of this ocean around the world can be endangered by threats of terrorist threats, internal threats, transnational organized crimes and piracy threats, pilferage, etc at sea. Although both state and non-state actors can challenge maritime trading routes, the environment and maritime natural resources are endangered due to natural calamities. Non-traditional maritime security threats are those that (Dabova, 2013);

- Weaken economic growth and social stability.

- Challenge to control by traditional national military capabilities/ law enforcement agencies/economic sanctions.

- Are triggered by the non-state actors.

Figure 1: Non-Traditional Maritime Security Threats
Source:Developed by Author

Among the topmost list of non-traditional security threats, the researcher names certain non-traditional maritime security threats which affect the global maritime community as a whole, and the threats to maritime security are underpinned;

- Piracy.

- Illegal Immigration.

- Terrorism.

- Human, Drug, and Arms Trafficking.

- Climate Change.

- Illegal, Unreported, and Unregulated (IUU) Fishing.

- Environmental Degradation due to Illegal Fishing.

- Marine Pollution.

- Dumping of Waste.

- Ship Dismantling.

Overcoming Non-Traditional Threats as a Naval Affair

Using the research design of an investigative study related to overcoming non-traditional threats in a naval affair, the researcher presents the facts related to naval affairs examining through the methodology of process outlining, relying on documents, online articles, research papers, and some semi-structured interviews with senior naval officers are described below;

Military in all-purpose and develop and developing navies in the world enjoy a special position of following their development strategy, even if it diverges from the general policy of their countries (Mahawithana, 2022). Since maritime security remains principally a "Naval Affair", even though the growing naval competencies are not capable enough to defend the maritime domain. On the other hand, decreasing state control can allow naval businesses as power brokers to engage actively with the other stakeholders. In turn, it can give the navies even more advantage for expanding their control over maritime zones through aggressive pressure.

Understandably, an alternate mechanism is required for coordinated many-sided participation of traditional naval capabilities along with other national law enforcement agencies to increase the enforcement powers of the countries. As a naval affair, all regional navies must take initiative aims to overcome the failures of the collaborative naval approach increasing the awareness of the multifaceted nature of the contemporary non-traditional threats to the maritime domains. It will help to address the social issues that are driving people to engage in illegal maritime activities and to have an integrated institutional approach.

It is well-known fact that no single nation has the resources to address the security challenges of the maritime domain alone. As its interests in the maritime domain, are more and more interlinked and co-dependent (Abeygoonasekera, 2014). Thus it is required to understand collective accountability to deal with maritime security challenges amicably.

As the best example of non-traditional threats as a 'Naval Affair', the researcher could draw the attention to the recent incident in South-East Sri Lanka. By now everyone knows regarding the famous incident of MT New Diamond. However, the responsible agencies together with Sri Lanka Navy (SLN) and Sri Lanka Coast Guard (SLCG) manage to douse the fire without letting it be the second-largest oil spill in Sri Lanka. And also, in the very recent incident of MV X-Press Pearl, SLN along with SLCG and Indian Navy (IN) and Indian Coast Guard (ICG) joined hands to prove that overcoming non-traditional threats is a particularly a naval affair.

Figure 2: Fighting Fire on the MT New Diamond on 03 Sep 2020
Source: Developed by Author

**Figure 3 : X-Press Pearl Caught fire off the coast of Colombo
on 20 May 2021**
Source: Developed by Author

Thus, it is not only the navies around the region, it should be intended to be an interagency effort involving all the navies around the world and join hands with the respective country's coast guard, police, intelligence agency, antiterrorism task force, fishery, customs, immigration, health services. Similarly, the maritime industry authorities of respective countries establish the system of maritime domain awareness to drive effectively as a naval affair to address non-traditional threats at sea.

A Collaborative Approach

The viewpoint of a collaborative approach in this paper is the possible avenues that can be used by regional navies to provide a conducive environment

for developing a common framework with primary and secondary data that had been collected by the researcher.

It is particularly important to safeguard vital common interests like preserving maritime trade routes, protecting marine resources and responding to natural disasters. Questionably developing mechanisms to deal with such non-traditional maritime security threats which offers significant potential for countries to cooperate and work collectively. Based on the research by EL Dabova, the premise that current efforts to combat non-traditional threats in the maritime domain face as;

- Weakness of conceptual and institutional framework.
- Inadequacy of pertinent technical infrastructure.
- Weakness of precious national economic guidelines.
- Difficulties posed to public international law by non-state actors.

In the researcher's opinion, we shall all mitigate these towards a collaborative approach. It is required to develop a complex concept of non-traditional threats to maritime security that would comprise military, economic, legal and social characteristics. Additionally, it is a common interest on the security agenda, as a stage to overcome the current lack of inter-regional cooperation in creating integrated regional maritime security regimes.

Further, to discuss legal features of regional shared benefits in maritime security in a medium of a seminar or scientific workshop on a common platform where every navy can address and project their issues. Such forum can focus and discuss on the application of public law regulations to non-traditional security threats in the maritime domain. The topics and thematic areas could be nontraditional threats such as armed conflicts at sea, change of legal status of non-state criminals, and international "responsibility to protect", the evolution of the United Nations Convention on the Law of the Sea (UNCLOS) and the principle of freedom of navigation on high seas. This will pave the way for an understanding of interoperability between each other navies and make initiatives to strengthen efforts by a collaborative approach.

Creating a collaborative effort for a common task for multi-purpose applicability to the wide range of nontraditional threats would be an ideal option (Wijegunaratne, 2015). This cost-effective model could be designed by the joint endeavour to overcome and collaborative approach with partner navies around the world. As an eye-opener, it is worth of mentioning two incidents, which were quoted earlier in this paper, the MT New Diamond oil tanker and MV X-Press Pearl in which India, Russia, Singapore and Netherland joined hands with Sri Lanka to respond timely against marine pollution. It reveals the joint mechanism of other navies and a collaborative approach against non-traditional threats at sea.

In addition, as we are aware that the Fusion Centres were established after the 9/11 attacks to allow collaboration across jurisdictions to respond to criminal and terrorist activities on time. Those maritime fusion centres are also affiliated with centre that respond in the event of a maritime disaster and would be a better tool to use effectively. If the details of ships that are carrying such dangerous cargo and other details could be provided promptly through these Fusion centre most of the disasters due to accidents of such vessels can be mitigated.

Recommendations

Various viewpoints have been presented by the researcher on this theme. Out of the above areas that the researcher foresees the effective 'Regional Integration with other navies' can be sighted as the most important pillar for a collaborative approach.   From the SLN perspective, being an island nation and other growing concerns of the Indian Ocean Region (IOR) international relationships viewpoint, the author of this study presents a few recommendations for SLN commensurate with future roles and tasks. It encompasses considering modern challenges to the maritime domain, including non-traditional threats, where the collaborative approach is more efficient from an interest and capability standpoint. At the same time, the author of this study does not share the viewpoint of international law in particular under recommendation;

- This regional integration with other navies is significant to be expanded through robust defence cooperation and the actions are to be aimed at being proactive to events such as natural disasters, search and rescue operations, and marine pollution incidents with close coordination with the regional navies, coast guards and other maritime stakeholders.

- Formation of Maritime Defence Cooperation measures is necessarily required to go beyond the traditional models and it is to be concentrating on improved cooperation among the other navies in and around the region.

- SLN needs to shape its future role to safeguard regional safety and identify growing non-traditional threats, ensuring effective positioning of Maritime Governors (MG) in surrounding seas along with other maritime stakeholders.

- Effective use of institutions such as Fusion Centres, structures of authority, and sovereign capabilities to oversee maritime activities and safeguard national maritime interests with regional integration. Similarly, must focus on relaying maritime grievances and threats to investigate some of the key aspects of Maritime Domain Awareness (MDA).

- Continues to maintain an active role to secure the safety of shipping around the IOR and ensure their freedom of navigation. With the growing

threat of piracy still hovering, we must contribute toward the safety of sea lanes of Communication and strategic Sea Lines of Communications (SLOCs) with the mutually agreed joint patrol.

• SLN is responsible for carefully monitoring its EEZ to deter illegal fishers and ensure compliance with its laws and international rules and timely intelligence sharing with regional partners.

• Towards becoming a strong maritime nation, we require to study and adhere to best practices of the other countries in the region as well as around the world. Such lessons have rendered an enormous service in safeguarding the national maritime interests in the ever-evolving maritime domain.

• Accommodating the exchange of ideas on a common forum/ organization like Galle Dialogue, Indian Ocean Naval Symposium (IONS), Indian Ocean Rim Association (IORA), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), South Asian Association for Regional Cooperation (SAARC), Colombo Security Conclave (CSC), etc. to provide a good platform to share our maritime interests and enhance our participation in the regional maritime integrity maritime cooperation with the regional and extra-regional entities and, it is very much essential to maintain our stance in the international maritime community. Active participation in such events is very much vital in this nature and SLN initiatives like Galle Dialogue must continue forward.

• Sri Lanka is required to have a systematic broader awareness of the maritime domain and to effectively participate in protecting maritime interests. The available assets are insufficient to cater to the entire requirement, hence effective and efficient utilization will solve the problem along with the forethought acquisition of more suitable platforms.

