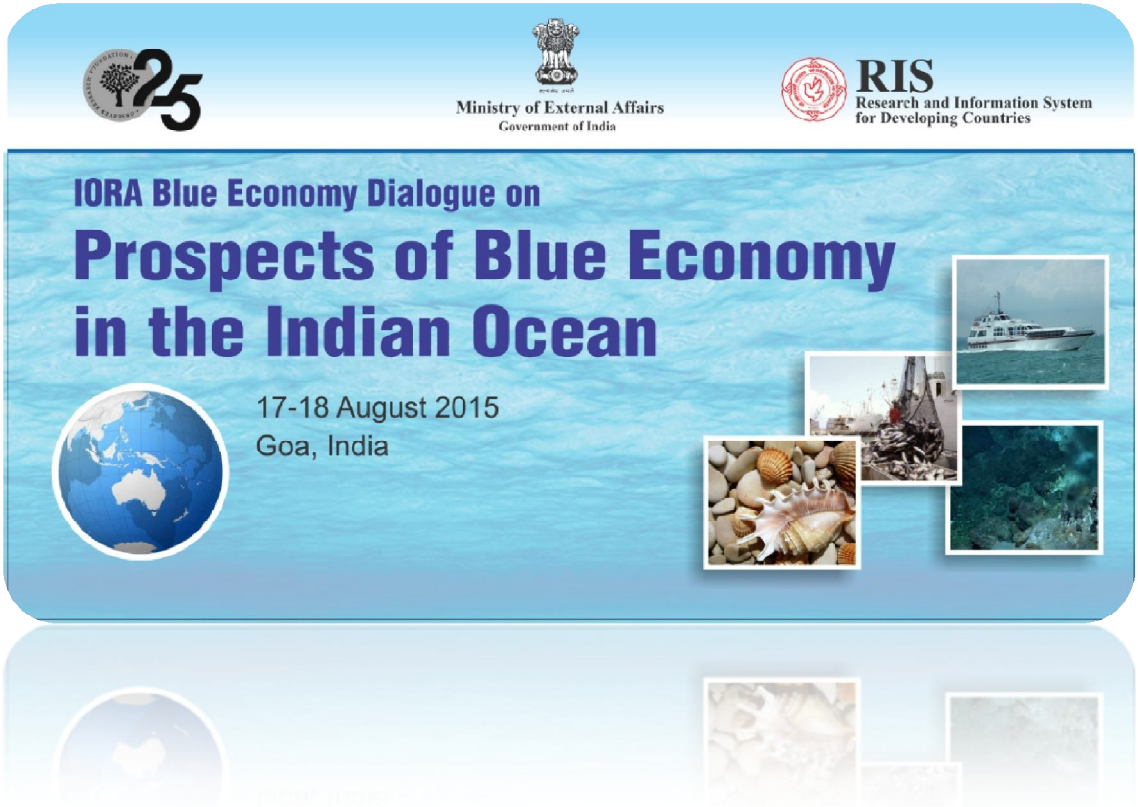

CONCEPT NOTE

Introduction

The concept of blue economy is a relatively new acronym in the development literature. Many ponder over the difference that it brings to the green economy philosophy which has been an integral part of development strategies in several countries. However, one can still identify the relevance of blue economy from the angle of the weight assigned to blue resources in the development process. Blue resources whose universe is not yet defined properly typically cover oceans, rivers, lakes and other form of water bodies and water-related activities. In precise terms, both freshwater and marine water coverage of a country and the natural resources and activities such as fishing, minerals, aquatic plants, oil, water tourism and leisure, marine biotechnology, deep sea mining of hydrocarbons, thorium, etc and the related activities on land are parts of blue economy. The protagonists of this approach visualizes a great potential for growth and job creation in the blue economy sectors as it blends the two important objectives of sustainable and harmonious use of resources and greater exploitation of resources for faster economic growth. Island and coastal economies are expected to gain more from the blue economy orientation in their development policies.

Following the blue economy paradigm, the major oceans of the world are likely to attract more investments into aquaculture, seafood processing, marine technology development & research, marine-based services and so on. By that logic, Indian Ocean covering four

different sub-regions e.g. South East Asia, South Asia, Middle East and Africa is the third largest Ocean in the world with enormous potential for harnessing blue economy resources. It carries half of the world's container ships, one-third of the bulk cargo traffic and over two-thirds of the world's oil shipments. The member states of the Indian Ocean Rim Association (IORA) buys this notion of blue economy as an opportunity for more efficient and scientific exploitation of blue resources for catalyzing growth and employment in the region. Mauritius and Seychelles, the two small island developing countries, have already embarked upon a holistic marine policy strategy for implementing blue economy principles in their respective economies. Other countries in IORA are considering of embracing this development paradigm in full spirit so as to seize the opportunities emerging from blue economy sectors for higher growth, social welfare and ecological balance.

