

BLUE ECONOMY AND SRI LANKA - AN OVERVIEW FOR PROSPECTS ON DEVELOPMENT

1.0 Introduction

This paper aims at sketching a roadmap for a sustained and ambitious urge from the Sri Lankan government perspective towards reaping the benefits presented through the marine resources surrounding the island. Hence, the author is of the view that embracing the 'Blue Economy' concept via policy making in respective fields is key towards such an endeavor. Moreover, it is emphasized paramount at incorporating a holistic approach towards such initiatives involving all stakeholders local and foreign.

As an island nation, with more than 530,684 square kilometers of territorial water and its exclusive economic zone and 1785 kilometer-long coastline, Sri Lanka has planned to become a strong promoter/believer of the blue economy concept. The 1785 km-long shoreline comprises a vast area of marine habitat - sandy beaches, extensive lagoons, mangroves and coastal marshes. Over 50% of the population resides in the coastal areas of the country.

70% of the world we live in is surrounded by sea and the land area is only about 30%. "Green Economy" adopted by the modern world has gained momentum over the years. Apart from that, the countries with sea resources are implementing a large scale scheme named "Blue Economy". This will not at all override the concept of Green Economy. The word "Blue" is new to the arena of economy, but nothing other than the colour of the Ocean packed with enormous recourses, just as same as the formation of the blue colour by collection of various shades of colours.

Many countries are working hard to harvest such resources. Sri Lanka is surrounded by sea and the blue high sea which is 8 times larger than the land is a worthy treasure to our country. However we have to reconsider how much this great resource with high production capacity has been optimized to the economical development of the country. Therefore, I am attempting to introduce the scheme of "Blue Economy" for the first time in Sri Lanka.

1.1 Objectives of the Endeavour

1.1.1 Core Objective

To investigate a large number of sea resources practically important to Sri Lanka apart from the resources mentioned above.

1.1.2 Secondary Objective

Even though such resources do not directly connect with the scope of the Ministry, I believe that following resources are important in the process of adopting Blue Economy and his effort to present this to the national attention is appreciable.

- i. Oil and Gas
- ii. Renewable energy
- iii. Sand and gravel
- iv. Minerals
- v. Co₂ Capture and storage
- vi. Waste disposal, absorption and detoxification

2.0 Prospects and Challenges

Blue is enriched with numerous colour shades and similarly the blue water is also enriched with immeasurable and unidentified sea resources. Considering the scope of duties vested to the Ministry of Fisheries and Aquatic Resources Development, sea resources can be categorized as follows:

1. Fisheries & Nutrient cycling
2. Marine Tourism
3. Sea Transportation
4. Ocean Energy
5. Co₂ Capture and storage
6. Waste management

2.2. Fisheries & Nutrient cycling

Fisheries in the island can be broadly divided into four categories; coastal or inshore fisheries, offshore or deep-sea fisheries, inland fisheries and coastal aquaculture. Fisheries on the shelf are supported by a wide range of coastal pelagic and demersal species, typical of tropical multi-species fisheries. Both developed countries and developing countries today are facing many challenges in the management of fisheries resources.

There are many international organizations engage in fisheries management and they express the idea that many countries do not show satisfying enthusiasm or attitudes in this regard. As a result, UN had imposed bans against Sri Lanka and we are proud to mention that with the dedication of His Excellency President, Hon. Prime Minister, Hon. Minister of External Affairs, Ministers of Fisheries of the government of good governance and my officers in the Fisheries ministry and Department, we were able to lift those bans through hard work and conforming adherence to the expected standards.

There is a great necessity to introduce laws and methods to prevent illegal fishing where world fish resource is at a risk of extinction.

Therefore according to the duties, the Minister delegated to me, a review is to be conducted on the fishing methods adopted in developed countries. I have decided to directly engage fishery community in this task along with NARA and other governmental institutes.