Conclusion

It is reiterated that the focus should be to increase maritime cooperation to overcome non-traditional threats at sea among navies around the world. It is to be provided with an open and wide-ranging opportunity for the interchange of regionally pertinent maritime matters. Every endeavour should be to produce a flow of information between naval professionals and other stakeholders resulting in common understanding and agreements. Regional forums like dialogues, staff talks, maritime symposiums, and maritime seminars of this nature are excellent attempts to strengthen sovereignty around the world through mutual deliberations and the exchange of thoughts.

The collaboration between the navies is vital to effectively advance

their shared commitment to protect maritime and sea-lane security. The use of cooperative efforts rather than individual efforts is going to be the key to success in encountering these non-traditional challenges at sea. The solution must also be found collaboratively by deepening partnerships between all Tri Forces, countries with other maritime stakeholders, regions, and finally the entire globe.

In this contemporary maritime domain, the mission of the navy has become more multifaceted and complex than ever before. Overcoming non-traditional threat at sea was the key stage for many dramas in the history of mankind. It is evident that it will remain the same in the future as well with growing situations. Therefore, the concepts of maritime strategies toward a collaborative approach should also progress congruently to the advance of new encounters at sea.

"*Our connection to the Ocean is very personal. Our lives, cultures, and economies are inherently shaped by the ocean as a provider and a protector. It is our home, our lifeline*"

Palau President Surangel Whipps Jr

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ENHANCEMENT OF TALENTS AND COMPETENCIES OF MIDDLE GRADE EXECUTIVE BRANCH OFFICERS THROUGH NAVAL TRAINING

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Abstract

Training and development, talent enhancement, and competency development are the key factors supporting the development of professionally competent officers in sustainably developed navies. In this study, the effects of long naval specialization training (done in India and Pakistan) on improving the talents and competencies of middle-grade executive branch officers on-board ships were looked at in depth. Accordingly, an exploratory research plan was followed, and the deductive approach was chosen. Eighty-one people answered a survey, and correlation and linear regression models were used to analyse the results. The study found that long specialization training, talent enhancement, and competency development all had moderately and strongly positive relationships with one another. It showed that the people in the executive branch who had followed specialized training could do their jobs up to the expected level. As a result, the researchers list the reasons for and the significance of having proper training and development in line with developing talents and competencies.

Keywords: Naval Specialization Training, Talent Enhancement, Competency Development

Introduction

Training and development programmes have elicited personal and organizational inspiration (Mulang, 2015). Furthermore, training and development are essential components of human resource management across career progression. Training is considered a short-term process of delivering education that utilizes organized and systematic processes by managerial personnel to gain knowledge and the skills required for a definite purpose (Grubb, 2007). Development is a long-term process of education that uses an organized and systematic method for staff to gain theoretical and conceptual knowledge for the general purpose (Grubb, 2007). Moreover, literature support that systematic training and development lead to the enhancement of individual talents. Talent management helps an organization to build a skilled workforce in such a manner its vision and mission can be carried out. Talent management is vital as skilled workers can hold important positions. Baum (2008) explains that talent management is an organizational way of thinking that tries to ensure enough talent to put the right people in the right jobs at the right time, which helps to achieve strategic business goals.

Therefore, training and development, talent enhancement and talent management significantly contribute to build a competent workforce and realising the vision and mission of the organization. Human resource demand will lead to the promotion of talent management for organizations to gain a competitive edge (Perrin, 2003). Therefore, new trends in human resource management put more emphasis on talent management strategies as organizational training needs to change to improve the workforce's skills and abilities. Even though research shows that talent management is a growing field, the Sri Lankan Navy (SLN) still needs to emphasise how well it works. However, SLN has invested heavily in overseas training after realising that training is the best way to improve the talents and competencies of naval officers.

On the other hand, Sri Lankan government has made dynamic economic initiatives to transform the country into a regional economic hub in the Indian Ocean (Finnigan, 2019). As a result, SLN needs to ensure that its naval strategy is in-line with the government's maritime strategy by dealing with traditional and non-traditional security threats. Furthermore, the maritime doctrine of Sri Lanka (MDSL, 2020) states that SLN aims to expand as a medium-regional power projection navy. Hence, there is an immediate need to train and motivate naval personnel quickly to do their jobs well and efficiently. Thus, ensuring the professional training of middle-grade executive branch officers has become a far-reaching objective, as they are the significant interlink between the organization's structure at the tactical and strategic levels. Therefore, competent and talented officers are critical to the long-term development of a professional navy. SLN provides vital local and foreign courses for middle-grade executive branch officers and among all its long specialization training is given a prominence. Therefore, the study explores the talent enhancement and competency development of middle-grade executive branch officers who have followed long naval specialization training courses.

Methodology

This study was focused on gathering information on to what extent talent enhancement and competency development were achieved through long naval training specialization courses. The sample included navigation, communication, and gunnery qualified SLN officers trained in India and Pakistan who have served on-board SLN ships within the last five years. Primary data was collected through a survey-based structured questionnaire distributed in Google form amongst middle-grade executive branch officers from the above sample.

Quantitative data was analysed using bivariate analysis in SPSS version 22. As part of the conceptual framework shown in figure 1, correlation analysis and linear regression analysis were used to look at the relationships between the independent variable (Naval Specialized Training), the mediating variable (Talent Enhancement), and the dependent variable (Competency Development).
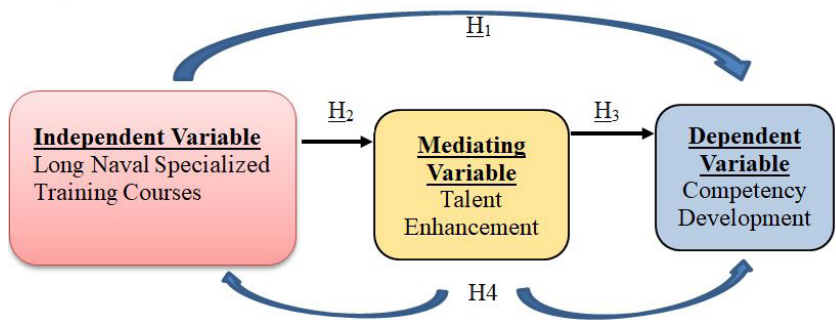
Conceptual Framework

Figure 1: Relationships between the Independent Variable, Mediating variable, and Dependent Variable
Source: Developed by Author

Results and Discussion

Eighty-one officers responded positively to the questionnaire, and most respondents represented specialized navigation officers (40.74%). Then, SLN officers completed communication specialization with 30.86%, and SLN officers followed gunnery specialization with 28.4%. Therefore, the sample proportion is similar to the source existing workforce.

Analysis of Variables

Table 1: Descriptive Statistics of Naval Training Specialization, Competency Development and Talent Enhancement

(a)	(b)	(c)	(d)	(e)	(f)
Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
NavalTraining Specialization	81	2.44	4.88	3.8032	.47753
Competency Development	81	2.00	5.00	3.8721	.53024
Talent Enhancement	81	2.00	5.00	3.9588	.56182
Valid N (listwise)	81				

Source: Developed by Author using IBM SPSS 22

According to the descriptive statistics, it was revealed that the mean values of naval training specialization, competency development and talent enhancement were 3.8032, 3.8721 and 3.9588 respectively. That means respondents ranked the naval training specialization, competency development and talent enhancement variables as effective variables.
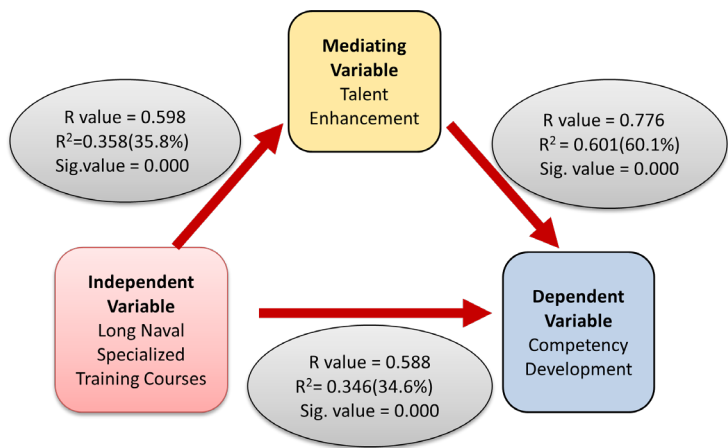
Figure 2: Relationship amongst Variables of Naval Training Specialization, Talent Enhancement and Competency Development
Source: Developed by Author using IBM SPSS 22

Naval Training Specialization and Talent Enhancement

According to the ANOVA test result, the significance value of the naval training specialization and talent enhancement variables is 0.000 and it is lower than 0.05. Therefore, the result of regression analysis reveals that naval training specialization and talent enhancement have a relationship with each other. The correlation analysis results reveal that the independent variables naval training specialization and talent enhancement have a positive value of 0.598, which is higher than 0.5. Therefore, a moderately positive relationship exists between naval training specialization and talent enhancement. The R2 value is 0.358; therefore, only 35.8% of talent enhancement is explained by naval training specialization.

