Blue Economy Insight
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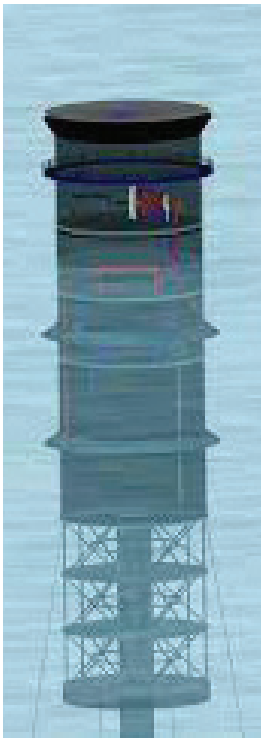
From Editor's Desk

The Blue Economy embraces numerous ocean sectors which are traditionally known to humankind for several centuries but the modern Blue economy distinguishes itself from the past. The difference is because of advancement of the state-of-the-art technologies deployed for harnessing immense maritime resources sustainably with attempting to restore ocean health. Footprints of Blue Economy are seen in all economic activities of an economy and, therefore, innovations and experimentations of Blue technology are of immense need for rapid maritime sectoral development. After years of global efforts, vast endowments in the marine sector are yet to be explored or not yet exhausted fully on account of lack of enough technology to support them. Indigenous creation of marine technology is the only recourse left with the littoral countries under Industry 4.0 to respect balancing of ocean natural resources with human consumption needs.

Innovations in marine technologies can cover diverse sectors such as fishery, coastal management, placer and deep-sea mining, desalination of water, marine renewable and non-renewable energy, ports and harbours, ship repair, marine manufacturing, marine biotechnology, marine travel, marine transport, marine ICT, etc. Advancements in fish aggregation methods with moored open sea cages have opened up new opportunities for mariculture in the realm of aquaculture. Wide range of fish processing technologies is required to enhance shelf life of products. Technology requirements for isolation of coastal placers from sand and processing for production of rare earth materials are becoming important.

Creation and innovation of technologies in other sectors assume paramount importance. Development of mining equipment for collecting polymetallic nodules from soft deep seabed at a water depth of 6000 metre commercially is a technology challenge. Technology developments for the production of hydrocarbon and gas hydrate from deep waters, deep-water wells or collecting samples from 100 metre below the sea floor involves major challenges. Necessities for Blue technologies in key areas, such as early warning system for natural disasters, weather forecasting, sensor technology, use of robotics, IOT, big data, 3-D, blockchain, etc. in the ship and boat building; development of low content nitrogen and sulphur in bunker; containerisation; marine cyber security; various simulation modelling software for production and forecasting in the marine sector etc. are of critical importance for littoral economies. Regional cooperation in Indian Ocean Rim Association (IORA) for creation of Blue technology through specific projects can meet specific aspirations of the regional economies.

OCEAN THERMAL ENERGY CONVERSION



Ocean Thermal Energy Conversion (OTEC) technology is one of the most commercially feasible renewable sources of energy from the ocean sector. The game-changing technology, leveraging on the temperature difference at the surface of the ocean and cold seawater below the depth of 800–1000 metres, can generate electricity in an environmentally sustainable manner. Apart from generation of affordable electricity, this technology can generate several by-products and services in sectors like agriculture and aquaculture including desalination of purified water, air conditioning, refrigeration and cooling to make this technology cost effective. It is surveyed that 68 countries and 29 territories can effectively harness this technology in the world.

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