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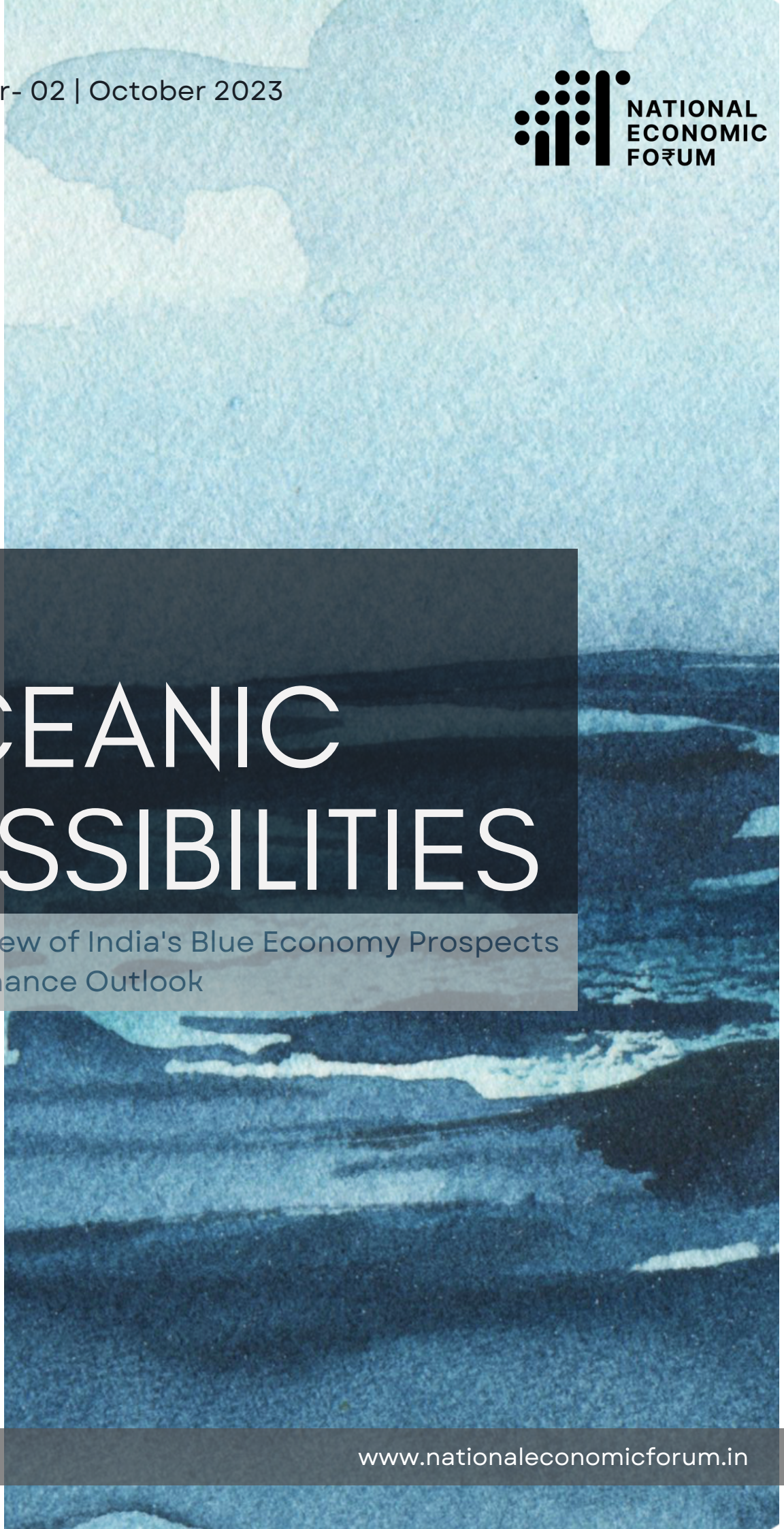

OCEANIC POSSIBILITIES

A Brief Review of India's Blue Economy Prospects and Governance Outlook

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Author/s Harsha Pareek

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Abstract

"No waste and no emissions" is central to the concepts of both Green Growth and Blue Growth. The United Nations' Sustainable Goal 14 seeks to, "conserve and sustainably use the oceans, seas and marine resources for sustainable development", which emphasises on how global governance requires to be considerate of ocean resources. Even though there is no working definition of blue economy at the moment, it presents the opportunity for all to develop their own definitions and paradigms of blue growth and development. Based on OECD projections (pre-pandemic), blue economy stands to grow at a rate that's double that of the rest of the world economy. There needs to be a higher focus placed on planning and governance of the same to ensure a smooth and sustainable uptake.