Naval Training Specialization and Competence Development

According to the ANOVA test result, the significance value of the naval training specialization and competency development is 0.000 and it is lower than 0.05. Therefore, regression analysis results reveal a relationship between naval training specialization and talent enhancement. The result of the correlation analysis depicts the correlation value between naval training specialization and competency development as 0.588, which is higher than 0.5; therefore, it has a moderately high positive relationship between naval training

specialization and competency development. The R2 value is 0.346, and only 34.6% of competency development is explained by naval training specialization.

Competency Development and Talent Enhancement

The significance value of the competency development and talent enhancement variables is 0.000, which is lower than 0.05. Therefore, the regression analysis results reveal that the variables competency development and talent enhancement have a relationship. The correlation analysis results reveal that the correlation value between competency development and talent enhancement is 0.776. Since this value is higher than 0.7, it has a significantly high impact, and the dependent variable of competency development has a significantly high positive relationship with talent enhancement. The R2 value is 0.601, and 60.1% of competency development is explained by talent enhancement.

Talent Enhancement

Talent enhancement has a moderately positive relationship with naval training specialization, and talent enhancement acts as the dependent variable while training specialization acts as the independent variable. Furthermore, talent enhancement acts as an independent variable of competency development and has a strong positive relationship. Since talent enhancement has a comparatively strong positive relationship with naval training specialization and competency development as a dependent variable and an independent variable, respectively, it acts as a mediating variable between naval training specialization and competency development.

Since naval training specialization has a positive impact on talent enhancement, objective-oriented training must be ensured to increase the percentage of talents as Colquitt et al. (2001) believe that trainingv facilitates are required to improve individual capabilities in managing responsibilities, high workload, and commitment to the job by acquiring skills. On the other hand, the competency level of the middle-level executive branch officers can be increased by making a positive relationship with training and talent enhancement by developing the willingness of the individual to achieve the work target. This can be achieved through training, which was revealed by Wright and Geroy (2001), who mention that employee competencies are changed through effective training programmes. Therefore, it is imperative to improve training programmes to enhance significant improvement in talents and competencies.

Factors Affecting the Effectiveness of Long Naval Specialization Training

Table 2: Descriptive Statistics

Dimensions of Naval Training Specialization	N	Min	Max	Mean	Std. Deviation
Training Environment	81	2.00	5.00	4.1204	.61251
Training Methods and Preparedness	81	2.33	5.00	3.9259	.59628
Appropriate Training Curriculum	81	1.67	5.00	3.6996	.66584
Training Programme and Duration	81	2.00	4.67	3.6214	.59571
Motivation of Trainee	81	1.67	5.00	3.5432	.70404
Effectiveness of Naval Training	81	1.00	5.00	4.0247	1.01212

Source: Developed by Author using IBM SPSS 22

Table 3: Model Summary-Simple Linear Regression

Dimensions Predictors: (Constant)	R value (Correlation)	R Square value	Significant value(P<0.05)
Training Environment	0.580 (Moderate positive correlation)	0.336 (33.6%)	0.000
Training Methods and Preparedness	0.459 (Moderate positive correlation)	0.210 (21%)	0.000
Appropriate Training Curriculum	0.289 (Low positive correlation)	0.084 (8.4%)	0.009
Training Programme and Duration	0.430 (Moderate positive correlation)	0.185 (18.5%)	0.000
Motivation of Trainee	0.244 (Low positive correlation)	0.060 (6%)	0.028

Source: Developed by Author using IBM SPSS 22

As illustrated in table 2, study examined that five factors have impacted the effectiveness of the long naval specialization training and the mean value of those factors, namely training environment, training methods, appropriate training curriculum and preparedness, training programme, and duration and

motivation of the trainee, were stated as 4.1204, 3.9259, 3.6996, 3.6214, and 3.5432, respectively. Since mean values resulted from the respondent's rating and all five-factor values are close to 4, there is a positive impact on the effectiveness of the long naval specialization training.

As illustrated in table 3, according to the regression and correlation analysis, five dimensions of naval training specialization, which had acted as independent variables, had a positive relationship with the dependent variable of long naval specialization training. From the value of the correlation analysis result, it was revealed that the training environment, training methods and preparedness, and training programme and duration have a moderately positive impact; therefore, a moderate positive correlation on the dependent variable of long naval specialization training. However, appropriate training curriculum and trainee motivation have a weak positive impact; therefore, a low positive correlation on the dependent variable of long naval specialization training.

Conclusion

The development of talents, skills, and competency are vital factors that the officer must develop. This study determined whether long-term naval specialization training in navigation, communication, and gunnery conducted in India and Pakistan could enhance the talents and develop the necessary competencies of middle-grade executive branch officers for them to fulfil their job responsibilities in accordance with naval standards. As mentioned earlier, the officers were happy with the skills and talents they had gained from long-specialization training in other countries. This made them happy as specialization courses in naval training in India and Pakistan were linked to talent growth. Furthermore, naval training specialization showed a highly positive impact on competency development. Talent enhancement also had a relationship with competency development. Talent enhancement was an intermediate variable for naval training specialization and competency development. Therefore, long specialization courses in navigation, communication, and gunnery conducted in India and Pakistan enhanced the talents and competencies of middle-grade executive branch officers by facilitating their ability to discharge job responsibilities effectively and to the expected standard.

Furthermore, the study examined five factors that have impacted the effectiveness of the long naval specialization: the training environment, training methods preparedness, an appropriate training curriculum, a training programme and duration, and finally, the trainee's motivation. Thus, the question of how the most effective training can be incorporated and must be examined by analysing the five dimensions of training. Moreover, this study identified that the most influential independent variables toward the dependent variable of long naval specialization training were the training environment, the training methods and preparedness, and the training programme and duration. The

least effective independent variables were the appropriate training curriculum and the trainee's motivation. Additionally, in the future, SLN is required to ensure that all other training programmes are met with the expected talent enhancement and competency development SLN is needed to grow in the areas of talent identification, talent development, and talent utilization to develop a unique talent management strategy.

Recommendations

The study examined how successful training and development can improve competency development and talent enhancement.Therefore, the Navy needs to consider what makes training effective so that skills and abilities can be improved. The followings are the suggested recommendations for improving training and development factors.

The training environment has positively impacted the effectiveness of long naval specialization training; thus, development in the training environment will have a positive impact. Therefore, it is recommended that (the SLN) department of foreign training should monitor whether; training programmes made by foreign specialization training schools create a positive training environment for the trainees by establishing interactive communication at least once a month.

Developing interactive sessions and different teaching techniques is suggested since many respondents are unsatisfied. As an example, adopting coordinated team training can be suggested. Because developing the connection between teams can enhance enthusiasm and lead to synergy. Further, the team can collaborate with Indian and Pakistani students and develop engagement in training which will maximize the training outcome.

It is strongly advised to include SLN input in developing the training curriculum for the long specialization training (foreign). Furthermore, providing enough practical exercises is recommended by attaching SLN officers onboard the host country's naval ships during the training to impart theoretical knowledge into practical applications.

The duration of an effective training programme can be decided by assessing the training needs by conducting training needs assessments. Hence, it is recommended that SLN contribute to SLN training demand in decision-making by stating the objective of the training and identifying the gap through a needs assessment.

The motivation factor is much more essential to receive better training. Therefore, it is recommended to decide on future education opportunities based on the current performance appraisals of the individuals. Furthermore, SLN must evaluate the progress of the individual throughout the training and give

them due recognition in their career development.

It is suggested to conduct an in-depth study by taking only one long specialization training course at a time and obtaining feedback from the Commanding Officers of the ships, the Director of the Naval Training, Flag Officer Commanding the Naval Fleet, and foreign training schools responsible for training to understand accurately how foreign training has enhanced the talents and competencies of officers.

Finally, it is suggested that SLN monitor each training programme to ensure that training meets the expected talent enhancement and competency development for naval personnel to discharge naval duties professionally.

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PROTECTING MARITIME ENVIRONMENT FOR SAFTY OF THE MARITIME SILK ROUTE: NEED FOR AN INTEGRATED APPROACH BY PUBLIC AND PRIVATE INSTITUTES IN SRI LANKA

Lieutenant Commander (IT) Kanchana Bandara Rajapaksha

Abstract

The protection of the maritime environment is important for the maritime silk route continuation. It is required to have both government and non-governmental organizations approach towards the security of the environment. The main aim this study is to find mechanism to protect the environment through best practices. Sri Lanka Navy has taken first steps to protect the maritime environment by implementing many environmental protected projects. The coastal belt has identified as main critical point of it. Therefore, the software which is enabled with GIS and IT proposed to develop for the use of the individuals who loves to protect our costal belt. Initially, this will implement for the coastal community to report any waste dumping information to report for the Navy. Later, this can utilize as national project with the IT and GIS solutions.

Keywords: IT, GIS, Environmental, Coastal

Introduction

The securing of the maritime environment is one of critical management aspect for the Sri Lankan community. It is essential to have collaboration with both government and non-governmental organizations in the country.

