

India and the Indo-Pacific: Harnessing the Blue Economy Potential

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Abstract

An emerging region of geostrategic importance, the Indo-Pacific is driven by competing interests of major powers, each with its individual set of geopolitical and geoeconomic ambitions. The geoeconomics will be subject to an emerging politics over resources like rare earth metals, hydrocarbon mining, fisheries, trade and commerce through regional chokepoints, infrastructure build-up for ports and tourism, etc. In the coming decades, such a geoeconomic tussle amongst the littoral countries of the Indo-Pacific will be dominated by strategic competition in the region's blue economy and a quest for maritime security. It is postulated by several international organisations that a healthy ocean can help integrate 'economics with environmental sustainability', thereby supporting productive ecosystems. For a healthy and sustainable maritime economy, environmental concerns of overfishing, marine pollution, coral bleaching, acidification and other concerns need to be managed by littoral nations putting aside their geopolitical tensions. The Indian Ocean Region (IOR) presents a distinctive opportunity to develop a Blue Economy Framework aiming for blue growth, through the three pillars of security, sustainability and business profitability.

A sustainable and resilient blue economy in the Indo-Pacific will not only take care of geoeconomic interests and environmental concerns but also provide an accessible opportunity for littoral states in the region to collaborate in a multilateral setting. India has undertaken several blue economy initiatives like the Draft National Policy Framework on Blue Economy, Indo-Pacific Oceans Initiative, SAGAR doctrine, SAGARMALA Programme, and the Indian Ocean Rim Association, etc. All these initiatives belong to the larger umbrella of multilateral and minilateral cooperation in the Indo-Pacific region for maritime connectivity and economic growth. Major components of such schemes are maritime security and a sustainable blue economy. However, many challenges remain like lack of blue-green infrastructure, climate change, rising geostrategic competition in the Indo-Pacific due to US-China rivalry and regional tensions amidst China, Japan, India, Australia and others, reduced maritime security due to piracy, and resource competition between great powers. India needs to channelise the growing blue economy initiatives—capitalizing on both existing ones as well as creating new fora to build regional and multilateral consensus on maritime cooperation, security and stability over the seas, freedom of navigation, and preservation of marine resources.

KEYWORDS

Indo-Pacific, Blue Economy, Geoeconomics, Maritime security, Sustainability, blue growth

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Introduction

A new archetype for development of marine resources and coastal management is the concept of blue economy—crucial field of academic scrutiny encompassing the economic activities depending on the seas. It is postulated that a healthy ocean can help integrate “economics with environmental sustainability”, thereby supporting productive ecosystems (Attri and Muller, 25). There are multiple and overlapping definitions of Blue Economy (BE). The World Bank emphasises the notion of “sustainable use of ocean resources”; the Organisation for Economic Cooperation and Development (OECD) defines the ocean economy as the “sum of economic activities of ocean-based industries combined with the resources supplied by marine ecosystems”; and the World Economic Forum also relates the importance of a sustainable blue economy with blue finance to achieve Agenda 2030 of the Sustainable Development Goals (SDG), specifically Goal 14 “Life Under Water”. Clearly, the potential for blue economy creates plausible zones for strategic competition between nation-states over resources like hydrocarbons, rare earth metals, fisheries, port infrastructure and other ocean resources for food, energy and tourism. However, across the Asian and African littorals, oceans and marine resources should not be an arena of confrontation between nations, but they must serve mankind through “blue growth”, thereby generating economic growth and multilateral cooperation for the global commons. Blue growth entails the long-term strategy to aid sustainable use of marine and maritime sectors as a whole.

The Indian Ocean Region (IOR) presents a distinctive opportunity to develop a Blue Economy aiming for blue growth, through three pillars of security, sustainability and business profitability. The "Indo-Pacific" as a geopolitical concept has grown in importance in the 21st century in terms of politics, strategy, and economy. The "Pivot to Asia" outlook by the U.S. is required due to the complex interplay of interstate relations as a result of transfer of power from the west to the east (the geopolitical centre shifting from Eurocentric politics to a new Asian Century), the emergence of China, India, and other Asian nations that have shown outstanding economic growth and diplomatic

influence in world affairs. Also, with the surge in China's expansionist foreign and economic policies (the Belt and Road Initiative and China's Wolf-warrior diplomatic tactics); the search for major players, for a balance of power, in the Indo-Pacific has also accelerated.

