Marine living resources – a blue future

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India's vast exclusive economic zone (EEZ) with its rich bounty of living and non-living resources, offers a great opportunity to expand its economy and food security, and could enable sustainable development and create resilient jobs. Marine fisheries, mariculture and marine bioprospecting are significant sectors which could act as the next big drivers of the GDP and public welfare. Marine biodiversity documentation sporadically requires innovative techniques using genomics in combination with underwater imagery to cover the full spectrum of marine living resources. Deep waters beyond 500 m depth are not optimally exploited and offer immense scope for commercial exploitation. The mariculture sector, despite the wide array of candidate species, is still in its infancy and requires the use of genetic engineering to develop breeds suitable for the mariculture systems. Employing new analytical technologies and a wide range of 'multiomics' tools can enhance the bioprospecting of numerous marine living resources, which have the potential to unravel hundreds of new compounds for human well-being. Ascertaining the continuity of the blue economy demands judicious management of oceanic resources through innovative and sustainable practices.

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ports over 4 million fisherfolk and coastal communities for their livelihood and culture[3]. The ocean surrounding India thus offers a great opportunity to expand its economy, food security and creation of jobs. Industries and activities reliant on the oceans, such as fishing, tourism, ports and shipping have become a synonym for the blue economy[4], and are crucial for India's future growth and prosperity. Considering the paramount significance of oceans as a source of economic growth as well as a reservoir of living and non-living resources, the Government of India (GoI) drafted a Blue Economy Policy which aims to unlock the country's potential for economic growth and welfare by harnessing its vast maritime interests[5]. Primary industries which can fuel the blue economy encompass a wide range of sectors, involving living (fisheries, aquaculture and bioprospecting) and non-living components (shipping, tourism, and offshore oil and gas exploration). The blue economy could be the next big driver of GDP and welfare if managed with sustainability and social justice in consideration[6,7].

This article addresses the significance of marine living resources in the Indian seas and their potential for economic growth and other benefits, particularly in the context of biodiversity, fisheries, mariculture and biotechnological prospects. It also examines the challenges and constraints for the sustainability of marine living resources.

The Indian Ocean – a region with rich biodiversity