Currently, there is a plethora of documentation and a repository of knowledge available on the application of protection in the maritime environment in regular domains with various scales of activities. However, it is well known with regard to proper mechanism about the determination of the best practices and factors on how maritime environment protection can be achieved effectively using highly hierarchical and other organizations.

Present Situation

At present, the various maritime protection methodologies are commonly used and widely accepted in organizations where technology plays a dominant role and provides guidance in the formulation of a sound Geographic Information System (GIS)(Desprats, 2010).

The objective of this study is to find out the concrete methodology to protect the maritime environment by continuation of the best practices through whole organizations which directly or indirectly disclose. The literature review has found the importance of Sri Lanka in the Indian Ocean Region (IOR).

Therefore, the approach towards the implementation of integrated system can be implemented through a systematical methodology. Sri Lanka Navy (SLN)has taken key role for the protection of the maritime environment. The prominent stakeholder of the maritime environment identified with the surround of coastal belt. Therefore, the study scope is limited to find out the integrated approach to protect the coastal belt in Sri Lanka. Sri Lanka coastal belt is about 1056 miles long and lies with richest marine protection environment. The main focus is to implement sustainable mechanism to involve both public and private sector to adhere the rules of coastal protection. At last, the Sri Lankans can achieve the goal of maritime environment protection for the younger generation of the country.

Past Incidents

For instance, the past incidents could ponder to obtain the better understanding of proper mechanism. In year 2004, the tsunami disaster has triggered land users that the importance of perceiving the environment by protecting the mangrove or other adequate vegetation (Mattsson et al., 2009).

Secondly, the Sri Lankan coastal environment has become one of the most important aspects for IOR. The location of our motherland has paramount ability to attract the maritime activities such as marine transportation. The Figure 1 shows the Sri Lanka and its maritime environment.
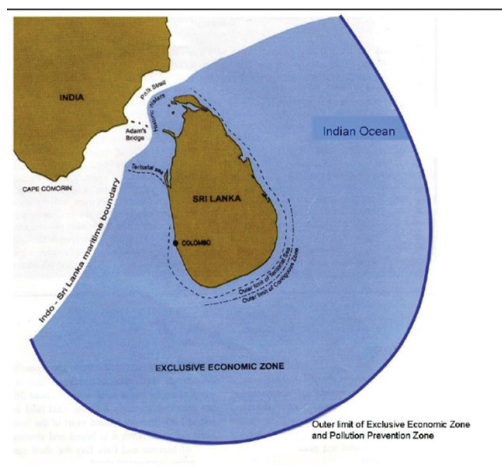
Figure 1: Importance of the Maritime Environment
Source: Udara Arachchige et al (2021)

Naval Duty

This extreme condition has immensely benefited for the economy of Sri Lanka. Hence, in order to protect the coastal area, the both private and public stakeholders should get together to implement incident management mechanism in the coastal area. The stakeholders consist with fishing communities, Sri Lanka Navy, Sri Lanka Coast Guard, Sri Lanka Police and public coastal area community, While the facts of application and operation of the incident management are handled by the public security organizations and end user dominant aspects of deployment of system reliant on the procedures and policies of the Sri Lankan government. In this context, the identification of proper reporting mechanism to improve identification of vulnerable activities is critically important.

The Solution

The Sri Lanka Navy can obtain such important information through private sector organization. For instance, if there is a proper mechanism to report coastal vulnerable activities through proper channel to the Sri Lanka Navy, the protection of the maritime resources can be increased drastically.

The next step is to find out the proper methodology to address the whole coastal community. Firstly, there are several options to gather the literature. The expert knowledge sharing technology has used as one component (Chang, 2012). The new alternatives such as geobags can be used to protect the coastal environment (Pilarczyk, 2008). when considering the public and private sector organization, it is worthwhile to use integrated Information Technology (IT) and Geographic Information System (GIS) based mechanism to use in the coastal related issues. The traditional paper-based systems are outdated, when considering the prevailing technology advancement.

The following Figure 2 shows the dashboard of the reporting mechanism.

Figure 2: The Proper Reporting Mechanism
Source: Developed by author

The Information Technology Management can be used to implement set of reporting mechanism through web based or mobile based integrated. Furthermore, the regulations of data protection policy, monitoring process and

controls are some of the important elements of an IT (Information Technology) management of this system. It is necessary that the management and staff of the public sector organization only have access to this critical information and should maintain the hierarchy of organization.

The proactive security metrics used by Information Technology supported environment is mentioned in the best practices of the industry and there are policies and guidelines for the same. Therefore, end user satisfaction in the private sector is ensured through an information security supported environment. The communication process and co-operation can be improved through proper training of the integrated approach. Policies and guidelines can be used to control the behaviour of the end users, thus increasing the security of the Information Security Management(ISM)(Hajdarevic et al., 2016).

Otherwise, many private organizations might misuse this information for their benefits. The study reviews the effect of the new technology on the mitigation of the costal damage to the Sri Lanka. The relationship between private sector persons and public sector employees are very impotent to implement this new normal approach. The successful implementation of this methodology will cause to improve the IT knowledge in the private and public sector. The public sector such as Sri Lanka Navy can strengthen the vulnerability assessment of the coastal belt to protect the maritime environment. In fact, the usage of the system can be increased by conducting awareness training sessions for public sector and private sector organizations. Furthermore, the detailed descriptions of the system with the user manual are used to increase the knowledge of the people in the public and private sectors.

A newest approach used for both Information Technology and Geographic Information System integrated application is as shown in Figure 3.
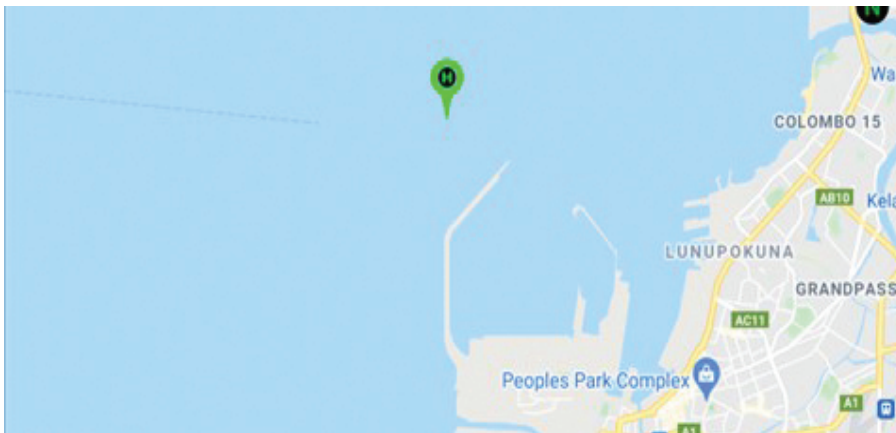
Figure 3: Vessel Display on-board MV X-PRESS PEARL
Source: Developed by author

Reporting Mechanism

The proper reporting mechanism has used as Figure 3 by the private sector organizations to send information via Information Technology system to the public sector organization such as, Sri Lanka Navy or Sri Lanka Coast Guard. Hence, the rescue team can be deployed easily to the location without much delay. As the Information Technology system has capability to update the incident details simultaneously, for instance the private sector personnel send some information on coastal vulnerability through the system, it will automatically pop-up at the public sector personnel's screen. The Information Technology has used to communicate it in both public and private sector organizations. The user training of the organization's staff plays a vital role to implement this system mechanism. In order to safeguard the confidentiality in Information Technology systems, it is needed to introduce the policies such as the prohibition of unauthorized access (Asosheh et al., 2009).

This is an appraisal of the effectiveness and efficiency of an Information Technology system based on the controls affect the effectiveness and efficiency of the private and public sector organizations. Standards and guidelines are needed to accomplish this task in the both organizations. The control process can be strengthened by introducing new policies and guidelines to both organizations (Boehmer, 2008).

A quality control process is very useful for the system implementation. A monitoring process needs to be established to monitor the incidents by the public sector organizations such as Sri Lanka Navy and Sri Lanka Coast Guard. The employee performance is valuable, in order to increase the efficiency and effectiveness of the Information Technology in organizations (Hsu et al., 2016).

A practical approach to the use of this Information Technology based coastal incident reporting and management system totally depends on its users. The change management process should be implemented to change both private and public sector organizations to use this computer or mobile based reporting system. A practical approach of conducting awareness programmes may positively affect the performance of the system usage in organizations such as fishing communities and government forces.

The main objective of the computer or mobile based coastal incident reporting and management system is to ease the process of the government organizations to mitigate the vulnerabilities which relates with the maritime environment.

Modern technology can be positively used to develop this exceptional software and the pilot prototype can be tested under different practical conditions. For instance, Figure 4 shows the vulnerable threat of the coastal

waste. Anybody in the private organization such as fishing community can inform the public sector organizations such as Sri Lanka Navy or other coastal protection authority through this type of system in an efficient manner

Figure 4: Coastal Waste Information
Source: Developed by Author

Additional Features

Additionally, this software provides comprehensive knowledge and situational awareness capabilities to the Operations Room in aid of achieving the objectives of public sector organizations such as Sri Lanka Navy.

