



## Blue Economy: Awareness, Education and Financing

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The concept of Blue Economy is gaining popularity among a number of stakeholders including government agencies, scientists, academia, industry, and entrepreneurs. However, there is a need to adopt a holistic approach to develop Blue Economy, and in this context, at least ten issues merit attention.

First, there is lack of general information about the sea among the populace. The common belief and imagination of the sea is that it is an endless space and serves as a medium to transport goods and a rich source of fish. The coastal area is a place for leisure and the underwater domain is unfathomable.

Second, there are numerous knowledge gaps particularly in terms of data about sea based resources, health of the oceans, issues of biodiversity, marine and aquatic life and the impact of pollution and land based industrial discharge to marine habitats and ecosystems. This has been a result of a near absence of marine sciences in the curriculum at primary, secondary and tertiary level which limits interest among students who would in the future emerge as scientists, engineers and skilled workers. This gap can be addressed through collaboration among education and training institutions, industry and the government.

Third, is lack of marine science data for public use. Much of the data is held with scientific bodies, laboratories and research centers. These agencies are supported by the government through various programmes, funding and research infrastructure,

thus there are issues of intellectual property rights and some data is considered too sensitive to be shared with the general public.

Fourth, given the above considerations, the entrepreneurs and start-ups do not possess adequate knowledge of the richness of the oceans and are unable to comprehend newer and sustainable use of the seas which inhibits innovation for Blue Economy. If marine data is made accessible and limitations on its usage are removed, the small and medium-sized enterprises (SMEs) and other private agencies are in a good position to explore possibilities to use the specific data to develop programmes such as marine spatial planning, mapping the seabed and overlying water column under national jurisdiction.

Fifth, growth of Blue Economy is highly dependent on technically skilled workforce which should be able to understand the marine medium, its unique characteristic, apply the innovative technologies in science and engineering, and fill the skills gap. Given that Blue Economy thrives on innovation, the younger the innovator, the greater will be the zeal to do something different and this enthusiasm can help achieve successful business despite numerous challenges which the innovator may encounter at the personal level as also at the ecosystem level. In essence, an innovator with an interesting idea can transform into an entrepreneur.

Sixth, is the need to develop tailor-made programs that contribute to the growth of Blue Economy particularly for developing countries through contributions to capacity building and bridging knowledge gaps which help their economic growth objectives. This can be achieved through partnerships among education and scientific institutions of other countries and regions.

Seventh, innovation and entrepreneurship are important facets for the development of Blue Economy and the SMEs, entrepreneurs and startups act as catalyst for the sustainable use of oceans which would potentially turn into job creation. These often find it difficult to organize requisite finances to turn their ideas into operations. The governments are cautious of sharing finances with private agencies / individuals

and prefer government bodies and institutions to provide financial support for research and development. Besides, such financial support is often prone to bureaucratic hurdles.

There are a number of ways available to raise funds such as long and short term capital through venture capitalists who prefer technology-driven businesses and companies with high-growth potential in areas such as information technology, communications, and biotechnology; Angels are those people who are generally wealthy or retired company executives who want to invest directly in small firms; and business incubators provide financial support for new businesses in various stages of development.

Eighth, Foreign Direct Investment which is focused on the oceans can help in technology transfer, promote research, and industrial development, skill enhancement resulting in innovative technological solutions and pioneering products, services and jobs.

Ninth, companies, investors, and end users need to network, which can potentially encourage entrepreneurship and start-ups to adopt an integrated approach to the development of Blue Economy.

Tenth, the role of women in the development of Blue Economy through SMEs, innovation and empowerment merits consideration. Their engagement results in growth in domestic income and social and economic prosperity.

Finally, as the global community works towards harnessing the Blue Economy, which demands newer ways to manage the oceans and its resources, it is important to obtain a better understanding of not only the seas and the oceans, but also develop systems, processes and methodologies through technology, skills and entrepreneurship.

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