India requires a well-thought-out Indo-Pacific strategy to successfully manage the competitive and contested Indian Ocean Region (IOR) amidst the Sino-India rivalry with the Chinese 'String of pearls' strategy (as propounded by the US firm Booz Allen Hamilton in 2005) of building up naval bases in the IOR encircling India. This is fundamental to capitalize on economic opportunity while maintaining maritime security in the region. In this context, it is necessary for India to leverage the blue economy's potential as one of the drivers of economic growth in order to increase South Asia's strategic and diplomatic clout in the Indo-Pacific region. It is crucial to build regional consensus on maritime security and cooperation, but it also depends on maintaining stability and security on and over the seas, freedom of navigation, unhindered legal commerce, protection and maintenance of marine resources, and a sustainable and responsible fishery framework.

The Indo-Pacific and India

The Indo-Pacific covers diverse sub-regions comprising of South Asia, Southeast Asia and the littoral countries of the Indian Ocean. The vast Indo-Pacific region consists of at least 38 countries, is home to more than 64% of the world's population, shares 44% of the world surface area, and accounts for 62% of the global GDP with more than 50% of global trade traversing its waters (Prabhir). India's definition of the Indo-Pacific region extends from the western coast of North America to the eastern shores of Africa. As part of its advancements in the east under the Look East Policy, now known as the Act East Policy, India has developed its 'foreign and economic policy vision' for the Indo-Pacific region.

A new region of geostrategic significance is coming to the forefront, propelled by the shared interests of several powers, each pursuing its distinctive geopolitical and geo-economic goals. In the coming

decades, politics over resources will be dominated by strategic competition in the region's maritime and blue economy. The current diffused power distribution in a post-pandemic world order is witnessing a constant geopolitical churn amidst US-China rivalry, the Russia-Ukraine war, lack of supply-chain resilience and rising competition over limited resources. Especially since the pandemic, nations are seeking to go beyond unipolar or bipolar dynamics (US and China) of uncertainty and supply chain risks. (Bhaskar)

Former Japanese Prime Minister Shinzo Abe committed his nation to a 'free and open Indo-Pacific' (FOIP) vision in 2016 and former US President Donald Trump reaffirmed the FOIP strategy in 2017, with the goal of "safeguarding freedom for shared prosperity and rule of law". In India and Australia, the Indo-Pacific is basically considered as a prescriptive framing; with the pandemic [and India's border clashes with China in 2020] now clearly coaxing them to be more assertive now. And in the Association of Southeast Asian Nations (ASEAN), it is viewed as an "outlook" with a strong withdrawal from the China containment logic; thus, prefaced on "ASEAN Centrality" and equidistance from the US and China. Likewise, Germany and France have charted their Indo-Pacific strategies stressing middle-power co-operation on issues of climate change and regional governance. Pacific Island states have been most reluctant with the FOIP concept, which clearly demarcates a strategic choice between China and others (Wallis et al.).

Prime Minister Narendra Modi articulated India's Indo-Pacific conception as the SAGAR doctrine — 'Security and Growth for All in the Region', an aspiration that hinges on warranting prosperity for all stakeholder nations, governed by rules with freedom of navigation (Ministry of External Affairs of India). India announced the Indo-Pacific Oceans' Initiative (IPOI) in 2019 at the East Asia Summit in Bangkok to support a rules-based regional architecture built around seven pillars: maritime resources, capacity building and resource sharing, maritime ecology, disaster risk reduction and management, science, technology and academic cooperation, trade, connectivity,

maritime transport and maritime security. IPOI; going beyond traditional security threats and geostrategic concerns; is anchored in India's 'Act East' (focusing on the Eastern Indian Ocean and the Western Pacific) and 'Act West' (emphasizing on the Western Indian Ocean) policies (Saha and Mishra). It also incorporates environmental, economic and technology related challenges in the maritime domain.