Introduction

The path to attaining long term prosperity, while being mindful of mankind and environment, specially the seas and oceans, follows the usage of solutions and innovation that increases food security, reduces poverty, improves health and nutrition, while increasing employment and benefitting trade and industrial growth keeping the health of biodiversity in mind (MoFA Bangladesh, 2014a/Hussain et al., 2018). This calls for the development of a dynamic legal and institutional framework, by strengthening ocean research and innovation and protection of ocean ecosystems, giving rise to the concept of blue growth and "Blue Economy" (Moutusi, 2018).

The ocean contributes to our sustenance and well being through the production of oxygen, absorption of carbon dioxide, recycles nutrients and additionally regulates the global climate and temperature (Bari, 2017). Over half of the world's oxygen is produced by the global ocean. Additionally, by acting as heat sinks, they help regulate the global weather.

With a rising need for sustainable avenues for growth and development and a depletion of land resources, a growing focus is being placed on oceans as a source of economic growth. Currently, US$ 1.5 trillion of the gross value added activity globally is being contributed by the ocean economy (OECD, 2016). At present, globally, it creates 660 million to 820 million jobs related to fisheries (Suresh A, 2023), with around 40 percent of the world population residing in the coastal areas (UN, 2017). Another study estimates the annual contribution at US$ 2.5 trillion, (Hoegh-Guldberg, 2015), approximately close to the GDP of France (US$ 2.4 trillion) in 2015, translating it into being larger than the then ranked 6th largest economy. In 2018, UNCTAD estimated that the value of ocean goods stands at approximately US$ 1 trillion. According to the report by Hoegh-Guldberg, the ocean's asset base stands at at least US$24 trillion. The economic dependence on oceans is rising and will only rise further going forward.

The sections below look at the working definitions of blue economy, the various approaches to ocean governance, the components of blue economy that India enjoys and how governance and policy framework would play a pivotal role in attaining blue economy.

Defining Blue Economy

The term "Blue Economy" reflects peoples' need for growth and development in view of impacts of climate change, as first introduced by Guntar Pauli (Nayak 2020) in 1994 (Moutusi, 2018), marks a move away from the earlier human centric development to an economic

path that is in harmony with nature and sustainability. The emphasis on sustainability first took form in the Rio + 20 conference. The conference laid heavy emphasis on “green growth” with terrestrial ecosystems in mind. Noting that a similar attention was due to the blue economy and the term “blue growth” was coined by a group of small island nation states (SIDS) to recognise the multifaceted social and economic importance of inland waters and oceans (Eikeset, et al. 2018). While the concept and thought behind the "Blue Economy" is clear, there is no standard definition of the "Blue Economy". It is used in various ways, highlighting the diverse operational interpretations, and understandings of the concept.

Blue economy has primarily been associated with the long-term sustainability of our ocean's economic potential and output. It is a systematic and strategic policy move to develop and monetise oceans while also acknowledging the pressing environmental concerns of many conservationists. Apart from its bird's-eye view understanding, there are nuances in prioritisation and relevance, existing globally and studied & defined by the world's most elite institutions.

The United Nations, in 2014, in a concept note defined “Blue Economy” as: “Blue Economy is a marine-based economic development that leads to improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”. The United Nations Programme of Green to Blue Economy also further expands on the definition to include “reducing environmental risks and ecological scarcities, endorsing low carbon, resource efficiency and social inclusion”. Thus, The definition places emphasis on three key parameters - economic growth and development, ensuring social well-being and being mindful of sustainability, in the same order.