The rescue team can reach the location within short time to resolve the costal vulnerability as shown below;

Figure 5: Response by the Public Organization
Source: Developed by Author

The Result

The aim of this valuable software is to fill the knowledge gap in technology insights between the public sector organization and private sector organization in Sri Lanka. Furthermore, this system is a national requirement of a maritime environmental security establishment, in order to achieve the following objectives;

• Reporting coastal waste information.

• Display the information to the relevant authorities such as Sri Lanka Navy, Sri Lanka Police, Sri Lanka Coast Guard, Marine Environmental Protection Authority (MEPA).

Recommendations

It is recommend to implement the following insights for adopt this newest system with regard to the SLN prospective;

• Conduct training for employees about the computer systems. The goal of increasing employee awareness of the public and private sector organizations about marine environmental protection.

• Prepare a user manual for Information Technology awareness methods for users, managers and top-level managers to upgrade the knowledge and increase the awareness of the system.

• Conduct frequent knowledge sharing sessions for public and private sector employees regarding the coastal waste management system, vulnerabilities and the protection of computer/mobile systems from the theft and third parties.

• Align the vision for Information Technology with the fishing communities' vision in order to provide efficient and reliable reporting service to the Sri Lanka Navy.

• Conduct hands-on training and awareness programmes for the employees regarding benefits of the achievement of Information Technology usage with regard to the vulnerability reporting. The top rank personnel's in the public sector should educate and encourage subordinates to have a positive attitude about the success of implementation in information technology based coastal waste management system.

• Utilize the coastal incident reporting and management system to provide important insights into the public and private sector organizations for successful implementation of incident reporting and management. Furthermore, three human factors have been identified to be highly

positively correlated to the successful achievement of Information Technology in the private and public organizations. The study proposes a set of guidelines by using as industry best practices that correlate with public and private organizations to improve the efficiency and effectiveness of the same. These guidelines will benefit the organizations by increasing the quality, reliability and efficiency of the coastal waste management system. It is recommended to adhere with these guidelines which mitigate the risk and vulnerabilities, and will enable the successful achievement of marine environmental protection.

• Address the co-operation, awareness and attitude factors of the public and private sector organizations which are having high effectiveness in the 'Successful achievement of incident management in marine environmental protection'.

• Utilize this coastal incident management system to provide private organizations such as fishing community of the ground level personnel to report timely, accurate and comprehensive information to public sector persons to aid rapid, correct and decisive decision making in the field.

• It is essential to utilize this mobile and web based software to boost the knowledge and proficiency of personnel who stand to benefit from its functionalities, as its potential to improve incident reporting, monitoring of the coastal belt.

• Recommend to conduct end user trainings to the fishing community aid in the success of future endeavours of the incident reporting in the costal waste dumping.

• Recommend to mitigate the challenges and limitations encountered in this incident report system's implementation. Firstly, the difficulty in convincing the private sector employees due to the lack of knowledge about the importance of coastal waste incident reporting system and they are reluctance to change existing behaviour. This could be eliminated by providing comprehensive knowledge of incident management system through training.

• Recommend to narrow down the system for coastal belt incident reporting, as it was the most significant and important factor, among other marine environmental factors. Also, the system scope was limited to a public sector and private sector organizations. The human factor was considered as end user of the system.

• Recommend to support end users causing difficulties in changing the cultural patterns of them who are reluctant to adopt new technology due to lack of understanding of the importance of waste incident reporting. Furthermore, the reporting system can be distribute among fisheries community and control panel can be distribute among the public sector organization such as Sri Lanka Navy and Sri Lanka Coast Guard. The

scope of this incident management system was limited to the coastal belt due the high importance.

• It is recommended extending the system up to the other marine environmental stakeholders such as sea (no more than 5 Nautical Miles distance).

• Utilize current technology to mitigate the vulnerabilities effect into the marine environment as well as to mitigate the unethical transactions. Furthermore, the current incidents of the sea area can be obtained through the fisheries community through this application and it is recommended to have motivational factors.

• Therefore, it is necessary to implement rewarding system to the private sector organizations such as fisheries community to report the suspicious information through the mobile or web based system.

• Nevertheless, the information sender details should be kept in a secure manner and not to disclose prior approval or authorization of the public sector organization such as Sri Lanka Navy, Sri Lanka Coast Guard, Sri Lanka Police or any other government military organization.

• The disaster recovery plan needed to implement within two disaster recovery sites. Those should situate in the two different geographical locations within the Sri Lanka.

Conclusion

In conclusion, this aforementioned most effective coastal incident reporting and management system will cause to mitigate the marine environmental pollution effect by providing comprehensive knowledge repository to the public sector organizations such as Sri Lanka Navy and Sri Lanka Coast Guard.

Finally, the marine environmental protection is one of the premier goals and liable to protect it for the future generation and the proposed integrated private and public organizations technological approach will achieve the dreams through reality. Sri Lanka is our nation and we must protect our motherland for supporting to the silk route security as well.

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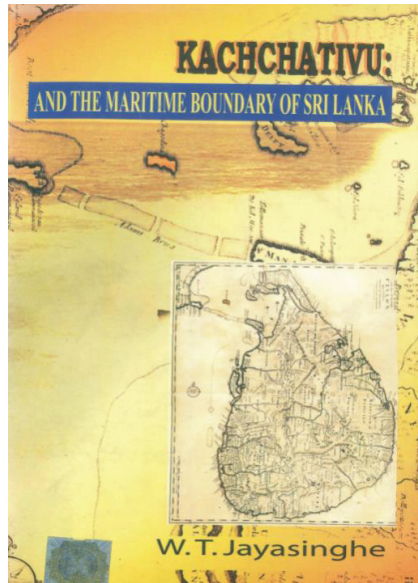Pilarczyk, K. (2008). Alternatives for coastal protection. Journal of Water Resources and Environmental Engineering, 23, 181-188.

BOOK REVIEW
KACHCHATHIVU: AND MARITIME BOUNDARY OF SRI LANKA

Lieutenant Commander Sandun Wijerathne

Kachchativu is a small island which is situated in the Palk Bay, Sri Lanka. Lies between 09° 38"North and 079° 51" East, the island is 14 nautical miles South-West of Delft Island on the Northern coast of Sri Lanka and 15 nautical miles North-East of Rameswaram on the Southern coast of India. As long as Sri Lanka's maritime boder is concerned, it is crucial to talk about the location of Kachchativu Island. The exact maritime boundary line between Sri Lanka and India and how Sri Lanka's maritime boundary was negotiated between Sri Lanka and India are topics covered in the book, Kachchativu: and maritime boundary of Sri Lanka by Mr. WT Jayasinghe, former secretary, Ministry of Defence and External Affairs from 1972 to 1989.

The author, Mr. WT Jayasinghe, narrates the book in nine chapters including Introduction, Historic waters, The 1921 fisheries line, Kachchativu, Illicit Immigration, Dudley Senanayake - Indira Gandhi talks, Sirimavo Bandaranaike - Indira Gandhi talks, The Maritime zones and Epilogue by nourishing the information about all the relevant facts to the reader. The style of his writing presents a balanced and nuanced view of the subject matter to attract desirous readers.

The argument brought up by the island of Kachchativu in Sri Lanka-India relations is explored in the book, Kachchativu: and maritime boundary of Sri

Lanka. This argument could have caused a significant dispute between both countries, However it was avoided through diplomatic and peaceful discussions and negotiations between the leaders of both nations. Kachchativu Island, which is a small island, is widely renowned for its prawn fishing.

Author vividly illustrates the history of Sri Lanka and its economic background, the topographical location and its advantages, and also the maritime boundaries of Sri Lanka and India in the introduction. Afterward in the Historic waters in chapter two, he depicts his profound knowledge on, how Sri Lanka evolved as an island from the Asian continent. Mainly it describes the maritime jurisdiction that Sri Lanka may exercise on her Western seaboard. As stated in chapter two, both Sri Lanka and India have designated the seas in the Gulf of Mannar, Palk Bay, and the Palk Strait as their Historic Waters.

Kachchativu Island is widely believed to be under Sri Lankan sovereignty despite being located in an area that is strategically very significant to India. The information about the problem that aroused between the two countries and how it was resolved is the general content of this book and it is clearly described by Mr. WT Jayasinghe, the chief negotiator for Sri Lanka who also worked alongside Prime Minister Sirimavo Bandaranaike at the ministry of foreign affairs as controller of immigration.

On his official visit to India in December 1968, Prime Minister Dudley Senanayake raised concerns, as mentioned in the book, when he deliberated with Prime Minister Indira Gandhi about the island and formally stated his position that there was no doubt about Sri Lanka's sovereignty over Kachchativu, as it was a part of Sri Lankan territory. Due to India's claims, which were backed up by the Rajah of Ramnad, this became a major issue. However, India made it clear that it could be open to discuss over the division of the island between India and Sri Lanka.

When Prime Minister Sirimavo Bandaranaike brought up this issue once again as it remained ambiguous till 1974 during her official visit to New Delhi in January 1974, the author notably describes several meetings held with the participation of Mrs. Indira Gandhi.