India has collaborated with likeminded countries in the region having common goals and shared values — from the Pacific Islands to the archipelagos of the western Indian Ocean and off the eastern coast of Africa to arrangements like the Quadrilateral Security Dialogue (QUAD) with the US, Australia and Japan, the Supply Chain Resilience Initiative (SCRI) with Japan and Australia as partakers, and the India-France-Australia, the India-Indonesia-Australia, and India-Japan-US trilateral networks (Bhaskar). These are all reliable indicators of collaboration, which shall be cemented further in the post-pandemic world. Despite India's emphasis on creating tangible security and strategic alliances in the Indo-Pacific, discussions about the region's economic prospects have, in comparison, received little attention. However, building infrastructure and connectivity for a thriving "blue economy"—which is essential to the country's higher growth trajectory and post-COVID-19 economic recovery—is in line with India's tactical priority of ensuring peace, security, and prosperity in the region (as espoused through IPOI).

The Concept of Blue Economy and its Contours -

In simplistic terms, a Blue Economy is about oceans, water bodies and the resources they hold. A Blue Economy would be the aggregate of economic activities involving marine resources. The term “ocean economy” denotes the “dissociating of socio-economic development from ecological degradation”. Hence, here, “optimisation of natural maritime resources within conservation parameters becomes principal” (Mohanty et al.). Colgan (38) has described the coastal economy as “all economic activity in the coastal region, and is therefore the summation of wages, output and

employment in the region. Part of the coastal economy is the ocean economy, but the coastal economy includes a wider set of economic activities.” While, a marine economy is “horizontally integrated cluster industries which contain sectors like commercial seafood, marine science and technology, marine transportation, coastal tourism and recreation, marine infrastructure meant for a common market for the end products, using common technology or labour force skills” (Georgianna and Amaral).

The Economist Intelligence Unit in 2015 explicated that blue economy is synonymous to “greening of the ocean economy; a shift from the old, “brown” business-as-usual development model where oceans are perceived as a means of free resource extraction and waste dumping”. A sizable portion of India's BE is made up of deep-sea extraction, offshore oil and gas, and fishing. India must take advantage of the vast potential of the ocean's natural resources, which can spur the economic growth of the country.

The majority of the nation's energy and gas are imported via sea routes; by the year 2025, it is expected that this need will grow exponentially. Only 1.5 million of the 2.3 million square kilometres of the EEZ that are accessible to India have been surveyed, and this includes both the Arabian Sea and the Bay of Bengal. According to the Indian Ocean Rim Association (IORA) Charter, although the region is not yet a pivot of Global Value Chains (GVC) oriented trade—the kind that drove the East Asian tigers’ industrial success—trade in parts and components is rising in the Indian Ocean region (Jaishankar).

The central thesis of BE is that switching to a more sustainable economic model, encouraging a variety of developmental activity, such as the production of green energy, supporting ecotourism, fostering sustainable fisheries and transportation, etc., can improve the ecological well-being of coastal ecosystems. Coming to the Indo-Pacific, the region’s governments have struggled to steer the tension between conservation and economics (Singh, 2021); despite a declared commitment to blue

growth. Under the weight of populism, policymakers more frequently try to prioritise growth, which they see as the drive for national development. People who work on social and environmental problems claim that the focus on "blue economic growth" has made it possible for the "usurpation" of public resources for private gain. The goal of this "anti-politics" is to keep social and environmental problems outside of BE's purview. (Barbesgaard).

There are scholars who justify the delinking of growth from the conception of Blue Economy—that is, to aim for 'de-growth' (Ghosh). Those in favour contend that efforts to maintain present rates of economic growth are having a negative impact on the environment. Environmentalists claim that the integrity of ocean systems is being compromised by an obsession with profits, in addition to the way that rapid development has hurt the cause of conservation. The haste "to equate consumerism with modernity" has undermined attempts to close the gap between development and conservation. (Singh).

The Blue Economy is made up of a colossal array of economic activities pertaining to the sustainable development of resources in the oceans, water bodies, coastal regions, and associated rivers in a way that guarantees inclusion, innovation, equity, and modern technology. Small Island Developing States (SIDS), experts, governments, international organizations, and media frequently use the phrase "blue economy," which is more recent and "subtly differentiated from the "ocean economy" in terms of nuance and emphasis." (Bhatia). Blue Economy was declared as a special focus area at the 14th IORA Ministerial Meeting in Perth. Its potential was evaluated for "generating employment, food security, poverty alleviation and for ensuring sustainability in economic models in the Indian Ocean". The conclusion of the first Ministerial Conference on the Blue Economy organised by IORA, held in Mauritius in 2015, called for harnessing maritime resources to promote economic development while maintaining sustainability. The Jakarta Concord and Action Plan (2017-21) led to the creation of the Working Group on Blue Economy. The latest December 2020 IORA Council of

Ministers Meeting, hosted by the UAE, noted the cooperation possibilities in this sector especially related to areas of fishing, shipping, tourism, disaster management and maritime safety and security. The Blue Economy has become a significant theme in recent years, and New Delhi is deeply committed to the success of the IORA (previously known as IOR-ARC).