In their 2015 report, “*The Blue Economy: Growth, Opportunity and a Sustainable Ocean Economy*”, the Intelligence Unit of The Economist gives a working definition of blue economy which states that it is “A sustainable ocean economy emerges when economic activity is in balance with the long term capacity of ocean ecosystems to support this activity and remain resilient and healthy”. Their definition focuses on the path to achieving sustainable ocean economy, creating balance and harmony between how long can the oceans sustain economic growth and development and ocean perseverance.

Soon after, in 2017, the World Bank defined “Blue Economy” as “the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems”. In this definition, blue economy centres on attaining economic growth and opportunities, and the maintenance of the ocean economy’s health through a sustainable usage of marine resources.

The Commonwealth of Nations looks at it as “an emerging concept which encourages better stewardship of our ocean or 'blue' resources”. The definition looks at blue economy as a new concept, prioritising more on governance and leadership of marine bodies and resources. The definition lacks any emphasis on sustainability or an economic and social lens of outlook.

Different actors and organisations use the term to highlight the relationship between human rights and oceans. This diversity in the use of the term reflects the contradictions and contestations surrounding the concept of the blue economy. To add to that, these differences

reflect the challenges of embracing the opportunities of the ocean economy while addressing its threats. Hence it is integral to look at these nuances comprehensively to arrive at a more justified and reasonable characterisation of the blue economy, which not only covers the diverse outlooks as presented by these global institutions but also include their differences in terms of how they approach the problem of defining the blue economy. Defining a blue economy becomes key as it would help decide both the calculation of its contribution as well as map out the key players in its governance.

As is evident from the above, there is no consensus on a particular definition, giving rise to a piece-meal approach. This makes it difficult to attribute an inclusive and comprehensive meaning to the term, thereby diluting the importance and impact of the concept. However, for the purpose of this paper, blue economy can be understood as the composition of [i] sustainable usage of marine resources, [ii] ensuring well being and rights of people and, [iii] balancing human centric development and protection of marine ecosystems.

Components and Activities of Blue Economy

The components of blue economy have been divided into 4 main categories as undertaken by Michelle Voyer et al. These categories have been established while following the 4 discourses as elaborated upon by Silver et al.: oceans as natural capital, as good business, as integral to Pacific SIDs, as small-scale livelihoods. These components and activities highlight the diverse sectors and activities that fall under the concept of the blue economy, as identified by the European Union and other stakeholders in the field of ocean governance and sustainability. The table below diverges these further and then adds to the same as well.

Table 1: Components of Blue Economy and Growth Prospects

Type of Activity	Ocean Service	Industry	Drivers of Growth
Harvest of living resources	Seafood	Fisheries	Food security
		Aquaculture	Demand for protein
	Marine Biotechnology Minerals	Pharmaceuticals, chemicals	R&D for healthcare and industry
Extraction of non-living resources, generation of new resources	Minerals	Seabed mining	Demand for minerals
	Energy	Renewables	Demand for alternative energy sources
	Fresh water	Desalination	Demand for fresh water
Commerce and trade in and around the oceans	Transport and trade	Shipping	Growth in seaborne trade; international regulations
		Port infrastructure and services	
	Tourism and recreation	Tourism	Growth of global tourism
		Coastal development	Coastal urbanisation; domestic regulations
Response to ocean health challenges	Ocean monitoring and surveillance	Technology and R&D	R&D in ocean technologies
	Carbon sequestration	Blue Carbon	Growth in coastal and ocean protection and conservation activities
	Coastal protection	Habitat protection and restoration	
	Waste disposal	Assimilation of nutrients and wastes	

Source: Adapted from The World Bank. 2016. Blue Economy Development Framework. Washington, DC: The World Bank; MoEFCC & UNDP, 2023

As illustrated, blue economy sits on two competing sides- one of avenues for economic growth development and the other of protection of vulnerable and threatened spaces, bringing to notice, yet again, a need for solutions that balances opportunities and the accompanying threats.

India's "Blue Economy" is a subset of the national economy comprising the entire ocean resources system and human-made economic infrastructure in marine, maritime and onshore coastal zones. India's Exclusive economic zone of over 2 million sq. kms has plenty of resources , just the coastal economy alone sustains 4 million fisher communities [1] (K's paper). On a conservative estimation, the contribution of blue economy segments contributes to approximately 4 percent of the Indian GDP.

