Section F

Sri Lanka's Future: Towards a Blue Economy

Wasantha Rathnayake
Sabaragamuwa University of Sri Lanka
Email: warath1@gmail.com

Background

As a small island developing country, the ocean has had a strong influence on the culture, beliefs, and values of the people of Sri Lanka. The strategic location of the country, on the margins of the east-west naval route, has also made it the home of immigrants of different cultures and religions and attracted the attention of world superpowers as an avenue for expanding their jurisdiction over the marine space. Amidst all these influences lie colossal amounts of oceanic resources offering bounteous opportunities for strengthening the country's economy and improving the wellbeing of the people. As "small island developing nations" (SIDs) are now confronted with a grave resource crisis due to their small resource base, they are increasingly shifting their focus from green to blue economic growth.

The ongoing economic crisis in Sri Lanka is one of the worst crises that the world has witnessed in recent times. Sri Lanka's real Gross Domestic Production (GDP) is expected to fall by 9.2 percent in 2022 and a further 4.2 percent in 2023. In July 2022, inflation in the country hit a record high of 54.6 per cent while food inflation rose to 80.1 per cent. Sri Lanka's GDP is expected to contract by -8.8% in 2022 and the unemployment ratio by more than 5.5%.

Our Resources and Potential

Sri Lanka has 1,620 kilometers of coastline and has territorial waters of 21,500 km^2. It has an exclusive economic zone of 517,000 km^2, which is almost eight times the country's land area (Figure 1). This coastal and marine environment harbours a variety of natural resources and

ecosystems, such as coral reefs, seagrass beds, mangrove forests, lagoons, beaches, salt marshes, and estuaries. The literacy rate of Sri Lanka for 2020 was reported at 92.38%.

The future prosperity of Sri Lanka depends on how well we control our geographical location as a sea hub and utilize the marine resources effectively in the surrounding sea. Our location in the Indian Ocean has shaped our history over a long period of time and will continue to do so in the future. New consumer markets are emerging all across Asia and the major economies of China, Japan and India contribute to the growth of maritime activities in the busy **east-west shipping route,** which is only a few nautical miles south of the island. On this route, more than 150,000 ships annually carry two-thirds of the world's oil supply and a half of the total ocean freight. Furthermore, Sri Lanka has the jurisdiction for its seabed resources up to 200 nautical miles and we have claimed beyond 200 nautical miles under the United Nations Convention of the Law of Sea since geographic conditions support our river sediments reaching far beyond.