India's Blue Economy Initiatives in the Indo-Pacific

The Prime Minister combined the security and development aspects in the announcement of the Indo-Pacific Oceans' Initiative (IPOI) and the SAGAR (Security and Growth for All in the Region) concept, which spans the entire Indo-Pacific region. (Gateway House). Support for a suitable framework for the advancement of the blue economy was also pronounced; it was premised on India's ambitious Sagarmala Programme, a USD 120 billion project to upgrade the nation's coastal and maritime infrastructure. This also took into account the security and development aspects of the blue economy, such as connectivity, port-linked industrialization, port modernization, and coastal community development. (Bhatia). Since then, India has taken the initiative to expand its collaboration with South Asian neighbours, ASEAN, BRICS, African partners, Australia, and Japan focussed on Blue Economy. The role of Indian think tanks like Research and Information System for Developing Countries (RIS), Observer Research Foundation (ORF), Vivekananda International Foundation (VIF), National Maritime Foundation (NMF), and Gateway House to boost public awareness about the issues involved in the research on blue economy has been crucial. NITI Aayog undertook a wide-ranging multi-sectoral study of maritime issues together with the Blue Economy.

An illustrative example is the significant role played by the Federation of Indian Chambers of Commerce and Industry (FICCI), a prominent national business chamber, in promoting awareness about the Blue Economy among its extensive corporate membership.. It conducted a number of business meetings in coastal India in recent years and kept in touch with allies abroad to support BE partnerships and projects, including Norway, France, Germany, and the EU (Bhatia). Indian venture

capitalists and social enterprises have independently seized local opportunities, despite the fact that Indian business has not actively developed a company-specific plan for the Blue Economy. For example, in 2017 Aavishkar-Intellicap Group, an Indian-origin, Singapore-based social impact venture fund, completed a USD 2 million investment in a fishing community in Sumbawa Island in the strategically vital Lesser Sunda region of Indonesia (Kripalani).

Business and strategic communities are now cooperating to seriously explore the economic potential (Bhatia). The most recent example of such fruitful deliberations was during October 2020-January 2021 on economic gains out of blue growth, when a series of six dialogue gatherings with the theme ‘Quadrilateral Virtual Series on Blue Economy – India’s Pathway to Sustainable, Secure and Resilient Economy’ were hosted together by National Maritime Foundation (NMF), The Energy and Resources Institute (TERI), FICCI, and Konrad Adenauer Stiftung (KAS), comprising of a huge number of domain experts (Gateway House). A significant venue for advancing various aspects of regional cooperation is the Conclave of IOR's Defence Ministers, which is sponsored by the Ministry of Defence and the Ministry of External Affairs of India. (Bhatia). By raising investments in infrastructure construction, financing and human resource development, ocean governance structures, and other blue growth initiatives, the conventional blue economy sectors of shipping, fisheries and aquaculture, port development, etc., may be utilised to their fullest potential. (Gateway House).

In 2015, when the Sagarmala Program was launched, PM Modi repeated that “investing in the maritime industry is an investment not only in one's own future but also in the future of the earth and future generations” (Prime Minister’s inaugural speech). In January 2021, at the formal inauguration of the Kochi-Mangaluru gas pipeline for the country, he gave a revised perspective on the blue economy and stated, "Blue Economy is going to be an important source of 'Atmanirbhar Bharat'."

The IORA can advance this one-lane of regional cooperation and conservation to advanced levels of multisectoral collaboration through self-reliance and interdependence.