On the count of the calculation being conservative, defining blue economy for India becomes key as it would play a pivotal role in calculating blue economy contribution to the GDP as well. In a recent draft policy framework titled "India's Blue Economy ", released in 2020, the Economic Advisory Council to the Prime Minister, government of India, has highlighted that there is no universally agreed upon definition of blue economy and have gone on to define it. The paper mentions that, in the Indian context, Blue Economy is considered an emerging concept consisting of "the entire ecosystem of ocean resources including marine, maritime and the onshore coastal economic sub systems within India's legal jurisdiction which have close linkages with economic growth, environmental sustainability and national security" (p. 12). It includes aspects such as economically valuable resources in water, on and under the sea beds, onshore infrastructure like sea ports, maritime routes connected with domestic and international trade, and offshore energy resources. The Blue Economy policy also encompasses new and emerging marine technologies and the latest developments in science. The section below lists out a few components and India's progress along them.

I. Fisheries

While considering blue economy, one of the main objectives was to transition from land to sea to cater to the growing food demands of the growing world population. This would be inclusive of both aquaculture and fisheries. South Asia, currently, is the biggest contributor to the global food basket, mostly through fisheries. Of which, the Bay of Bengal fisheries contributes to 80 percent of marine fish production. In India, 15 million people are employed in the fishing sector (inland and marine) and with 6.3 percent of the world's fish production, it ranks second as of 2015-16, amounting to a whopping 10 billion INR (G20, T20, Sridhar). The total amount of fish consumed increased by 122 percent from 1990 to 2018. Food fish consumption increased from 9.0 kilograms (live weight equivalent) per person in 1961 to 20.3 kilograms per person in 2017. According to predictions, India's fisheries CAGR would be 24.6 percent from 2016 to 2030.

II. Desalination

Usage of sea water can also be considered in order to ensure continued access to fresh water. The continued seawater intrusion in the coastal aquifers of India along with the declining underground water reserves has led to a shortage of drinking water in a lot of coastal areas and states. States like Tamil Nadu, Kerala and Andhra are already suffering with multiple villages and locations facing acute shortage of drinking water, Chennai being a prime example.

Globally, many countries are looking at appropriate desalination as a source of freshwater. The Hexa Research of 2017 predicts that by 2025, the global water desalination market worth would grow up to USD 26.81 billion. Currently, India has 9 desalination plants (3 in the UT of Lakshadweep, 4 in TN, 1 in GJ and 1 in KA). However, it is highly costly and the process involves removing salt from seawater, this salt then needs to be disposed off. The process requires chemicals like chlorine while processing and the brine which is then left behind if disposed into the sea/oceans would be dangerous for the marine ecology.

III. Oceanography and Marine Exploration

India was one of the first countries to establish a Department of Ocean Development in 1981, which now constitutes the Ministry of Earth Science (MoES). India has made significant progress in the field of oceanography and marine exploration, with initiatives such as the "Deep Ocean Mission" and "Oceanography from space." These programs utilise satellites to collect data on various oceanographic features for scientific analysis. The Ministry of Earth Sciences (MoES) has also joined the United Nations' "Clean Seas Programme" to reduce marine litter and plastic pollution, aligning with SDG-14. Furthermore, MoES has signed contracts with the International Seabed Authority (ISBA) for deep ocean exploration of minerals in the Indian Ocean. To fully benefit from the growth potential in these sectors, India needs to develop a sustainable policy for both upstream and downstream activities.

IV. Telecommunication

Additionally, the oceans also play a crucial role in global telecommunications, due to underwater cables, around 97 percent of the communication being dependent on it. Currently in India, there are 17 submarine cables terminating at 14 cable landing stations in five cities (Mumbai, Chennai, Cochin, Tuticorin, and Trivandrum). These cables have a capacity of 124 Tbps, with 84 Tbps being used. Tata Communications, Bharti Airtel, Reliance Jio, Global Cloud eXchange, and other companies own the existing cable landing stations. Tata Communications and Mumbai have played a significant role in India's global connectivity, but new cables and landing stations are being introduced in other coastal cities.