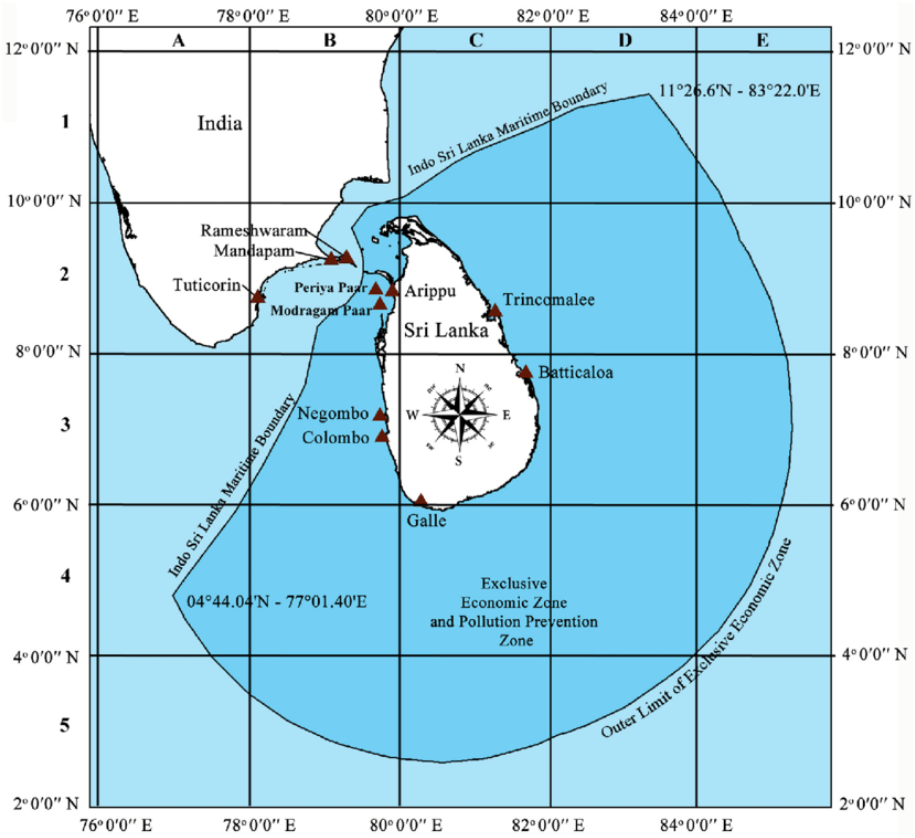

Figure 1. Map of the Sri Lankan Exclusive Economic Zone (Source: Maritime Boundaries Geodata Base, Flanders Marine Institute)

Blue Economy Concept

Blue Economy is a fairly new concept, having been first spoken of in 2012 and developed thereafter (from 2014 onwards) with its inclusion in the Sustainable Development Goals. Goal 14 of the Sustainable Development Goals expresses the 'Blue Economy' concept while Agenda 2030 identifies the importance of 'life under water'. Rio+20 marks the first instance where the phenomenon of 'Blue Economy' was raised in an international platform. The ideology behind the concept is that oceans, being the common heritage of the human kind, represent the man's quest for sustainable development.

"Blue Economy" serves as an umbrella term for a number of economic activities that promote inclusive growth and environmental sustainability, such as ocean-based renewable energy, fisheries, aquaculture, mariculture, maritime transport, tourism, and waste management. UNESCO defines Blue Economy as "the decoupling of socioeconomic development through oceans-related sectors and activities from environmental and ecosystems degradation". Apart from traditional oceanic activities such as shipping and tourism, blue growth also entails off-the-coast energy generation, marine aquaculture, sub-marine mining, biotechnology, bioprospecting, marine tourism, etc. Also included are services such as carbon sequestration, coastal protection, and biodiversity, which are not yet captured by the market.

World's Outlook

As the UN Secretary-General said in his letter to Heads of States and Government when inviting them to participate in the 2022 UN Ocean Conference, the ocean is home to up to 80 per cent of all life in the world. It contributes to the social and economic well-being of people by playing a significant role in poverty eradication, shipping and trade, climate resilience, food security, job creation, and the sustainable Blue Economy. For instance, the ocean food sector provides up to 237 million jobs globally and provides key nutrients and protein to over 3 billion people. In fact, food from the sea is the primary source of protein to over 50 per cent of the population in the least developed countries. Coastal and marine ecosystems contribute up to 11.5 billion USD to global tourism, while also protecting our coasts from storms and floods, providing habitat for biodiversity, carbon storage, and detoxification. In terms of the global economy, around 90 per cent of all internationally traded goods are shipped by sea, and the market value of marine and coastal resources and industries is estimated at USD 3 trillion per year or about 5 per cent of the global gross domestic product. Sustainable use of

ocean, seas and marine resources, as set out in SDG 14, lies at the center of a sustainable Blue Economy, though common principles are yet to be determined.

The seabed provides for 32% of the global supply of hydrocarbons and contributes to the global tourism industry. Developing sustainable coastal tourism is beneficial to the Blue Economy. In 2015, coastal tourism is 8.5% of the world tourism industry. However, only 5-7% of the ocean has been explored to date; thus, the potential for expansion and development is vast. Advancing technologies are opening up opportunities for activities ranging from bio-prospecting of the oceans to mining of seabed mineral resources and for extracting oil and other bio gases as well as renewable 'blue energy' sources like wind, tidal, thermal and biomass.