2.2.1 Multiday Vessels

All the multiday fishing vessels are needed to be upgraded and, I intend to use high technological equipment and also to improve prevailing techniques.

New equipment with high technology which ensures the life safety of fishermen needs to be introduced for the multiday fishing vessels. I am already started to introduce EPIRB devices for multiday fishing vessels.

Therefore winches, Life Rafts, EPIRB, Fish Finders, and Fish Sonars need to be introduced to multiday fishing vessels along with telephone facilities and at the same time introducing a VMS system for small vessels have been identified as the important aspects to be implemented earliest



2.2.2 Life Rafts

Many accidents encountered by those who are mostly engage in fishing at deep sea in multiday fishing vessels have been increasingly reported. The most recent incident occurred off Galle causing death of 5 fishermen of Galle due collision against a merchant ship. Wearing life safety jackets only won't help because it is difficult to do fishing wearing life jackets. These lives could have been saved if life rafts were available Therefore life rafts should be located for all the multiday fishing vessels in Sri Lanka.

These life rafts are made from Polyurethane coated and Neoprene Rubber and these materials are so strong that they can face emergency at sea. It can be fitted to any place and it needs only small space. No technical knowledge is needed to operate it and any fisherman can easily operate it. These rafts contain medical facilities and food. It can give accident signals by the parachutes spread to sky and it can seek help from nearby vessels in an emergency.

Its occupants can exist safely in any bad weather condition due to its special cover. A raft can be used for 07, 14, 21 days. Its main feature is that it can operate automatically upon the water pressure where a vessel is sunk in an accident.



2.2.3 Multipurpose Fishery Harbour complex concept

Maximum fish harvesting by existing multiday vessels in future can be challenging due to the international operation of quota system. Therefore discussions are ongoing with Korean Fishery Federation seeking sponsorship for the programme of delivering large scale vessels introduced by myself to fishing unions.

Also local business community will be encouraged to buy these large vessels. I have taken measures to direct youth for Korean fisheries employment after having them trained in the fisheries technical colleges proposed to be established in Tangalle and Jaffna which will be operated under the sponsorship of National Federation of Fisheries Cooperatives of Korea.

Also construction of Multipurpose Fishery complexes of 5m depth to launch the large scale vessels is another concept of Blue Economy programme. Accordingly, following harbours will be developed with the support of the Government of Korea.

- I. Udappuwa Fishery Harbour
- II. Chalei Fishery Harbour
- III. Delft Fishery Harbour
- IV. Madagal Fishery Harbour

These harbours will include moor facilities for large vessels, yachts and small merchant ships and launching for sea planes, restaurants, small hotel complexes, housing and community centers.

2.2.4 Locker cold rooms

Fishers in North and East have to sell their harvest at very low price due to lack of safe stores thus forcing many of them giving up the industry. As a solution 'locker cold rooms' will be introduced which will allow 20-30 fishers to preserve their harvest longtime and sell them.

Blast freezing facilities in these cold rooms will provide qualitative fish to the public and this will be implemented parallel to the HE President's vision of food security. National Planning Unit has already submitted it and feasibility reports are being done by anchorage development project.



2.2.5 Community Based Management

I firmly believe that, management of all these projects has to be done with the participation of the fisher community and a community based management method has been introduced to anchorage and Locker cold rooms management.

Many anchorages are operated under the Ministry and many other are proposed under the fishery harbours and anchorage development project. These resources are not optimized due to the lack of proper management. The existing methods need to be changed for the proposed anchorages.

Experience of the fishery community will be directly utilized to the development of the fisheries. Using excess workers of CFHC to the community based management unit is the main objective. Fisheries activities in certain fisheries harbours have encountered several issues.

Neglecting the experience of fishermen over environmental factors in establishment of harbours has made some of them unsuccessful. This objective needs to be achieved by encouraging small scale fishermen and uplifting their life status through government contribution and creating a collective method to increase the contribution share of the fisheries industry to the national income.