1. Accounting Framework for Blue Economy

Despite of the growing acceptance of blue economy as an alternative development paradigm among the IORA countries, there is hardly any well-defined measure of the size of blue economy in these economies, even in other countries of the world. Without proper accounting of blue economy activities in the national accounts, it is difficult to formulate and implement the blue economy strategies in national development policies. Moreover, the coverage of blue economy sectors and activities needs to be articulated in accordance with the existing international macroeconomic statistical systems in order to set operational targets for blue economy indicators and for their systematic monitoring. Further, cross-country comparisons are possible only when consistent classification of activities and data reporting systems are developed. However, it is not as simple as it appears to be especially in view of the diversity of fish and plant species, conflicts over ownership in EEZs and beyond, valuation of non-market blue resources, level of dependence of coastal communities, etc.

At present, there is no clarity in the definition of activities and codes for production and trade in certain sectors of blue economy in the existing statistical classifications such as ISIC, HS, etc. Most importantly, the existing classifications do not provide a clear distinction between the ocean economy and the blue economy. As a result, recording of activities based on ISIC for production would be misleading and grossly underestimate the potential of blue economy in a country. Blue economy typically involves several types of coastal activities in relatively intense ways compared to their importance in conventional development models. Given the difficulty of tracing coastal activities, there has to be suitable coding and tracking system for the coastal activities. For example, the United States uses postal ZIP codes for tracking coastal activities in the country. Innovations of that sort would be necessary for systematic record of activities/services in blue economy sectors. Emerging activities in agriculture, biodiversity and biotechnology areas are not included in ISIC classifications. Besides manufacturing, services such as research and development (R&D) in marine biotechnology, marine ICT and others are not clearly defined in the existing classification systems. In addition, the role of government particularly with respect to naval and other defence services is not property identified in

those statistical systems. The present classification system does not cover high-valued minerals including thorium, hydrocarbons, etc. These sectors are quite substantial as those involve heavy investments in explorations at deep sea, regular investment in R&D and technology upgradation and services relating to mining, technology development and other services.

Keeping in mind the above mentioned complications in defining and measuring blue economy, the proposed accounting framework should be viewed from the perspective of its coverage, utility and transparency in objective identification of production, trade and services relating to different segments of blue economy. In addition to output, this framework should cover other important macroeconomic data such as value added, employment, capital formation, foreign investment flows, etc. As the concept of blue economy is evolving, the process of developing a robust and credible accounting framework would be in the interests of all the coastal countries embracing maritime economy.

In this context, several pertinent questions need to be deliberated further in order to devise a suitable accounting framework for the blue economy in the IORA region. At this juncture, the most fundamental question that remains unsettled is the identification of activities and services in the blue economy sectors? And, what are those difficulties that countries may encounter while uniformly applying a common statistical framework for all countries especially for the small island economies, LDCs, small and vulnerable economies and so on. Lastly, what would be the nature of regional cooperation in formulating consensus on this accounting framework in the IORA region?

2. Fisheries and Aquaculture

Fishery is a vital oceanic resource that forms the core of blue economy. Besides wild catch, there has been phenomenal growth in fish farming worldwide. While dependence on aquaculture is growing over time due to increasing demand for fish and fish products, people in many parts of the world view aquaculture as a sector for gainful employment and self-enterprise. All the member countries of IORA are well-endowed with fisheries and aquatic plants which could be harnessed for the growth of blue economy. Following the principles of blue economy, the problems of overfishing, IUU fishing, fishing in high and open seas, etc are expected to be regulated even though the focus would still be on the optimum use of fishery stock in the region. In other words, blue economy may warrant a significant departure from the conventional fishing practices and regulations in the IORA countries. In addition, this may necessitate changes in the legal and institutional structures for enabling a smooth realization of blue economy goals.

