

Preface

In recent years, the blue economy has emerged as a pivotal framework for driving economic growth, particularly as an ocean-dependent economy. This concept is gaining global attention, with countries worldwide, including India, recognizing its potential to propel economic advancement due to the vast resources and service opportunities it offers. The blue economy encompasses a multitude of sectors, methodologies and philosophies dedicated to the sustainable utilization and management of oceanic resources.

Emphasizing the principle of sustainable utilization and management, the blue economy stresses the importance of ensuring no harm is inflicted on the oceans, their resources, flora and fauna, and the overall environment. This ethos resonates with the wisdom of the great sage Chanakya, who likened tax collection to honeybees gathering nectar – gently and without inflicting pain. Achieving sustainable utilization and management of the oceans demands a diverse range of data, the ability for informed decision-making, and the implementation of strict governance strategies.

This Special Section on the Blue Economy compiles articles from esteemed researchers and experts, offering invaluable insights into crucial facets of this evolving economic paradigm. Encompassing topics from economy and accounting practices within marine contexts to the intricate dynamics of marine fisheries, ports and shipping operations, energy and freshwater utilization from oceans, this special section serves as a repository of knowledge for the blue economy.

The article ‘From ocean science to sustainable blue economy’ provides (page 155) an overview of the blue economy, emphasizing the role of ocean science and technology in its promotion and the conservation of ocean space. S. K. Mohanty’s contribution (page 161) identifies the sectors contributing to India’s blue economy and attempts to quantify their economic value. Gopalakrishnan *et al.* delve (page 169) into the intricate dynamics of fisheries in India and propose a way forward to achieve self-sufficiency in fish production. Rajoo Balaji summarizes (page 177) the challenges in expanding the shipping industry in India, while Purnima Jalihal narrates (page 185) the status of Indian efforts in freshwater and energy extraction from the ocean, outlining future scalability.

Beyond economic dimensions, this special section delves into the rich reservoirs of marine minerals, biodiversity, and the burgeoning industry of coastal and island tourism, shedding light on extraction, preservation and economic value. Discussions on ocean services, mariculture and marine spatial planning further enrich this special section, illuminating pathways toward sustainable growth and resource management.

The article authored by Sunil *et al.* provides (page 192) a comprehensive narrative on the commercially and strategically significant deep-sea mineral resources and their potential implications for the blue economy. The current status of efforts invested in surveying, locating and quantifying these mineral resources in the deep sea is thoroughly documented in the article.

Similarly, the contribution by Sebastian *et al.* delves (page 200) into the critical aspects of biodiversity, emphasizing its economic potential and the prerequisites for extracting commercially and medicinally valuable products sustainably. This exploration aims to contribute to the overall promotion of the blue economy in the country.

In the article, ‘Operational oceanographic services for the growth of blue economy in India’, the authors shed light (page 208) on the pivotal role of ocean services, including advisories to fishermen regarding potential fishing grounds and forecasts on the state of the ocean for ensuring safe navigation and operations at sea. The article not only narrates the current status of such services in India but also delves into their economic value and future potential for fostering the growth of the blue economy.

Furthermore, the importance and potential of tourism and the offshore cage culture of fish in the context of the blue economy are thoroughly discussed in two distinct articles authored by Robin *et al.* (page 215) and Santhakumar *et al.* (page 222) respectively. Both articles draw upon case studies to illustrate and substantiate their discussions.

Lastly, Ramana Murthy *et al.* addresses (page 229) the imperative need for marine spatial planning through a consultative process. This process is crucial in guiding the planning of infrastructure and other developmental activities on the coast and adjoining areas. The article presents a case study conducted at the Lakshadweep Islands and it describes the framework established to comprehend the value of Marine Spatial Planning (MSP) in India, with insights from the Indo-Norway International Ocean Management and Research Initiative.

These articles collectively contribute valuable insights into diverse facets of the blue economy, from accounting for the blue economy, fisheries, coastal infrastructure for blue growth, technologies for energy and freshwater extraction, deep-sea mineral resources and biodiversity preservation to operational oceanographic services, tourism and marine spatial planning. The wealth of knowledge presented underscores the multidimensional nature of the blue economy and its significance in fostering sustainable growth and resource management.

As the global community actively defines the future of our oceans during the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), this

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special section serves as a guiding compass for policymakers, researchers, industry stakeholders and environmental advocates. It calls for innovative approaches, collaborative strategies, and robust governance frameworks to foster a harmonious relationship between economic prosperity and environmental conservation.

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Finally, I express my appreciation to the Editorial Board of *Current Science* for allowing the preparation of this special section on the Blue Economy, addressing one of the most important contemporary topics of our time.

S. S. C. Sheno
– *Guest Editor*