The Indian Ocean is home to major choke points and sea-lanes which are critical to global trade, linking major centres of the international economy in the North Atlantic and Asia-Pacific — 90,000 commercial shipping vessels form the backbone of international goods trade; and about 40% of the world's oil supply travels through strategic choke points of the Indian Ocean, also being a crucial source of mineral and fishing resources (Bhaskar). The blue economy has a 4.1% share in India's GDP, with enormous potential for growth (Prime Minister's speech). In addition, PM Modi compared the ocean economy to the blue chakra (wheel) in the Indian emblem to highlight its importance. By 2025, it is anticipated that the Indian Ocean will contribute about 20% of the world's GDP. (World Economic Forum). India's contribution to the expanding Indian Ocean economy will depend on its ability to manage geopolitical tensions, lower trade and investment barriers, enhanced port quality and logistics, and strengthened regional economic governance.

“ASEAN Centrality” of India's Indo-Pacific vision can consolidate deeper ties between India and the East Asian economies at bilateral and minilateral levels, irrespective of its non-engagement on multilateral platforms like the Regional Comprehensive Economic Partnership (RCEP) or Asia-Pacific Economic Cooperation (APEC) forum (Singh). India and the ASEAN region constitute one-fourth of the global population and their combined GDP has been estimated at over USD 3.8 trillion (Prime Minister's Address at 17th ASEAN Summit). India should think about assuming a determined role of leader in minilateral organisations like the Mekong-Ganga Cooperation and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), both of which include ASEAN member states. The significance of BE, Indo-Pacific, maritime security etc. can also be gauged by the fact that in August 2021, Prime Minister Narendra Modi chaired a debate, themed, ‘Enhancing Maritime Security — A Case for International Cooperation’ (The Hindu). The

UNSC accepted a ‘Presidential [India’s] Statement’ which reiterated that the United Nations Convention on the Law of the Sea (UNCLOS) establishes the legal framework for maritime activities (Prime Minister’s Speech at the UNSC 2021).

PM Modi delineated a five-principle framework for the UNSC debate on Maritime Security in 2021. The first was eliminating barriers to maritime trade along with honouring the rights of the seafarers of other countries. Second, maritime disputes “should be resolved peacefully in accordance with international law”; for example, the way India resolved its boundary dispute with Bangladesh with maturity probably hinting that the same is required in the South China Sea where China has unilaterally enforced its claims over disputed waters and militarised islands. This was extremely crucial for endorsing mutual trust and ensuring global peace and stability. India reaffirmed the Shangri la spirit of a common rules-based order for the region here. The third principle proposed was that countries should come together to tackle maritime threats from natural disasters and non-state actors. India’s role of a net security provider in the IO was pointed out in this context. Fourth, the maritime environment needs to be protected, highlighting pollution from oil spills and plastic waste. And lastly, PM Modi called for responsible maritime connectivity, required to boost maritime trade, with the development of global norms and standards (Prime Minister’s Speech at the UNSC).

Such political and diplomatic attention on maritime security and blue economy highlight the relevance of a sustainable ocean economy in the era of global climate change. From such ‘global to local approaches’, nation-states will be able to enhance resilience of local indigenous communities as well as protect marine resources for inclusive development. However, geopolitical competition in the Indo-Pacific realm for regional and global primacy between major powers will inhibit multilateral cooperation over blue growth initiatives and this becomes the most important challenge for the Blue Economy Vision.

Challenges faced by the Vision of Blue Economy in the Indo-Pacific-

As Admiral Alfred T. Mahan rightly said, “Whoever accomplishes maritime supremacy in the Indian Ocean, would be a major player on the global scene” (Mahan). At the Shangri La Dialogue on 1 June 2018 in Singapore, India reaffirmed its key role in maritime security and cooperation, thus, committing to strengthen ‘the Indo-Pacific Blue Economy’. Much has already been undertaken in shaping the foreign policy, but the economic and environmental policy lags behind. A recent study of blue projects in Africa concluded that even as local governments sought to pursue marine development projects, coastal communities were majorly neglected (Yarwood). Famous examples being the progress of infrastructure-buildup at Kenya’s Lamu port culminated in large-scale destruction of the habitat that the Kenyan government chose, seemingly, to overlook. The governments of Sudan, South Africa, Tanzania, and Mozambique did not include ecological and sociocultural issues in their BE plans either.