Mr. WT Jayasinghe has been able to enlighten us about Sri Lanka's maritime Zones and how they changed following active participation in the third United Nations Conference on Law of the Sea (UNCLOS III) before the book's conclusion. Additionally, he discussed the benefits of active involvement in UNCLOS III, as well as how participants contributed to achieve the conference's goals. The author has clearly defined baseline, territorial waters, contiguous zone, exclusive economic zone, and isobaths. He also has discussed all of Sri Lanka's maritime border laws, how they were developed, and the pioneers who were responsible for them.

The author provides a better conclusion with what he briefly described throughout the book, and he makes an expound on some of the facts. The speciality of the author was shining more in the conclusion of the book, as he narrates it in detail with clarity.

The book Kachchativu: and Maritime Boundary of Sri Lanka, is recommended for everyone who is engrossed in knowing more about the history of the dispute between Sri Lanka and India over Kachchativu Island and the fishermen from both nations, the information about the historic waters between India and Sri Lanka, the maritime boundaries of Sri Lanka, and the involvement of Sri Lankan political leaders in the dispute over Kachchativu Island. Additionally, it might be suggested to academics looking into the development of islands around Sri Lanka, the maritime boundaries of Sri Lanka and how they evolved, etc.

The advantage of referring to this book is that anyone who reads this book can get the exact knowledge of what the author experienced, as a directly involved person on the stage when those issue arose with the representatives of Sri Lankan government at that time. That advantage cannot be taken from any other book, since authors are not involving directly with such diplomatic level issues. Honorable Mr. WT Jayasinghe has successfully produced a very important and informative book; Kachchathivu: and maritime boundary of Sri Lanka.

ADMIRAL CLANCY FERNANDO MEMORIAL ESSAY COMPETITION 2022
1ST PLACE OF EACH CATEGORY

THE BLUE ECONOMY AND SUSTAINABLE USE OF THE OCEAN: ROLES OF SLN AND SLCG

Commander (C) Anushka Alahakoon, RSP**, psc

Introduction

Sri Lanka (SL) is the twenty-fifth largest island in the world which consists of approximately 1340 km coastline and has an extensive marine environment that is almost eight times of island's land mass. According to the United Nations Convention of Law of the Sea, SL has claimed territorial waters of 21,500 sq km and an Exclusive Economic Zone of 517,000 sq km. Further, due to its strategic geographical location in the Indian Ocean, Sri Lanka has a voice of the sea which has always spoken to the soul of geopolitics since ancient times. Other than the geopolitics, the atmosphere and climate of this small nation are relying on various ocean factors.

The concept of the Blue Economy was introduced by the prominent author, Gunter Pauli in his book which was published in the year 2010 'The Blue Economy: 10 years, 100 innovations, 100 million jobs'. This book is emphasized the sustainable use of ocean resources for economic growth, improving livelihoods, job opportunities, and a healthy ocean ecosystem. In the year 2012, the United Nations initiated and reflected Sustainable Development Goal (SDG 14) which calls to conserve and sustainably use the oceans, seas and marine resources for the development. With these inceptions, the blue economy is becoming a new paradigm looking into the ocean, not just harnessing the resources/wealth but also making particular actions to ensure the sustainable ocean environment and its persistency for future generations.

Geo-strategic advantage possessed by SL has been amply discussed in the literature and established as a cardinal fact. However, literature on strategic planning and actions to maximize the advantage is lacking. Therefore, it is high time for the deliberate role of every stakeholder in support of a future blue economy. At this outset, Sri Lanka Navy (SLN) and Sri Lanka Coast Guard (SLCG) are the key performers providing maritime security to provide peace, security and stability, thus making the maritime space the key driver for sustainable economic development. Therefore, this literature will discuss the roles of SLN and SLCG to enable the blue economy and sustainable use of the ocean environment around SL.

Necessity of Blue Economy Concept to SL

The world oceans can be considered as stockpiles of vital natural resources which are mostly untapped and yet to be extracted and explored with

the latest technological development. Today globalization is not a prominent factor in the world economy and therefore, it is essential that each nation's people independently and cooperatively take initiative to obtain the resources available in the marine environment in a sustainable manner. The potential for harness ocean resources to achieve the aim of sustainable development as well as the blue economy is complicated. However, it can be preserved and refurbished for the marine ecosystem for future generations. Thus, marine resources are becoming a key factor in the augmentation of the economy of developing countries based on sustainable blue economy development both internally and externally. Most probably in the year 2025, the global economic main concerns can be focused on the oceans with the challenges of extracting resources without being harmful to the healthy marine ecosystem and facilitating the sustainable blue economy concept.

With regards to the above facts is recommended that adopting the Blue economy is very much mandatory rather than consider an optional factor in order to obtain an exceptional opportunity to attain its national socio-economic objectives as well as eradicate poverty along with sustainable use of marine resources in the developing countries like SL. Basically, the existing SL economy is based on Brown Economy aspects where it solely depends on land base resources which are considered as costly, subsidized, polluter and heavily depleted. Therefore, blue economy can be considered innovative, competitive, create new jobs, valuable and resourceful. However, harnessing these advantages also has barriers attached to them. The opportunities around the SL are extremely challenged by regional/global powers and being a tiny contestant in a global political arena, SL has to initiate a vigilant approach. The Government of Sri Lanka has promoted a blue economy initiative under the 'Sri Lanka NEXT' programme in October 2016 (Senaratne, 2017). Accordingly, the nation has established a desire to become a maritime hub in the Indian Ocean, acquiring the benefit of its vital geographical location and proximity to East and West key sea lanes. In this national perspective, SLN and SLCG have vested with great responsibilities to achieve the main objectives pertaining to the blue economy model by implicitly or explicitly approach.

How Blue Economy will Cooperate with the Role of SLN and SLCG

With that the role of the SLN is to conduct operations at sea for the defence of the nation and its interests and conduct prompt and sustainable combat operations at sea in accordance with the national policies (Navy, 2020). The Department of SLCG stands for the purpose of protecting national interests in all such areas and thereby ensuring national security and protecting the national economy and the national integrity of Sri Lanka which is deeply elaborated in the Coast Guard Act, No. 41 of 2009. The above purposes provide a road map to synchronize the role and tasks of the SLN and SLCG towards economic growth with a sustainable marine ecosystem. Further, SLN and SLCG do not merely

act upon the responsibilities to protect the ocean. but However, it needs to be discussed strategic thinking pertaining to implementing a sustainable blue economy concept based on the following aspects;

a. **Ensure a Safe and Secure Maritime Environment.**   The primary roles of the SLN and SLCG are in cooperating with the implementation of proper maritime security policies. These security mechanisms will be the ground rules for generating a sustainable blue economy to achieve desired the above expectations. Therefore, SLN and SLCG are obliged in the following aspects in order to ensure a safe environment to have a sustainable blue economy in the future;

- Conduct operations to deny trafficking of contrabands, narcotic drugs, arms and detection of illegal activities at sea. SLN and SLCG are required to analyse information,

- Preventing illegal immigrants and emigrants activities with coordination of other local and international stakeholders. Required to establish a strong intelligence network which is enabling timely deny such actions and depletes the effort made by smugglers.

- Conduct Search and Rescue (SAR) operations to assist vessels that report distress at sea. Prior identification of high-risk areas would be providing an advantage to deploying rescue units effectively with managing limited resources. Further, recommend establishing a maritime surveillance unit in cooperation with the resources available in Sri Lanka Air Force.

- Establish a fusion centre for collecting and disseminating information pertaining to Maritime Domain Awareness (MDA), deny threats of sea-borne terrorism as well as Maritime Rescue Coordination (MRC).

- Implement a mechanism for providing on-board security personnel or escort merchant vessels on request which will sail through piracy risk areas.

b. **Renewable Energy.**   Sri Lanka is experiencing a severe energy emergency caused due to the shortage of fossil fuel and it is badly impacting the country's economy. Therefore, innovative and sustainable marine energy may be the best viable solution in order of economic development. With that perspective SLN and SLCG can seek the possibility to develop small projects to harness the renewable energy through the following aspects to reduce at least 25% of daily energy requirements from the main grid;

- Coastal/off shore wind, tide and solar energy generating appliances.

- Acquire or modified small craft which can be operated from

renewable energies.

c. **Fisheries Issues and Exploitation of Marine Resources.**
Illegal poaching/ Illegal, Unreported, and Unregulated (IUU) fishing has become an extensive threat to sustainable fisheries in SL waters. Therefore, SLN and SLCG can deeply focus on marine conservation roles with the coordination and cooperation of the Department of Fisheries and Aquatic Resources (DFAR), Wildlife, National Aquatic Resources Research and Development Agency (NARA), etc. Further, followings can be recommended to implement best management practices for fishery issues (FARD, 1994);

• Fishermen should be properly educated on the issues within the Tactical Areas of Responsibilities and appoint a separate team.

• Create a framework that is legally accepted to address all fishery issues in all maritime boundaries as well as the role of community organizations.

• Required to expand the monitoring capabilities of Sea vision, Vessel Monitoring Systems (VMS), etc. in cooperation with other stakeholders.

d. **Tourism.**   The country has been promoting its reflection as a global destination for tourism, with exceptional marine biodiversity attraction, with some success and that effort can be envisaged with the following aspects with SLN and SLCG;

• Establish Life Saving Points in order to ensure the safety of tourists.