Indian fishing vessels do a great calamity in Northern sea of Sri Lanka. In 2014 India has exported shrimp to USA worthy of 1274 millions USD and became NO: 1 exporter to USA. But our total fish exports comes around 350 million USD. We need to increase this and I have identified this issue and in a way of finding a solution which is important for Blue Economy programme.

2.2.5 Ornamental Fish

Promotion of ornamental fish via NAQDA and organization of the exhibition “Min Wisithuru” held so far targeting local businessmen. International participation received to this event was exiguous.

Annual income of ornamental fish exportation is nearly 3 million USD. I firmly believe that by increasing this industry, new job opportunities can be created. Identification of issues of businessmen engaged in fresh water fishing and marine ornamental fish, promotion and exportation, making laws if necessary and conducting “Min Visithuru’ successfully in international level are anticipated by myself.



3.0 Exploration of Ocean Resources

3.1 National Marine Force

I intend establish a national marine force in line with Blue Economy programme covering fishing unions, schools, institutes, beach hotels and religious paces of 14 coastal districts. All the districts except Matale, Kandy, Kegalle, Nuwara - Eliya are included to this.

The proposed National Marine Force has been specifically created targeting the fishery community and the possible benefits they are going to gain through this project would be drastically increased if all the institutes associated with coastal areas offer their contribution to this national mission. It has also been planned to launch a network under this National Marine Force to take necessary measures in providing technical, labour and equipment support in national disasters. Further, it is planned to design a network which would provide important information regarding the marine pollution, human trafficking , illegal fishing, use of illegal fishing gears and transportation of unauthorized drugs.....etc.

Accordingly to succeed this task, a strong relationship should be created and maintained with the Ministry of Defence, Ministry of Environment, Ministry of Disaster Management, Ministry of Ports and Shipping, Ministry of Petroleum Resources Development and all other related ministries. Certain reliefs will be provided by the government and non- government institutes for the membership of this Force.

3.2 Coral Reefs

Most coral reefs help for bio diversity and scientists have identified their herbal value. Large demand is there for coral reefs and marine ornamental fish which in turn create an avenue for vast export income. New laws have to be introduced for both the industries and it has been planned to grow corals making no harm to natural corals with NAQDA. Farming sea weeds, promote their herbal value, and conduct a program to make medicine out of herbal corals are expected to be done in future.



3.3 Marine Tourism

Countries in the South Asian, as well as Asia-Pacific regions have demonstrated that Ocean resources can be utilized for economic development. For instance, ocean-based tourism industry in the Maldives has been able to contribute 22% to its GDP, in 2012 according to do the World Travel and Tourism Council. Although Sri Lanka possesses a comparatively high resource base, earnings from tourism still remains in a very below potential. In addition, lessons can be learned from countries outside the region on how best ocean resources can be explored; such as Fiji on tourism and canned fish industry, and from Mauritius on up-market tourism.

The ocean, its resources and the natural environment has been a major contributor to Sri Lanka's tourism industry over the years. The growth rates in the past few years show the enormous potential that the tourism industry possesses, as one of the major economic sectors in the country. Given the high prospects for tourism in the marine environment in Sri Lanka, it is high time to look for new forms of tourism which can ultimately lead to an increase in the economic benefits.

The natural marine environment and its resources can be made use of, to offer a variety of tourism products such as snorkeling, diving, whale and dolphin watching, wind surfing, parasailing, and water sports, etc. Value additions for 'sun and sand' tourism has been slow to emerge in the hotel sector in Sri Lanka. In terms of the development of unconventional tourism activities, Sri Lanka can learn lessons from countries such as Thailand and Malaysia.

My idea is that the marine tourism within our country is not satisfactory. Tourism fisheries industry is given a place in the proposed multipurpose fishery harbours so that the marine tourism can be extended and international tourist attraction can be achieved.