The key problem with BE is resources regulation, in particular, of ocean fisheries, wildlife, and seabed resources (Singh). Administrations have allowed fishing communities significant power to exploit fisheries in most of South Asia, the African coast, and the Western Pacific, which has resulted in both licenced and unlicensed fishing. Fish stocks have considerably decreased as a result of states encouraging artisanal fishermen to switch to mechanised fishing. (United Nations Conference on Trade and Development-UNCTAD). In light of such facts, the maritime ecosystem has been harmed by destructive fishing techniques like bottom trawling and seine net fishing. Similarly condemned for its emphasis on "resource abuse, and commercialization of open-access water bodies, and deep-sea fishing," India has also presented a draught fisheries bill. (Singh). Fishers’ unions opposed the draft policy, calling it “production-driven, and based on capital investments”. (Department of Fisheries of India) Marine pollution is another issue impacting the ecology of sensitive areas. Not only do freight and feeder ships' discharges of oil and residue contaminate the environment, but also an enormous amount of synthetic waste made on land is dumped at sea. (Singh). Due to the pandemic, masses of medical waste, particularly face masks, have

been dumped into the ocean. Microplastics released in large quantities into the marine ecosystem are predicted to have negative effects on marine flora and fauna. (Selvakumar et al.).

Ocean governance has been inadequate in significant portions of the eastern and western Indian Ocean littorals, and "South Asia struggles with regulation and ocean finance" (Singh). Marine debris, one of the less talked about issues on the BE agenda, has recently come to light as a worrying problem and it has been made more complex by climate change. The oceans have had to handle the escalating uses from various sources, like the extractive industries, along with acidification, hypoxia, and chemical pollution; according to some estimates, for example, 8 million tonnes of plastic end up in the oceans every year. (United Nations Environment Program). However, the development of ports and resource exploitation remain the primary concerns of Asian states. The centrepiece of New Delhi's BE initiative, the Sagarmala project in India, places more emphasis on building infrastructure than on sustainable growth (Iyer). A recently announced "deep sea mission" appears to be intended to promote deep-sea mining at the expense of marine protection.

Certainly, there are opposing features in the drafting process of the Draft Blue Economy Policy Framework. Such blue laws must, on the one hand, encourage investments in new ocean economic sectors, generating new commercial opportunities, infrastructure, and jobs. On the other hand, BE policies must protect the current marine ecosystems and reduce overfishing, pollution, and habitat destruction. The Maldives serves as a good illustration of this conundrum. The Maldivian government made the decision to invest in high-end beach tourism in 2016, as it started to expand economic possibilities through a "Blue Model," reclaiming land to erect hotels on some of the nation's numerous coral atolls. During this time, there was a serious coral bleaching event brought on by the El Nino phenomenon, which spread warm water across the oceans. (The Guardian). The Maldives government changed its priorities to emphasise environmental protection in response to complaints from local organizations, even managing to save some coral reefs that had been damaged.

The Great Barrier Reef was considered to be an endangered natural site by UNESCO's World Heritage Committee in July 2021. Committee members noted that the Australian government was unable to prevent mass coral bleaching events because of increasing ocean temperatures and global warming (Singh).

The idea of 'Blue Economy' is still an emerging concept, intended at livelihood generation and building resilience against climate change and its affiliated environment challenges, encourages the use of seas for inclusive growth and sustainable development (International Union for Conservation and Nature). Indian Ocean Region's (IOR) contribution to global GDP has substantially risen from the past century; "yet only three IOR countries—i.e., Australia, Singapore and United Arab Emirates—are counted among the top 20 nations with highest per capita Gross National Income" (World Bank). If nations (especially those in the Indo-Pacific) look at the oceans as "shared development spaces", the concepts of "marine economy", "coastal economy" or "blue economy" etc. are at a nascent stage. The need for stronger regional cooperation which enables them to unlock the potential of the blue economy in a more sustainable way is driven by the growing competition among the IOR nations over marine resources for their development.

Due to a lack of ocean literacy, many Asian and African countries have not made investments in a skilled workforce to carry out BE initiatives. Additionally, there is lacklustre technical advancement and innovation in key industries, and infrequent field testing of BE models (Singh). Due to the lack of clarity among states on the overall definition of the Indo-Pacific, the advantages of trade, tariff reduction, and investment models have not been as thoroughly examined and studied. Consequently, the study on statistical models that evaluate the components of "blue growth" is still in its infancy. This is partially explained by the fact that national administrations are still developing their ideas about the Indo-Pacific and related components of the blue economy.