Blue economy orientation is likely to emphasize more on the optimum use of fisheries. Of the new areas that assume higher importance in blue economy, the most crucial component is the possibility of value addition through fish processing. Unilaterally, some countries such as China, Thailand and others are promoting the processed fish industry in order to

benefit from the surge in demand from the US and EU. Since capture fisheries face the problem of overfishing and low fertility in most fishing areas of the world, the challenges of food security can be addressed through sustained aquaculture production. In the blue economy paradigm, both raw and processed sectors in aquaculture would require greater application of modern technology. It is therefore necessary to establish suitable mechanisms for technology transfer in fisheries among the IORA countries.

Pricing of fish and fish products is a contentious aspect of fisheries in the context of blue economy. In absence of comparable global database on fish prices, it is hard to estimate the contribution of fisheries to national output and the nature of pricing. Data availability on fish prices would help in determination and stabilization of market prices in fish markets in the IORA region and in other parts of the world. In addition, cross-country database on prices would be useful for determination of fair and remunerative prices for fish products.

It is widely believed that a significant part of the potential of blue economy is not tapped yet. If that is true, then the fisheries and aquaculture sectors would get boost in the coming years. It would necessitate sizeable investment and higher market access beyond the national borders. IORA countries should open up their fisheries sectors and institute necessary reforms that would unlock market opportunities in the region. In that light, the fishing nations in IORA should negotiate for higher market access in each others' markets and undertake necessary measures aimed at developing region-wide standards for processing, certification, labelling and marketing of fish products in the region and in the world.

Although some forms of regional arrangements (e.g. Fisheries Support Unit) for fisheries and aquaculture exist among the IORA countries, it is imperative to examine the additional tiers of cooperation in fisheries within the blue economy framework. What would be the format of cooperation, the types of policy measures and the degree of enforceability in event of violation of those policies? Further, the limits of fisheries and aquaculture sectors for commercial exploitation are well-known to the fishing nations as well as the regional and global fishery bodies responsible for the regulation and governance of fishery resources in the world. In that light, what kinds of preventive and regulatory measures those could be considered for effective implementation of blue economy strategies in the region? Most importantly, what would be the modalities for transfer of technology and sharing of production and trade data in fish processing sectors?

3. **Renewable Ocean Energy**

Global demand for energy continues to rise with prosperity in the emerging and developing economies particularly in China, India, Brazil, South Africa, Japan and Korea. At the same time, the severity of environmental degradation and climate change associated with conventional sources of energy in the form of increased CO2 emission, acidification in oceans, etc is greatly acknowledged by the high-energy consuming nations. In the blue economy paradigm, the tolerance level for higher emissions will no longer be acceptable to

the countries adopting blue economy policies in their development models. Since demand for energy would remain high in the growing economies in the future, the reliance on alternative non-conventional renewable sources of energy appears more feasible. Marine-based renewable ocean energy generated from diverse sources-wind, solar energy, wave, tidal cycles, salt concentration and thermal power best suits the blue economy model as it emphasizes sustainability rough renewability of energy sources. Indian Ocean rim countries have already taken measures to harness the renewable energy resources for meeting the growing energy demand in the region. The Indian Ocean Renewable Energy Ministerial Forum held in January 2014 launched several initiatives to explore renewable energy resources in the Indian Ocean region.

Like other countries along the Rim, India considers renewable ocean energy as an important source of energy that could supplement the rising energy requirements in the country. The recent policy initiatives by the government such as Generation-based Incentives (GBI), tax holidays, 100 per cent FDI in renewable energy sector and so on could prove effective in promoting energy production in the renewable ocean energy sector. In its Strategic Plan for the period 2011-17, the government emphasizes the renewable energy sector as a key component of energy supply in the country, aims at increasing the contribution of renewable power to total installed power generation capacity of the country from 16 per cent to 18 per cent by 2022. Besides augmenting domestic sources of renewable energy sector in which the ocean energy is a crucial component, India gives importance to fostering international cooperation in the new and renewable energy sectors.

