

Developing ‘Software’ for Blue Economy

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India has announced that its march towards developing the blue economy has begun and “India is on the brink of a [blue revolution](#)”. The Union Minister for Shipping, Road Transport and Highways has stated that the government plans to invest Rs 12 lakh crore over the next ten years to develop 27 industrial clusters, and to improve connectivity with ports through new rail and road projects. These are expected to create ‘immense employment opportunities’ in the ports, roads and shipping sectors over and above the 10 million potential jobs under the Sagarmala project. Though ambitious, these projects could be completed in ‘half the time’. A careful review of the above statement suggests that investments are targeted for developing infrastructure, which is the ‘hardware’ of the blue economy; however, India is yet to invest in the ‘software’ which includes at least four segments i.e. blue laboratory; blue business; blue education; and blue skills.

Blue economy is a combination of traditional sectors such as shipbuilding, shipping, ports and fisheries. Marine tourism or the marine leisure industry and cruise liner industry is another important sector of blue economy. Blue economy also includes an assortment of new technology-oriented sectors that are capable of supporting advanced marine bio-prospecting through exploration and study of the marine ecosystems, marine organisms and animals, plants, algae and vegetation and multi-species aquaculture. These are important ingredients for a number of products which are essential as proteins in the form of food and feed, pharmaceuticals, cosmetics and other products. Besides, technologies capable of generating energy through tidal wave and sea based wind farms are already in operation.

By all counts, blue economy is science intensive and requires enormous fiscal resources. These have to be financed by the government or provided for by private

entities who are important stakeholders in the development of blue economy. Further, the existing models of public and private partnerships, incentive based financing, venture capital and seed money are other ways to generate capital. A blue bank which has a corpus of funds to support innovation and entrepreneurship is a useful idea. An innovative approach could also be in the form of crowdfunding and fundraising campaigns to raise capital for implementing the concept.

Another important facet of the development of blue economy is human resource. The human capital would have to be nurtured at the grass root levels beginning with schools and colleges and thereafter during professional courses. Further, vocational institutions are critical for promoting, training and skilling workers that are adept at understanding the oceans and working in industries that support blue economy.

This requires a strategy for human resource development as the curriculum would have to be customized for a specific vocation. It would also be important to raise awareness among the youth and also the industry who would be the final recipients of this highly specialized gene pool of blue professionals. Further, there would be a need for sector-specific talent development for a number of white (administrative and institutional) and blue (products and services) collar jobs. This can potentially plug the gap between the demand and supply of new generation of marine scientists, professionals, technicians, and entrepreneurs. The industry can develop blue technology incubator to spur business and jobs and also invest in Marine Spatial Planning programmes which support sustainable use of resources to ensure good health of the oceans. Likewise, the role of entrepreneurs, start-ups, medium and small enterprises cannot be underestimated. In this context, this national agenda of 'skill development', 'make in India' and 'digital India' would amply support the development of blue economy.

Another important facet for the growth of blue economy is diplomacy which can facilitate foreign investments, transfer of technology for innovation and development of blue industries through collaboration. Given that oceans have a transnational character, an integrated development of blue economy across regions and sub-regions can be promoted through multilateral institutions and organisations such as the South Asian Association for Regional Cooperation (SAARC), Indian Ocean Rim Association (IORA)

and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) who have also endorsed development of blue economy.

Although job creation is at the heart of the blue economy, it is the sustainable use of sea based resources that merit consideration. The focus of any blue growth strategy should directly contribute to the UN Sustainable Development Goal No. 14: “Conserve and sustainably use the oceans, seas and marine resources” which places enormous demands on states to plan, manage and use the seas sustainably by the current and future generations.

While the overarching objective is to develop blue economy, it should be supported by a robust regulatory framework which contributes to sustainable use of existing natural resources. Also, proactive and facilitative governance which supports job creation, encourages innovation and provides opportunities for knowledge-based businesses in key maritime sectors is indispensable. In essence, a clear national vision and a road map for ‘blue revolution growth’ would require a variety of stakeholders, businesses, industries, institutions, academia and the government to pool in resources to develop the ‘software’ of blue economy.

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