• Ensure scenic beauty of coastal areas by implementing rules and regulations pertaining to waste, plastic and environmental pollution aspects.

• Establish marine animal conservation points, whale watching and other activities with the cooperation of the Wild Life Department and NARA.

• Provide guidance and technical support to local parties who are involving in recreational activities such as scuba diving, water sports and other leisure activities.

e. **Climate Change.**   Oceans are an important carbon sink (Blue carbon) and help balance atmospheric Carbon Dioxide percentage in order to mitigate global climate change (The Blue Carbon initiative, 2019). Therefore, the following activities can be implemented by utilizing SLN and SLCG;

• Need to identify the role SLN and SLCG's role in social responsibility towards the blue economy concept and need to implement some policy decisions to address attainable activities towards the achievement of social responsibilities.

- Natural hazards cannot be predicted and however, required to have risk mitigation and management plan in order to reduce or deny the impact on human as well as coastal marine ecosystems.

- Replantation and establishing mangrove growth in sensitive marine environments. SLN has already implemented actions by planted of over 100,000 mangrove saplings along the lagoon area from Chilaw to Malwathu Oya covering estuaries and banks in last December 2021 (Ministry of Defence, 2021). Further, it is required to continue the effort on the upturn of mangrove density in marine ecosystems around the SL.

- Protect lagoons and coastal areas from unauthorized, illegal and arbitrary land acquisitions and evictions. SLCG should be empowered with sufficient legal aspects in order to produce accuses to the legal examination and make them charged with the offenses which they have committed.

- Natural coral reefs are endowed with a protective barrier to adjacent coastal marine ecosystems and significantly provide more value to the economy by attracting tourism to SL. Therefore, SLN has initiated actions to re-coralisation projects targeting the areas existing with dead coral reefs as well as considering marine environment sensitivities. It is required to continue these kinds of projects with the cooperation of local diving organizations where it can attract and boost tourism activities.

f. **Waste Management.**   Better waste management on land can lead oceans to recover as much as quickly. SLN and SLCG can be utilized as monitoring agencies for the activities related to marine pollution in form of excess nutrients from untreated sewages, agricultural runoff, and marine debris such as plastics, ballasting and oil spills which can be expected in the marine environments. Further, SLN and SLCG can implement the following mechanism to mitigate the relevant issues;

- In order to boom the blue economy concept SLN and SLCG are required to take prompt actions to mitigate marine pollution activities in SL waters. Basically, need to be concerned about shipborne and landborne pollution and implement legal actions in order to obtain immediate effect over the polluters as well as to reduce the pollution. Further, SLCG can organise activities to collect marine debris and waste materials on beaches with the coordination of municipal councils, local and international communities and responsible government officials.

- It can be conducted beach cleaning and awareness programmes with the cooperation of the communities who are in living close proximity. SLN and SLCG should establish sound cooperation with coastal communities and need to identify appropriate approaches

to implement environment protection policies without hampering their financial and economic activities. Need to appoint environment protection officials who can closely work with the other organizations such as Marine Environment Protection Authority (MEPA), Wildlife department and NARA.

• Implementing a mechanism for reducing the use of polythene, plastic or proper mechanism to collect such articles in fishing harbours.

• Improve habitability and the facilities of fishery harbours with the coordination of Ceylon Fishery Harbours Cooperation.

• Man-made disasters such as Oil spills, Chemical leaking and pollution occurring due to ship-borne activities could become huge environmental catastrophes as well as major threats to the sustainable blue economy. Therefore, SLCG already established Oil Spill response management teams and deployed within the major harbours to liaise with local stakeholders such as the Port Authority, Petroleum Cooperation and other domestic organizations. Further, recommended rehearsing oil spill response exercises annually in accordance with the National Oil Spill Contingency Plan (NOSCOP) which is already established in the year 2010 under the preview of MEPA in order to secure the vision of 'A pollution-free marine environment around Sri Lanka for the sustainable national development and the well being of its people and the economy'.

g. **Induce Working Force to Marine Service Sectors.**   With this perspective, the marine service sector could serve as one of the main pillars of its Blue Economy and provide vide diversity of opportunities in marine transportation, shipbuilding and repair, shipping logistics, container facilities, skilled mariners for various technical jobs and other support sectors. Therefore, SLN and SLCG are required to cooperate with domestic and foreign parties who were interested in the above aspects and obtain opportunities to earn much required foreign currency income by 2025. Further, SLN can extend an invitation for civil personnel to attend qualifying courses in marine technical fields such as Marine Engineering, Ship repair/building, and Electrical and Electronic fields where a huge job market is available in the global arena.

h. **Develop Marine Transportation System.**   Inland waterways have been accorded a central role in maritime development in many countries (Mallick, 2020). Considering these facts it is required to introduce a project which aims at developing existing inland waterways, canals and coastal shipping facilities which will be revolutionized the maritime logistics network creating ample new jobs reduce logistics costs. SLN and SLCG can utilize for implement initial steps to introduce the project with existing men and materials. Later, the

government can establish a separate department in order to the proper function of marine transportation sector around and inside the SL.

Conclusion

The sustainable blue economy will provide essential alteration to the existing economic crises on the island which assist in focusing on the source of revenue generation, seeking energy security development with ecological resilience and improving the standard of living and well-being of coastal communities as well bloom the country in globally. This expectation cannot be achieved overnight and SL is yet to implement a feasible blue economy strategy that combines the strength of these efforts. In accordance with that SLN and SLCG are required to address salient issues toward achieving the concept of the sustainable blue economy on par with the role and tasks which have been discussed in the above context. Further, SLN and SLCG should not gaze at its maritime domain as just ocean bodies, further as a comprehensive stage for continued financial, social and cultural dialogue with establishing strong ocean diplomacy which provides a great opportunity to establish a sustainable blue economy in the future.

When considering the role, tasks and functions of SLN and SLCG, which focus on the implementation of a sustainable blue economy could be attainable with the proper analyses of the issues and the requirements pertaining to the facts to ensure a safe and secure maritime environment by dominating SL waters, renewable energy, fisheries issues and exploitation of marine resources, tourism, climate change, waste management, induce working force to marine service sectors and develop marine transportation system in SL. This perspective is required to understand the necessity of paradigm-shifting from a Brown Economy (Land-based) to a Blue Economy (Ocean based) which would reinforce and strengthen the efforts of the SL government as it serves to achieve the United Nations Sustainable Development Goals of Hunger and Poverty Eradication along with sustainable use of marine resources in the future. With that there is a possibility of Blue economy developments can be initiated by SLN and SLCG with the cooperation of other stakeholders of Sri Lanka.

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"ESPRIT DE CORPS IS A FORCE MULTIPLIER" CHALLENGES IN SRI LANKA NAVY

Lieutenant Commander Dhanushka Lakshan

Introduction

Esprit de corps in its literary sense1 is defined as the "spirit of the body" and as defined in the Oxford dictionary is a feeling of pride and mutual loyalty shared by the members of a group. The Merriam Webster dictionary provides its definition for esprit de corps as the common spirit existing in the members of a group and inspiring enthusiasm, devotion, and strong regard for the honour of the group. In essence, when the core definitions are summarized and interpreted in the purview of the military, the following interpretation can be built up to describe what esprit de corps means for the military.

"Esprit de corps is to promote team spirit, unity and harmony to bring cooperation and coordination".

Factors that build up Esprit de Corps

In any organization where there is a high sense of Esprit de Corps, the employees can be found to possess a high degree of loyalty towards the organization and work with dedication not with the mind-set of personal benefit but towards achieving the organizational goals. In essence, a company that espiers to inculcate esprit de corps work towards replacing "I" with "We". However, in the military setup where, there is a chain of command and personnel are trained to achieve the intention of the command, it is difficult to inculcate an environment where personnel are given equal liberties. Instead, building Esprit de Corps in the military is bound exclusively towards building morale at various team levels. The military maintains a clear set of rules bound by the high degree of military discipline which are expected from each individual to abide by at any instance. Therefore, building up Esprit de Corps within the military can be summed up into focusing on the development of three key factors (Burrow, 2020);

- Trust
- Confidence
- Shared Understanding

Trust

.   Building trust in a military setup has to be done focusing on three levels namely,

- Trust on each other.

- Trust on leadership.

- Trust on decisions made by the leadership

Trust does not necessarily rely on results and it is based on good faith and reliability. Trust on each other in the military setup is brought upon mostly by training together, engaging in activities and solving problems together. Once a unit of military personnel is stationed in an encampment, they are to fend each other. The companionship alone is a great motivator to build up trust towards each other and additional activities that promote team work such as team sports also assist in creating comradeship which transforms into building up trust among one another within a unit.

Even there is a high degree of trust among one another in a unit, there will be difficulties in building up Esprit de Corps, if there is no trust on the leadership. Leadership in the military set up gives confidence and helps to create a sense of direction for a unit. Hence, if the guidance/leadership fails to provide the necessary inspiration and motivation at the correct time, the trust factor within a unit fails to build up. When there is mistrust towards the leadership, there is a tendency towards generating doubt and uncertainty. Hence, there will be no trust in the decisions that the leadership makes, paving the way for disorder and chaos. Therefore, in building Esprit de Corps, trust in each other, trust in leadership and the trust in the decisions the leadership makes must attain a perfect balance.