India has a unique opportunity to become the leading hub for trusted connectivity in the Indian Ocean and beyond. With its demographic advantage and geographic position, India has the potential to be a leading data hub. It has a young and rapidly growing digital market, a strong tech industry, and is at the center of the fastest broadband expansion region. Many cables connecting Africa, Asia, and Europe pass through India. This positioning is crucial for India's goal of becoming a $10 trillion economy by 2035 and benefits the Global South and the rules-based order.

V. Trade

A significant amount of global trade (approximately 80 percent) takes place through marine transport. India has 217 non-major ports and 12 major ports, which handles on an average 1400 million tonnes of cargo every year. As of 2022, India's shipping included 1503 ships. India's share in global exports has increased from 0.8% in 2003 to 1.8% in 2021. To sustain foreign trade and improve competitiveness, adequate infrastructure in terms of ports, ships, and maritime services is needed. Additionally, India had around 45 shipyards in the late seventies, and currently has 33 shipbuilding and ship repairing

companies. Shipbuilding and ship repair activities are projected to grow due to rising cargo traffic. There are a total of 38 dry-docks for ship repairs in India, operated by both public and private sectors, with some major ports lacking dry-dock facilities. Maritime India Vision 2030 aims to make India's shipbuilding industry competitive, reaching high volumes by 2025 and becoming one of the top 10 shipbuilding nations.

VI. Tourism

Furthermore, South Asia has benefited greatly from the coastal and maritime tourism industry, which accounts for 5% of global GDP and is predicted to create jobs for about 8.5 million people by 2030 (7 million were employed in 2010). Understanding the potential contribution that tourism can create, the Indian government is dedicated to further developing tourism along the Indian coastline. It is also deeply invested in the development of infrastructure lacking to promote sea arrivals and cruise tourism to attain around 1.2 million tourists by 2030-31.

While this list isn't exhaustive, like other coastal economies, India is also active in other components such as oil and gas, mining, waste management, sea surveillance, etc. Thus, a proper planning is required when it comes to blue economy and marine resources as simply including sustainability as a part of the definition isn't a way towards ensuring it. Proper knowledge of the resources, the processes involved in developing/processing them, a proper and extensive cost benefit analysis while keeping the marine ecosystem as a variable is necessary. The section below looks at how India is looking at blue Economy, how the policy framework is being proposed in India to ensure safety and economic growth is being framed and what the new UN treaty further asks of nation states to explore.

Ambit of Governance- India Blue Economy Framework

As elaborated in the section above, blue economy can be observed as an umbrella encompassing a wide variety of sectors and domains. Given the scope and coverage of marine ecosystems, there is still a lot yet to be explored.

In February 2019, the Government of India highlighted the Blue Economy as one of the ten core dimensions of growth in its Vision of New India by 2030. Emphasising the need for a coherent policy integrating different sectors, the vision aims to improve the lives of coastal communities and accelerate development and employment.

The draft policy framework on "India's Blue Economy" as proposed by the Economic Advisory Council to the Prime Minister (2020) aims to enhance sustainable economic growth in the marine sector. It focuses on efficient and sustainable utilization of ocean resources, while aligning with the UN Sustainable Development Goals. The key components include evaluation and monitoring, guidelines and directives, seamless governance structure, an apex body, integration of ocean-related capabilities, and focus on research and development. The framework seeks to unlock economic growth and welfare through the blue economy, emphasising sustainability and socio-economic welfare.

The framework places emphasis on monitoring and evaluation of the Blue Economy schemes and projects, to ensure timely implementation and achievement of targets. It underlines the guidelines and directives that promote the policy objectives -

inclusive of international cooperation, capacity building, tariff setting, subsidy negotiations and accompanying regulatory issues. By recognising the need for a seamless governance structure, it aims to coordinate across ministries, state governments, and stakeholders, including industry, research organisations, and policy advocacy groups. It proposes the establishment of the National Blue Economy Council (NBEC) as the apex body. The NBEC would integrate the planning process between various stakeholders at the central, state, and local government levels. It would also include representatives from industry, research organisations, and policy advocacy groups.