4. **Ports, Shipping, Manufacturing and Other Sectors**

With expansion of seaborne trade in the recent years, port development assumes importance in the Indian Ocean region. There has been sustained rise in world container throughput over the past few years. At the same time, the demand for large vessels and increasing use of dry-bulk cargo puts emphasis on concerted efforts towards capacity expansion and modernisation of ports. In a regional context, ports should be treated as shared infrastructure which would lower transaction costs and facilitate smoother flows of goods in the region. Further, there are many countries such as Hong Kong, the United Arab Emirates, Tanzania, etc whose port facilities are primarily meant for transit facilities and services to other countries trading through those routes. In the blue economy framework, countries may tend to develop their own ports and focus on long-distance shipping thereby affecting the services of the transit ports. However, a protagonist view favours capacity expansion in the sense that more ports may intensify seaborne trade and services across the region with insignificant effects on the businesses of the transit ports. This remains controversial at this juncture because of the complex interplay of competing sectors and forces in the blue economy model. For instance, the major seaports in the European Union are in competition with each other due to concentration of cargo handling in select ports such as Rotterdam, Antwerp and Hamburg whereas some ports grapple with excess capacity. Optimum use of these connected seaports would minimise trade distortions and

promote regional trade in the EU. Likewise, the Indian Ocean rim countries must take cognisance of these conflicts while implementing blue economy measures in their economies. Ports would become the nerves for numerous blue economy activities and services in shipping and ancillary sectors. Besides ports, shipping in general may get renewed focus in the region due to blue economy orientation. Investment opportunities in ship building may grow as the demand for new varieties of ships catering to traditional shipping, ferry, small cruise and other forms of marine tourism is likely to grow in the future.

Blue economy covers a number of traditional as well as non-traditional sectors including deep sea exploration of minerals including hydrocarbons, thorium, etc, oil & gas production, marine biotechnology, bunkering, petroleum storage, marine ICT, water-based tourism and leisure, shipping & maritime transport, marine construction and engineering, renewable ocean energy, boat building, cruise, and other marine services. With advancement in exploration technology, the feasibility of exploitation of seabed resources and sea mining is seemingly high. Countries in the region may freeze this opportunity by investing in development of these technologies. Rare earth metals that are used for a number of high-tech products and other technologies are important to the promotion of blue economy in the region. IORA countries may enhance cooperation in mining and use of these precious resources for promotion of blue economy and overall development in their economies. Similarly, the region has a rich treasure of coal reserves; a vital blue resource that has immense contribution to development in the region.

R&D in marine biotechnology is emerging as a promising sector for growth and employment. Although the share of R&D in total output is quite low for most of the countries in the world, these sectors would certainly require a big push in terms of investment for innovations and product development.

The services component of blue economy is substantial in its scope and future contribution. Marine services including ICT, banking, insurance & financial services, transport & logistics and tourism are considered to be the high-growth sectors. Most of these services would grow in tandem with the rise in the production of blue economy sectors. In that context, the IORA countries must unleash the prospects of higher growth and job creation in these emerging sectors.

Unlike the current practice, the treatment of these sectors for production and consumption may be different in the blue economy framework. While integrating these sectors to mainstream development process will lead to intensive use of resources in these sectors, the environmental parameters of blue economy may discipline the nature of its use. Regardless of the ways in which the contribution of these sectors are viewed, some of these emerging blue economy sectors possess immense potential for growth, value addition and job creation.

5. **Sea-bed Exploration and Minerals**

Exploration of metals and minerals on the sea bed is viewed as an emerging sector of blue economy in the Indian Ocean region. Despite of significant advancement in exploration technology, commercial deep-sea mining has not happened in any part of the world. Many believe that the current advancement in exploration technology for offshore and deep-sea minerals could make it a reality soon. Among the sea-bed resources, the most precious metals are PMN, a composite of cobalt, nickel, manganese, iron, etc, copper, lead, zinc, gold, silver, titanium, thorium and other rare earth metals. In particular, the Central and South Western parts of the Indian Ocean are rich in copper, lead, zinc and other minerals. In the blue economy paradigm, there could be more emphasis on harnessing this unexploited rich endowment of precious sea-bed resources. Since the experience on deep-sea mining and its economic viability is scant (or not available) the Indian Ocean rim countries may end up in undertaking selective experimentations. At the same time, the environmental impact of such activities on the sea bed is not properly known. Since the technical know-how for deep-sea exploration is likely to be asymmetric across the Rim, this particular sector of blue economy needs specific attention so as to avoid unintended consequences on sustainability And ecological balance.

As mentioned above, the contribution of the emerging blue economy sectors to economic growth in the IORA region is likely to grow in the future. However, in absence of any systematic recording of the activities in these sectors, policy making for promotion of these sectors would be difficult. In that light, the conference should encourage informed debate on the potential and prospects of the emerging sectors in the region. In particular, how to determine the blue economy component in different activities occurring in those sectors? What kinds of initiatives that could be undertaken in this regard at the regional level?