Confidence

Though confidence goes hand in hand with the factor of trust, building up confidence relies on results where repeated success builds confidence and failure provides a window into critical evaluation which can also be turned towards building confidence. Confidence is also another key element, when it comes to build up Esprit de Corps within a military. Confidence as similar to trust can also be examined at three distinguished levels namely,

- Confidence on each other.

- Confidence on leadership.

- Confidence on the decisions taken by the leadership.

Confidence on each other is a factor that can develop with experience and work exposure. In an event, where a lack of confidence is observed, there is always the possibility of providing training. Therefore, building confidence on each other is an achievable objective. However, confidence in leadership is not that easy to build up as confidence which is based more on past performance and achieving results, it is challenging for a leader to build confidence on the person's leadership.

With practice and with constant learning however, the   decision making ability of a leader can be brought to a higher level where his/her rate of success and performance attains greater levels thus building up confidence. When a unit is confident on the leadership, it automatically reflects onto having confidence on the decisions taken by that leadership where a unit is compelled willingly to achieve any goal or objective set by the leadership. Thus, building confidence at the three levels as described is essential in building up Esprit de Corps.

Shared Understanding

The final factor which plays a key role on building up Esprit de Corps is about making all personnel that belong to the organization have a shared understanding on why things the organization does is important both to the individual and to the organization. This factor is essential in creating a sense of belongingness where an individual feels that he/she has a higher purpose both in his life and towards his organization. In the military purview, it is important that   an individual who is bound by discipline and military law have an understanding on why such rules exist and why that individual must abide by the rules and regulations that essentially restrict his/her sense of liberty. Further it is paramount that all personnel in a military organization be aware of the duty and the responsibility of the organization and the importance the duty and the responsibility of the military organization plays in a grand scale. The factor of communication among individuals and the leadership plays an important role in creating the   shared understanding among individuals and inculcation of an environment where there is shared understanding about what the organization and its members are stand for. Hence, it is paramount in building up esprit de corps.

When the above mentioned three key factors are developed in a military organization the culmination will result in the development of Esprit de Corps. The observations will reflect in many ways such as in the uplifting of the overall morale among individuals that result in personnel, putting their highest effort in carrying out tasks, respective duties and responsibilities. Since, personnel are of a shared understanding of what they and the organization stands for, it can be observed that personnel would not like to fail or disappoint their peers, their leadership and the decisions taken by the leadership. Therefore, each person will work in a sense of achievement that may be utilized to propel the whole organization to achieve higher standards in their overall achievements. Hence, building Esprit de Corps will become a force multiplier, since higher standards of individual commitment culminates into higher organizational standards.

Challenges of the Sri Lanka Navy are Confronted in Building Esprit de Corps

Esprit de Corps is an important factor that can to be built up by focusing on three basic factors that has been extensively discussed above. With the current socioeconomic dilemma Sri Lanka is battered heavily at the moment the

text is being compiled, a few challenges the Sri Lanka Navy is confronted with that has a grave impact on the Esprit de Corps of the organization. It can be highlighted which the writer has been brought into attention based on interviews, discussions and personal observations of naval personnel. The challenges that Sri Lanka Navy is faced with that contribute in the depletion of Esprit de Corps is as follows;

- Diminishing trust and confidence among individuals and the organization.

- Lack of knowledge on the shared understanding about the organization.

- Targeted attack on reputation of the military including the Sri Lanka Navy on media platforms.

- Feeling of being constrained.

- Reluctance to self-delegate.

Diminishing Trust and Confidence among Individuals and the Organization

It is a known fact that most personnel, who are recruited to the Sri Lanka Navy post war, have joined not just for patriotism, yet as a means to an end of finding economic stability in their personal lives. However, with the ongoing economic crisis, it has become ever so difficult to manage their personal economies which have contributed in creating doubt and uncertainty. Thus, the doubt and uncertainty have paved the way for naval personnel to lose trust on each other and towards their career in the Navy. Most naval personnel who have been interviewed by the author are at a state in their life where they feel that their career in the navy alone and is not merely enough to find solutions to their personal   economic dilemmas. Though the writer has constantly highlighted, how navy has endured much and has taken steps to focus on welfare with utmost difficulty, there is no stopping of naval personnel comparing their naval life style prior to the economic turmoil and highlighting how thing were prior. Since economic security is a factor that all people in a society regard as the highest in their priorities, it has become extremely a challenge to guide naval personnel through the rough seas of economy that the country is at this crucial moment.

Lack of knowledge on the Shared Understanding about the Organization

It is evident during the interviews that most interviewees are not having a clear understanding as to what the Sri Lanka Navy stands for. It was mostly evident to the writer during the very recent civil unrest 'Aragalaya', that most naval personnel were in a state of confusion as to where they should take the stand. The lack of a clear picture in personnel enrolled in the Sri Lanka Navy as to the core values and principles of the Sri Lanka Navy and the purpose of their service

to the organization has left most naval personnel (especially naval personnel with less service experience) in a state of confusion and unclear direction in their career choice. This dilemma combined with few other challenges which will be discussed further, has been significantly contributing towards building hindrance against Esprit de Corps within the Si Lanka Navy.

Targeted Attack on Reputation of the Military including the Sri Lanka Navy on Media Platforms

It is a known fact that all humans are social creatures and the lack of social belongingness affects all human beings and brings about mental stress and depression. The military including the Sri Lanka Navy has been under constant scrutiny and has become a key target of social pressure with the induction of military personnel into civil administration ranging from coordinating quarantine centres during the Covid-19 to protecting personnel deemed as VIPs for regulating services at fuel filling stations. Though most efforts of the military have garnered praise and recognition from higher levels of government administration, there is a high level of social backlash, criticism and ridicule from the society which is mostly spread through social media networks which have garnered a high degree of recognition within the social construct of the present world. Though the spread of misinformation and misinterpretation of incidents is rampant within social media, the society of today is highly gullible and takes it as the latest trend. Hence, naval personnel being social creatures as well are constantly faced with social pressures put upon by social media which create doubt about their service to the Navy and severely damage the confidence of naval personnel. Addressing the constant ridicule and misinterpretation at the rate of them being spread and being established as fact in the society is challenging as there will be another damaging trend on the way just as one trend is being fact checked.

Feeling of being Constrained

It is both challenging and as well as appreciative, how naval personnel maintain their work and life at balance without letting their families feel the burden of having to fulfill their day to day needs without the aid of their key family member who are away from home most of the time in their career. However, the recent plunge of the economy and the breakdown of the social structure have given rise to stressful queue systems and waiting lists where it has become increasingly difficult for a family to obtain their bare necessities without the aid of key figures in their family who are mostly away from home. This constant pressure from the naval families and the increasing deployment of naval personnel in additional security commitments as per the need of the country which severely hinder with the free time the naval personnel usually engage with their family matters has made naval personnel doubtful about their ability to care for their family needs. The feeling of being burdened with family

matters that were born out   of economic turmoil and the constriction of free time followed by repetitive security commitments has made naval personnel feel constrained. The feeling of being burdened and limited by duties and responsibilities make a person be naturally uncommitted and hence Esprit de Corps becomes unattainable.

Reluctance to Self-Delegate

In many discussions in various forums within the Sri Lanka Navy, the writer has observed that the reluctance of naval personnel to self-delegate comes out as a common topic for discussion. Further, through observations of the writer made in various deployments, it is apparent that there exists a reluctance of most naval personnel to undertake tasks on their self- directive. Even, if the task is of a minute form varying from mopping up a mud stain on a tile floor to coordinating a task in an event even if what is to be done is known by the individual, most naval personnel are in a mind-set where unless a specific directive and supervision is given by the leadership, there is a reluctance to undertake a responsibility. The problem as the writer observes is with regards to inadequacies of confidence building and understanding individual capabilities and personality traits. Therefore, leadership of each unit has to make efforts to identify personal capabilities and work on individual empowerment by means of constant teaching and training to build confidence of an individual to a level where one is made confident to take up responsibilities within the individual's work limitations. The lack of confidence leads for reluctance to self-delegate leads to an overall decline in Esprit de Corps which relies on what an individual contributes to an organization.

Conclusion

In a military organization such as the Sri Lanka Navy, building Esprit de Corps is key in ensuring the organization achieves higher standards and strives above and beyond what is typically expected. Hence, individual commitment and the individuals need to put in their maximum effort for any given task without the supervision is a must that has to be improved upon. In doing so, identifying key issues that are not superficial in nature is a must and having knowledge on building up the personality of individuals on the principles and the vision of the organization are necessary to create an environment where morale in the work place is kept at the highest. The need of an individual to strive higher and the passion to not disappoint the organization in essence becomes a force multiplier at a collective level. In conclusion, a common phrase in management can be quoted to summarise what any person expects in work life and striving to create esprit de corps though difficult hence is of great importance.

"Everybody wants to be in the winning team, everybody wants to have fun at work every day"