Successes, Limitations and the Road Ahead

The conception of 'Blue Economy Model as a Regenerating Model' and not a recycling one was first pronounced by Gunter Pauli in 2010 (Pauli). It was later deliberated at the United Nations Conference on Sustainable Development, Rio+20 in 2012. Numerous IORA states have pushed for improved BE governance and increased collaboration ever since it was first proposed. For its part, Bangladesh was the first nation to hold a significant conference in 2014 that placed a strong emphasis on a Bay of Bengal partnership for the Blue Economy. As a result of Prime Minister Narendra Modi's SAGAR Doctrine, which focuses on the preservation of shared marine spaces, BE has since taken centre stage in India's strategic vision. Future shipping and transit in the Indian Ocean (IO) will be significantly impacted by China's Belt and Road Initiative's (BRI) component known as the Maritime Silk Road Initiative (MSRI).

Major oil producers in the northwest corner of the Indian Ocean, natural chokepoints like the Strait of Malacca and the Strait of Hormuz, and a sharp rise in piracy near the Horn of Africa (especially Somalia) have all resulted in various combat operations from the US, India, and the EU, with other IOR countries like Seychelles and Bahrain contributing their national ports for the operation (Tapan). The port infrastructure of the Indo-Pacific area varies depending on the region, though. As an illustration, only three ports—Singapore, the United Arab Emirates, and Malaysia's Port Kelang—handle bulk of the cargo in the Indian Ocean (UNCTAD). To maintain the base required for shipping and transportation, investment in port expansion and improvement will continue to be a significant problem; this is where India's SAGARMALA scheme for building maritime infrastructure comes in. Communication, logistics, and supply chain problems brought on by underdeveloped "blue assets" may delay trade and impede trade integration. Additionally, the Sino-Indian rivalry for regional supremacy has prompted both countries to engage in transportation infrastructure projects, but this has also resulted in some regional fragmentation and restricted cross-border cooperation.

Blue Economy has the capacity to be used for deep-sea mining in the Indian Ocean in addition to energy supplies. India recently began a Deep Ocean Mission to search for polymetallic nodules and other resources of this kind because the oceanic crust is a potential source of metals like nickel, cobalt, copper, and manganese. There are still only a few commercial-scale mining operations which is hampered by a number of technical issues, including expensive and complex infrastructure. The proliferation of BE initiatives is obstructed by overfishing, IUU fishing, and other problems, and the majority of environmental organisations are actively campaigning against many potential BE industries. Despite some attempts at international cooperation (such as the Indian Ocean Tuna Commission), the creation of Marine Protected Areas (MPAs), etc., constrained government capabilities, relatively new, understudied industry approaches like aquaculture, etc., and competing interests can impede sustainable "blue growth" (Tapan).

Ecotourism has been embraced as a means of funding conservation studies, safeguarding vulnerable ecosystems, and supporting the development of underdeveloped nations. As a result, many IO SIDS, including the Maldives and Mauritius, have hailed ecotourism as a component of their economic development strategy. However, ecotourism is also becoming unsustainable due to rising marine pollution, overstretched and stressed marine assets and habitats. Calls have been made for promoting a more reinvigorated variety of "sustainable tourism"; albeit with confusion in interpreting both "ecotourism" and "sustainable tourism" as environmentally more viable.

This is not to say that BE success tales have not been documented. SIDS in the Indian Ocean have demonstrated their capacity to use ocean resources sustainably while fostering social inclusion, employment creation, and economic growth, as well as the recovery of ocean ecosystems. For instance, Seychelles successfully negotiated the first-ever debt restructuring for climate resilience and launched a trailblazing sovereign blue bond. (Sustainable Development Goals Hub). A plan to bolster aquaculture, marine biotechnology, and renewable energy while consolidating tourism,

seaports, and fishing industries has also been revealed by Mauritius. But for the overwhelming majority of Indian Ocean and Pacific states, the "Blue Economy" remains an unrealized dream with unrealized potential, necessitating urgent and thorough government attention in addition to maritime security.