The Blue Economy, also known as the sustainable ocean-based economy, comprises a range of economic sectors and related policies that aim at fostering economic and social progress while maintaining the health of our oceans and coasts.

Where We Stand

People in Sri Lanka get about 50 percent of their animal protein from fish, which is about three times the global average. Although, according to the Food and Agriculture Organization (FAO), nearly 50% of the seafood consumed worldwide comes from aquaculture, over 90% of Sri Lanka's seafood is still caught wild. The fishery sector's contribution to the GDP is 1.3% (Marine sector = 1.1%). Coastal and marine fisheries provide full- or part-time, direct or indirect, employment to some almost 1 million people in Sri Lanka and support the livelihoods of another 3.6 million Sri Lankans. Table 1 shows the fish, dried fish, and canned fish production and the country's requirements. As shown in it, though Sri Lanka is an island, we still import part of our fish requirement from other countries spending scarce foreign exchange.

As mentioned earlier, the 'Blue Economy' concept covers a wide range of activities which can be identified by their geographical locations and sectors and specializations. The potential of the Blue Economy ranges from fisheries and aquaculture to renewable ocean energy to marine biotechnology to tourism and coastal management. The taxonomy of the Blue Economy and observations on each sector are given in Table 2.

Table 1: Fish production in Sri Lanka

	Requirement	Production	Remarks
Fish production		331,675 metric tons (Marine) and 104,235 Metric tons (inland)	Price variations – Sri Lanka imported USD 218 million worth of fish.
Canned fish	275,00 tins per day	220,000 per day	Importing from other countries
Dried fish	90,000 Mt annually	55.000 Metric tons	Importing from other countries

As Table 2 shows, there is great potential in the area but lack of knowledge, skills, and fund limitations are key factors affecting engagement in the Blue Economy sectors in Sri Lanka. Meanwhile, religious beliefs, cultural practices, and attitudes of the people involved in fisheries and marine-related sectors also affect development in these sectors.

Table 2: Taxonomy of Blue Economy Sectors and Activities

Sr. No.	Sector	Activities	Remarks
1	Fishing	Capture fishery, aquaculture, sea food processing	- Fish price is high - Quantity is not sufficient and import dry fishes and processed sea food from other countries - Mostly traditional knowledge is applied - Modern Technology is not used at a satisfactory level - Cultural and religious barriers There is a huge potential for 'Mariculture', 'Sea weed Culture' and 'Sea cucumber culture' -Lack of skills -Lack of knowledge -Lack of funds for research -Lack of funds for purchasing machinery and equipment

2	Marine Biotechnology	Pharmaceuticals, chemicals, sea weed harvesting, seafood products, marine derived products	Much less developed sector in Sri Lanka -Lack of skills -Lack of knowledge -lack of funds for research -Lack of funds for purchasing machinery and equipment
3	Minerals	Oil and gas, deep sea mining, exploration of the rare earth metals and hydrocarbons	-Resources are available - Untouched sector in Sri Lanka due to -Lack of skills -Lack of knowledge -lack of funds for research -Lack of funds for purchasing machinery and equipment
4	Marine Renewable Energy	Off-shore wind energy production, wave energy production, tidal energy production	Off-shore wind energy production is found to be not at a satisfactory level. Other activities are not done due to -Lack of skills -Lack of knowledge -Lack of funds for research -Lack of funds for purchasing machinery and equipment
5	Marine Manufacturing	Boat manufacturing, sail making, net manufacturing, boat and ship repair, marine instrumentation, aquaculture technology, water construction, marine industrial engineering	Activities are going on but at unsatisfactory level due to -Lack of skills -Lack of knowledge -Lack of funds for research -Lack of funds for purchasing machinery and equipment -Government policy decisions, experts are hired
6	Shipping, Port and Maritime Logistics	Ship building and repairing, ship owners and operations, shipping agents and brokers, ship management, liner and port agents, port companies, ship suppliers, container shipping services, stevedores, call-on, roll off operations, custom clearance, freight forwarders safety and training	Except ship building other activities are going on at a moderately satisfactory level. The government's rules and regulations are not user friendly and practical. Developed ports are not utilized properly.
7	Marine Tourism and Leisure	Sea angling from boats, sea angling from the shore, sailing at sea, boating at sea, water skiing, jet skiing, surfing, sail boarding, sea kayaking, scuba diving, swimming in the sea, bird watching in coastal areas, whale/dolphin watching, visiting	Overall, a lot of activities are going on. This sector can be easily developed. -Lack of skills -Lack of Knowledge -Lack of funds for purchasing machinery and equipment