The draft policy framework highlights the importance of research and development in the coastal and deep-sea mining, new and renewable offshore energy sectors. It calls for the development of a framework to support research and development activities in these areas. Overall, the proposed policy framework seeks to unlock the potential of economic growth and welfare through the Blue Economy. It emphasises sustainability, socio-economic welfare, and coordination among stakeholders to achieve the desired outcomes. It acknowledges the significance of blue industry and blue trade in driving economic growth and welfare in the Blue Economy. It emphasises the need to integrate these concepts into the broader policy framework to promote sustainable and inclusive economic development in the ocean and marine sectors.

Way forward

Based on the understanding that our land usage has reached a point that development is constantly under threat, nations have now turned to seas and oceans as a future avenue for all the growth, giving rise to the concept of blue economy. There is no standard definition of blue economy, however, it can be characterised as the culmination of: [i] sustainable usage of marine resources, [ii] ensuring well being and rights of people and, [iii] balancing human centric development and protection of marine ecosystems. Having a structured definition is imperative in devising both national and international governance and policy frameworks. Seeing how there is now an increased economic and governance focus for the management of marine resources while fostering security accordingly. Similarly, India is on the same path. Its new policy framework inclines towards the same.

Both the agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) as well as the G20 forum declarations such as, the Osaka Leaders' Declaration of 2019, The Riyadh Leaders' Declaration of 2020, the Rome Declaration of 2021, and the G20 Leaders' Declaration of 2022, reaffirm the conservation and sustainable management of marine resources. These declarations stress the importance of international cooperation and public-private partnerships in achieving these goals, while emphasising the need for innovative solutions to address challenges in ocean governance and the blue economy. They recognize the economic significance of the blue economy and the need for sustainable development in the maritime sector. They also highlighted the importance of effective governance of the high seas, including the development of a new international legally binding instrument under the United Nations Convention on the Law of the Sea (UNCLOS).

The BBNJ treaty additionally focuses on marine biological diversity in areas beyond

national jurisdiction and addresses challenges stemming from climate change, pollution, and unsustainable utilisation of resources. It recognises the rights of indigenous peoples and local communities and underscores their involvement in marine resource conservation while emphasising capacity-building and technology transfer for developing states. The agreement also establishes rules for the equitable sharing of benefits arising out of product development from marine genetic resource, advocates for area-based management tools like marine protected areas and establishes mechanisms for financial assistance. While monitoring and compliance are overseen by the Implementation and Compliance Committee.

In terms of its connectivity and rich resource banks, the Indian Ocean region has been pivotal for global trade for centuries now. Given India's unique positioning, in terms of its coastline along with its global standing, it needs to devise and enact concerted efforts to draw this potential into reality. India has made progress in the domestic policy framework, but needs definitive guidelines to align with the global and regional guidelines and efforts. India during its G20 presidency has pushed for higher focus to be placed on addressing the issue of marine litter to promote blue economy, conservation and restoration of the coastal and marine ecosystems for promoting healthy oceans and integration of marine spatial planning. Additionally, in the 3rd Global Maritime India Summit 2023, India announced the "Amrit Kaal Vision 2047" which outlays the long term blueprint for Indian Maritime blue economy and has shown its commitment to "blue growth" by promising INR 23,000+ crores while dedicating 300+ MoUs for national and global partnerships in the sector.

While positive actions have been undertaken, further policy reforms are required with sustainability being the key driver, further capacity strengthening is also called for. Different commercial and financial models and sources can be brought together to create a blue financing model suitable for India. India can additionally consider working with Bangladesh to explore benefit sharing in the Bay of Bengal. Actions need to be undertaken in cases such as overfishing and climate change. Reduction of waste, an improvement in the fish value chains and creation of state of art technologies with increased observation of the marine bodies and technical expertise could be considered to push for safeguarding.

As economies around oceans become increasingly mainstream and part of the global discourse on development, our agenda on ocean governance should also evolve to accommodate emerging gaps and opportunities in this sphere. This provides avenues for countries and specifically India with its long coastline and extensive marine resources, to incorporate innovative governance mechanisms for sustainable management and utilisation of 'blue' resources. The blue economy is not just an avenue for future growth but also a way forward to shape geopolitical relationships, strengthen research and development and also fulfil SDGs. In regards to that, the paper briefly reviews the landscape of governance, existing stand of India and future pathways.

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