3.4 Sea Transportation

Sea transport is also a possible avenue from which the country could benefit. Although not implemented yet, there have been long discussions on the utilization of the ocean as a mode of transport. The possibilities of having an ocean transport routes to neighboring India, as well as between the Northern and Southern regions of Sri Lanka, have been looked into by policy makers. The security issues which prevailed during the conflict period greatly constrained the implementation of such programmes. However, Sri Lanka can now make use of the ocean as a low cost mode of passenger and goods transportation.

The proposed ferry service from Colombo and Tuticorin, India, is viewed as an important avenue for increasing connectivity with India, which can thereby generate economic gains for Sri Lanka through India-Sri Lanka goods and passenger transport. However, the financial viability of the initiative needs to be enhanced through appropriate strategies, before going forward.

3.5 Ocean Energy

Sri Lanka has now called for the second round of bidding for petroleum exploration licenses. It has been an encouraging sign that world's leading oil exploration companies have shown interest in Sri Lanka's petroleum resources. It is important that Sri Lanka look to other countries, such as Norway, that showcase the best practices with regard to this.

Domestic capacity building has been a main policy priority in the case of Norway, which was achieved through the establishment of a national oil company, specification of licensing conditions, and where technology transfers from foreign companies to domestic institutes was often a requirement.

3.5.1 Oil and Gas

High demand prevails for fossil fuel and its necessity is emphasized concerning the possible fuel shortage in future, use of oil and gas and other products related to them. Currently many Middle East countries are investigating for sea bed oil fields.

Even though Sri Lanka is also investigating for fuel and gas we are still out of good result. I believe that such investigations have to be extended in other sea areas too in order to achieve good results.



3.5.2 Renewable energy

Many countries are attempting to generate electricity out of using sea waves and tidal waves as an alternative to the fossil fuel. Early history records several incidents of generating electricity in these methods yet it has been popularized recently. In addition, Sri Lanka is also blessed with other ocean-based energy resources which are not fully tapped. Sri Lanka has a good potential for ocean generated wind power.

According to the Sustainable Energy Authority, nearly 5000 km² of land has good-excellent wind resource potential. As of June 2012, 6 wind power projects have been in operation, closer to the sea and another 9 projects are under construction. In addition, Sri Lanka's strategic geographical location can be used to generate wave energy as the country has been identified as retaining a huge potential for wave power.



3.5 Sand and gravel

Many countries use sand and gravel for their constructions and UK is the main figure among them. Sand from rivers is used for constructions in Sri Lanka and it has created many a natural disasters and this situation will worsen in future. Therefore turning for the alternative of using sea sand and gravel is essential. I hope to use sea sand and gravel for all the future constructions under the Blue Economy programme.



3.5.1 Minerals

Among the numerous inanimate resources of sea, Sri Lanka is harvesting only one mineral which is salt and no other mineral is ever attempted to be harvested. Indian Ocean is hugely famous for minerals and scientists mention that its water contains chemicals more than 60. Gold, Titanium, Diamond are believed to be stocked in the sea bed and we also should pay attention to this area.



3.6 Co₂ Capture and storage

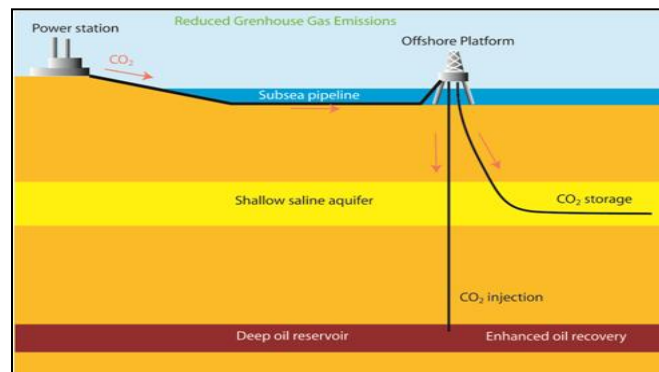
Many scientists doing researches on environmental changes are investigating to stock Co₂ created on land within the sea bed.