		coastal natural reserves, trips to the beach, seaside and islands	
8	Marine Construction	Marine construction and engineering	Much less developed sector - Lack of skilled human resources - Government policies and procedures
9	Marine Commerce	Marine financial services, marine legal services, marine insurances, ship finances and related services, charterers, media and publishing	In adequate knowledgeable human resources. This sector can be easily developed
10	Marine ICT	Marine engineering consultancy, meteorological consultancy, environmental consultancy, hydro-survey consultancy, project management consultancy, ICT solutions, geo-informatics services, yacht design, submarine telecom	-Inadequate human resources -Lack of skills -Lack of Knowledge
11	Education and Research	Education and training, R & D	-Inadequate trainers and experts -Lack of skilled staff -Lack of funds for research

Way Forward: Facing the Challenges

a) Need of a policy direction

In order to meet the objectives of Goal 14 of the sustainable development goals (the SDGs) for the 2030 agenda, Sri Lanka must adopt measures that are efficient, sustainable, and suitable. For an effective plan for the purpose of acting, there must first be a national maritime policy. Lack of a national policy and therefore a national strategy to deal with the ocean can lead to inefficiency and unaccountability on the part of the authorities paving the way for misapprehensions of the process. When adopting a national Blue Economy policy, Sri Lanka can learn from Mauritius and Seychelles who have successfully adopted the Blue Economy as “small island developing states” (SIDS) in the region. Though Sri Lanka does not come within the ambit of SIDS, lessons can be learnt from their practices on the fishing industry and tourism.

While focusing on a policy and national strategy on blue economy, it is also necessary that the existing oceanic activities are revised and accustomed to incorporate sustainable, efficient measures. As one of the busiest ports in the region, Colombo can recommend Triple E class

(economy of scale, energy efficient and environmentally friendly) vessels to come into operation. More than 2/3rd of the global seaborne trade is routed through the Indian Ocean and Sri Lanka's geostrategic location gives immense potential for port and shipping services. By imposing more systematic, target-oriented and futuristic policies and regulations, the services can be enriched.

It is also believed that under an appropriate policy direction, people's engagement in the fisheries and marine sector can be enhanced and the 'Blue Economy' sector can be further developed.

b) Human resources development

Table 2 shows that we have not efficiently and effectively utilized our geographical location as well as the natural resources in our ocean for the future development of the country. We, as a nation, need to reposition our country to maximize these advantages. To fully tap this potential, Sri Lanka needs to develop its human resources and, hence, the relevant higher educational or vocational institutions in the country must equip themselves to cater to this important task. Among the key factors impeding the 'Blue Economy' development in Sri Lanka are lack of skills, knowledge, inadequate fund allocations, and inadequate policy directions.

With the type of training offered, I am sure the Ocean University will produce graduates and mid-level managers who are accomplished and competent to take up employment in the newly emerging sectors and to address the diverse oceanic issues such as resource degradation, unsustainable fishing practices, pollution, and adverse impacts on other sectors, such as the displacement of small-scale fisheries while working towards securing a sustainable ocean ecosystem.

c) Use of modern and advanced technology

This necessitates training the youth of this country to take up new challenges that emerge from this growth process, a function that the Ocean University of Sri Lanka has covenanted to perform. Focusing on key areas such as fisheries and marine sciences, and marine engineering and management, the Ocean University has undertaken to train the future decision makers and managers, offering ample learning and training opportunities through the undergraduate and post-graduate degree programmes, and vocational training offered by its training centers spread out right across the country.