Brahma Chellaney warns, “[t]here is a danger that interstate conflict in the IOR in the coming years could be driven by competition not so much over political influence as over scarce resources” (Chellaney). In order to guarantee sustainable administration of marine resources, it is therefore immediately necessary to handle regional stability and the numerous stressors on resources brought on by global warming and environmental degradation. Despite ongoing research, the biodiversity of the Indian Ocean is still largely unknown and this impacts the precision of research models used to guide conservation endeavours, ocean regulation and governance, and circular economy initiatives. Over 40% of the world’s offshore oil comes from the Indian Ocean, and heavy-in-minerals beach sands are currently mined in India, Indonesia, Sri Lanka, South Africa, and Thailand (Keesing). The area also undergoes exploitation from fishing fleets of non-Indian Ocean countries (especially South Korea, Russia, Japan, and Taiwan) adding to the pressure exerted by countries within the region (Wafar et al.). As a result of mangroves being harvested for fish traps, firewood, animal feed, pulp production, and construction material, numerous mangrove habitats have already been destroyed. Additionally, trawling, dredging, and sediment loading are linked to the decline of seagrass habitat. (Wafar et al.). Further research is also required on supplementary threats to biodiversity from various blue economy approaches.

Environmental considerations are also of utmost importance when engaging in certain "blue growth" activities, such as mineral extraction from the seafloor. Although certain guidelines have been published in this area by subject matter experts, there hasn't been much significant research and it's currently unclear on how to reduce the detrimental effects of many such resource exploitation

activities. To practise and promote balanced, sustainable development of "blue economy" activities, collaboration must exist between environmentalists, trade analysts, policy-makers, and the private sector (Tapan). Additionally, because BE and the Indo-Pacific both represent emerging concepts, a more thorough and in-depth analysis is needed to eliminate abstruse and redundant terminologies, and to introduce distinct, defined concepts that will allow for the conducting of research in a more coherent manner.

Only strong social infrastructure (education and health) and economic development in sectors like power, water and transport in the Indo-Pacific region can restore economic growth. India should give special consideration to creating a Ministry of the Blue Economy with an operational institutional framework for seamless coordination and supervision. (Blue Economy Vision 2025). This will bring together under a single umbrella all aspects of a blue economy, including security, connectivity, naval acquisitions, maritime commerce, energy requirements, transportation, fisheries, and marine exploration (Singh).

Conclusion

The principles of BE—protecting the marine environment, promoting marine-led economic development, and enhancing maritime security in all national and regional indicators—are clearly going to have a significant impact on regional foreign policy in the decades to come. Therefore, the concept holds specific significance to the Indo-Pacific since the region is defined by “maritime regionalism”, in quest of similar geopolitical aims. The Indo-Pacific littoral nations are currently united by a variety of bilateral and multilateral mechanisms. However, they have a narrow scope and don’t include every relevant stakeholder. The IORA, for example, is the most exhaustive arrangement that unites the entire area under one forum, comprising 21 member states and numerous global economic and military powers. India, together with the recent two chairs of IORA-Bangladesh and Sri Lanka- should consider holding a comprehensive Regional Conference on the

‘Business Perspectives of the Blue Economy’ to further the vision of inclusive development via the Indian Ocean sustainability.

However, the IOR and the Indo-Pacific region's efforts to handle issues like food security, biodiversity conservation, and ecosystem management are hampered by the lack of cogent governance tools in the current architecture. The varying political, economic, geographic, and cultural characteristics of the region's countries have so far stymied the growth of regional institutions. The community of coastal states will need to work closely with other stakeholders, including the business sector, non-governmental organizations, the scientific community, and local communities, to achieve blue economy objectives. (Roy).

The rising great power rivalry between the United States and China must be monitored in the Indo-Pacific area. Many middle powers like Australia, Japan, the UK and ASEAN nations find themselves in a muddle of geostrategic competition and struggle for a potential balance of power. As a rising power, India needs to supplement its own blue economy initiatives in the larger geoeconomics of the region to facilitate cooperation amidst the ensuing power struggle. As a major Indian Ocean littoral state, India needs to balance both the geopolitics and geoeconomics of the region. In this regard, a sustainable blue economy provides a way forward to preserve security and stability in the turbulent seas of the Indo-Pacific.

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