Sea absorbs 25% of Co₂ created by the burn of fuel and its performance lessens in sea warming conditions. This directly affects global warming. Therefore we also need to take initial steps in future in stocking Co₂ inside the sea bed which is released in fuel burn by machinery and imposing laws in this regard.

This will help to minimize extreme weather conditions such as rise of sea level which is caused by global warming it will be a better thing for the entire human kind. Even though the many of the above mentioned marine resources are not relevant to the scope of the Ministry, I am taking efforts to make the Ministry aware regarding such resources.

I also intend to arrange basic measures to convert Delft Island in to a fisheries city in establishing the proposed multipurpose fishery harbour in Delft. It is expected to use sea sand and gravel for all its constructions, utilize sea potentials in generating electricity, convert sea water in to drinking water and conduct researches in CO_2 absorption,

The proposed Blue Economy project will favor in many ways for an island state like Sri Lanka. I firmly believe that necessary arrangements need to be taken in promoting Blue Economy programme by establishing a project management unit in collaboration with all the respective ministries.



3.7 Waste management

Waste management is the collection, transport, processing, recycling or disposal of waste materials. The term usually relates to materials produced by human activity, and is generally undertaken to reduce their effect on health, the environment or aesthetics. Waste management can involve solid, liquid, gaseous or radioactive substances, with different methods and fields of expertise for each. Waste management practices differ for developed and developing nations, for urban and rural areas, and for residential and industrial, producers. Management for non-hazardous residential and institutional waste in metropolitan areas is usually the responsibility of local government authorities, while management for hazardous commercial and industrial waste is usually the responsibility of the generator. Solid wastes typically may be classified as follows:

- a. Garbage: decomposable waste from food
- b. Rubbish: non decomposable wastes, either combustible (such as paper, wood, and cloth) or noncombustible (such as metal, glass, and ceramics)
- c. Ashes: residues of the combustion of solid fuels
- d. Large wastes: demolition and construction debris and trees

4.0 Conclusion and Recommendations

4.1 Recommendations

4.1.1 Identifying Best ways and Practices

To identify the ways and means that Sri Lanka can make the best use of the ocean resources via tourism, fisheries, sea transportation, petroleum/gas, and other resources.

4.1.2 Institutional Set Up

Several institutions are involved in the management of ocean resources in Sri Lanka. Ministry of Fisheries and Aquatic Resources, National Aquatic Resources Research and Development Agency (NARA) Coastal Conservation Department (CCD), Ocean University, and also international institutions such as Indian Ocean Marine Affairs Cooperation (IOMAC).

4.1.3 Creating a Coordinating Mechanism

A coordination mechanism among these agencies is a must for the sustainable use of ocean resources. In addition, international collaboration also comes into play when collective decisions are to be made in utilizing the resources.

4.2 Conclusion

It is highly opportune to identify the ways and means that Sri Lanka can make the best use of the ocean resources via tourism, fisheries, sea transportation, petroleum/gas, and other resources. Investments in the appropriate technologies for gaining the maximum benefits in most of these sectors are a mandatory need at least to be done now, which could have been realized and attended some long time before. Also, there are large research gaps existing in an array of scientific and socio-economic aspects related to ocean resources.

In order to increase and sustain the ocean resources' contribution to economic growth, adequate attention has to be paid to the issues which hamper the increased utilization and sustainability of the resources. As of now, there is no comprehensive database on ocean resources in Sri Lanka, which is vital for effective policy formulation.

Although there are regulations in place, they are not properly enforced to handle the unsustainable activities associated with most of the ocean resources. Effective coordination among the institutions involved in managing ocean resources is also a key aspect in this regard. These remaining areas require immediate introduction of policies.