d) Tourism development

The flora and fauna of the Indian Ocean provide the biggest opportunities for tourist investment in the region but it is necessary that all activities are monitored to ensure optimization. Coastal tourism accounts for 70% of the total tourism infrastructure in the country. While coastal tourism can be expanded to new heights, there must be regulations in place to manage the activities and control the quality of the services. It must always be borne in mind that the activities should not disturb the development of the natural marine-cycle or break apart the habitat. Coastal management should be a major component of the Sri Lankan blue economic policy.

Developing sustainable coastal tourism is beneficial in the Blue Economy. In 2015, 8.5% of the world tourism industry amounting to US$ 670 billion was from the India Ocean Rim Association (IORA) region. Water-based tourism and leisure-based activities which foster smart, sustainable and inclusive growth should therefore be implemented. Sri Lanka currently has a wide array of leisure and pleasure activities based on coastal areas but the endurance of the same is questionable. For example, whale watching in the Northwestern and Southern provinces of the country has gained much popularity over the recent years.

e) Renewable energy

According to the International Energy Agency, the global primary energy demand would increase by 40% by 2030 and Asia and Middle East are predicted to be major contributors (IEA, 2015). In Sri Lanka, wave, solar, wind, and hydroelectric energy can all be generated with the available resources in the country. What we need is proper research, development, and implementation. Experiencing two monsoons throughout the year, Sri Lanka has great potential for tidal and wave energy along the southwest and northwest coasts.

f) Research and development

While improving the existing measures and adopting new sustainable measures, the country must also invest in research and development. Since Blue Economy is a new concept, research in the area is very much needed. In order to introduce marine biotechnology or marine technology, the technological know-how must first be brought into the country.

g) Regional corporation

It is necessary that in order to move ahead with sustainable oceanic activity, there must be effective regional cooperation since the goal is to prevent a tragedy of the commons. It is therefore vital that challenges and issues are identified and addressed. Sri Lanka's ongoing conflict with India over the International Maritime Boundary Line in the Palk Bay and Gulf of Mannar prevents the two countries from identifying the common goals of the Blue Economy. The unhealthy practice of bottom trawling by the Indian fishermen causes severe harm to the marine eco-system.

i) Climate change

The excessive release of greenhouse gases and the increase in surface temperature are leading to the melting of the glaciers, thereby raising the sea level. Along with the rising sea levels, changes in surface sea temperature would directly affect salinity, ocean acidification, thermal stress, and the aquatic cycles. These changes will affect the fisheries distribution and migration leading to a break in the marine eco-cycle. These natural phenomena along with overexploitation and pollution are a cause for concern for the fisheries industry. Rising sea levels would eventually lead to a depletion of the coastal area of the land, thereby affecting more than 25% of Sri Lanka's population. With an annual population growth rate of 0.9%, the pressure on the land-based resources is increasing exponentially and the strain will only intensify with the reduction in land area due to rising sea levels. This can only pose issues for the coastal community as they will be bereft of social, economic, and food security. If solutions are not found for these issues and they are allowed to continue for a prolonged period of time, there is bound to be an alarmingly real risk of the coastal community being hurled into illegal oceanic activities like piracy and trafficking.

Although a member of the IORA, Sri Lanka has not taken any initiative at the national level to address the global challenge of climate change. As 25% of the country's population depends on the coastal economy, Sri Lanka must ideally take effective policy measures and initiatives to uphold the Blue Economy. The advantageous location and circumstances of the country must be used tactfully to economically enhance the country. However, lack of interest, knowledge, awareness, and differing priorities have so far prevented successive governments or as well as the various authorities in charge from taking any initiative in this direction. With Sri Lanka's marine territory and the willing and able coastal population, the nation must take steps to combat global warming and climate change at the initial stages, which is right now, rather than looking for fixer-uppers after tragedy strikes.

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