

# PAKISTAN'S BLUE ECONOMY POTENTIAL, CHALLENGES AND PROSPECTS

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## **Abstract**

*Water and oceans have tremendous value for inhabitation and carry great potential for trade and economic connectivity. The sea-trade has been an ancient activity to build economic power of the state. Pakistan has a coastline of over 1000 km, along with 290,000 sq.km extended Exclusive Economic Zone with abundance of marine, fisheries, mineral, and energy resources that can generate additional revenues. Moreover, Pakistan's geo-oceanic position provides tremendous opportunities of the sea-based activities such as transportation, tourism, shipbuilding, port facilities, and renewable energy. Based on these factors, 2020 was declared as the 'Year of Blue Economy of Pakistan.' Also, there are new strategies being conceived by the great powers to harness the potential of sea-based economy. However, along with opportunities, there are problems too; therefore, this paper endeavors to highlight the challenges and prospects of Blue Economy for Pakistan and gives policy recommendations as a way forward.*

**Keywords:** Blue Economy, Exclusive Economic Zone, Marine Resources, Coastline.

## **Introduction**

**W**ater provides essential commodities to live, serves as means of communications, and works as a possible livelihood. The rise of great civilizations, Egyptian, Babylonian, Mesopotamian, and Indus, were due to their inhabitation on the banks of rivers, Nile, Tigris, Euphrates, and Indus. The Persians established regular routes of communication between three continents;

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Africa, Asia, and Europe to thrive and expand their empire. Discovery of the 'New World' (The American Continent) by Christopher Columbus was through his sea-voyage. Around 70% of the Planet Earth is based on water; oceans, seas, and rivers, and almost 80% of the global trade is based on it through the Sea Lines of Communications (SLOCs). Sea-trade is most ancient, cost-effective, and reliable medium, connecting lands, people, and goods. The Portuguese, Scandinavian, French and Great Britain thrived due to their vast sea-based trade and power-projection. Captain Alfred T. Mahan's sea-based theory of geopolitics helped to highlight the preponderance of sea-power, which augmented French and Great Britain to sway their outreach to Indochina, Africa, and the Indian Sub-continent.

In the contemporary global security environment, the importance of sea-based activities has resurfaced with full scope. The controversy over the Caspian Sea, issues in the South China Sea, insecurity in the Korean Peninsula, the US Indo-Pacific strategy to redesign the Quadrilateral Security Dialogue (QUAD) between Australia, India, Japan and the United States against the Chinese global outreach, Austria, UK and US (AUKUS) to provide nuclear security to Australia, and I2-U2 (India, Israel and UAE-US) formation against Iran. Long ago, India expanded its navy to be converted into a Blue Water Force to expand its outreach into the high seas. The offshore energy reserves, protection/denial of trade routes, and the Non-State Actors piracy/terrorism have emerged as new sea-based security issues. This has compelled states to conduct naval exercises in the high seas individually and collectively to protect maritime activities and secure their coastlines. Pakistan has been part of the sea-borne multilateral naval exercises through biennially AMAN series and commanding the Counter Piracy Combined Maritime Forces CTF-151 multiple times.

Despite of the fact that Pakistan remained sea-blind, its geopolitical position provides it immense opportunity to harness the hidden potential of sea-based resources and activities. However, Pakistan could not fully realize the importance of maritime security and sea-based trade/commerce potential until recently. It was compelled by scarcity of energy resources and economic/financial hardship that necessitated to focus on sea-based activities such as offshore oil/gas feasibility studies, and development of Gwadar port as part of the China Pakistan Economic Corridor (CPEC). This was also reflected in declaring 2020 as the 'Year of Blue Economy of Pakistan.'

Therefore, this paper endeavors to highlight the importance of Blue Economy in the global perspective, analyzes the potential of Pakistan's Blue Economy with its challenges and prospects, and recommends the way forward to tap tremendous opportunities waiting to be harnessed. However, it is not a comprehensive account on the subject but an effort to contribute in the academic literature to start a constructive debate and suggest policy options to the stakeholders for serious deliberations as part of Pakistan's national security policy.

## **Conceptual Framework**

The conceptual innovation is propelled by human needs and quest for new heights. The ever-growing population with increasing demands has created fear of depleted resources and search for new avenues. From 'Green Economy' to 'Blue Economy' has been the outcome of innovative lust, increasing resource demand and search for new sources. Though the utilization of oceanic resources has been there since ages, especially in the hardcore geopolitical sphere, but the use of 'Blue Resources' for alternate economic and sustainable growth has been relatively a new phenomenon.

In the academic parlance, Gunter Paul is considered to be the pioneer in introducing the concept of Blue Economy. According to him "the shift of society from scarcity to abundance with everything available in the oceans and seas of the world. It is the regeneration of ecosystem in a logic of abundance and autonomy. Drawing inspiration from the nature in order to take what is necessary and to function symbiosis with it."<sup>1</sup> Later, this concept was transformed into a concrete policy objective during the United Nations Conference on Sustainable Development in 2012 at Rio de Janeiro, which emphasized "Blue Economy to be evolved into a viable and sustained economic model."<sup>2</sup> Majority of the UN 2030 Agenda for Sustainable Development Goals (SDG) relates to the oceanic resource utilization and SDG-14 (Life below Water) states to "Conserve and sustainable use of seas, oceans and marine resources for sustainable development." Subsequently, the United Nations Department for Economic and Social Affairs (UNDESA) expert group continued to work towards promoting the sustainable development through oceans and seas. Also, the Global Partnership for Oceans and Global Ocean Commission promoted to the utilization of oceans and sea resources.

The multiple institutional work on the 'Blue Resources' resulted into its adoption by other global organizations and regional entities. Many states realized the importance of 'Blue Economy Model' as an important avenue for sustainable

economic growth, resource utilization, and job creation. However, the over-emphasized awareness of unexplored oceanic resources and hidden treasures manifest cooperation, competition, and rivalries. The national strategies, regional partnerships and global frameworks are geared towards access and denial of sea-based resources.

Prior to the 'Blue Economy Model' another innovative academic/policy perspective was introduced by Chan Kim and Renee Mauborgne as 'Blue Ocean Strategy.'<sup>3</sup> It emphasized on the "simultaneous pursuit of differentiation and low cost to open up a new market space and create new demand. It is about creating and capturing new uncontested market space. Thereby making the competition irrelevant." They also coined the terms 'Blue Oceans' and 'Red Oceans' to differentiate between the exiting market spaces and unexplored market spaces. "Red oceans are all the industries in existence today, the known market spaces, where industry boundaries defined, and companies try to outperform their rivals to grab a greater share of the existing market. Cutthroat competition turns the ocean bloody red." Whereas, "Blue oceans denotes all the industries not in existence today, the unknown market space, unexplored and untainted by competition. Like the 'blue' ocean, it is vast, deep, and powerful, in terms of opportunity and profitable growth." Though this concept is purely relevant to the economic growth and market strategies, but it can be conjoined with Blue Economy as an uncontested market space where competition and rivalries can be done away with the utilization of sea resources within the national maritime and coastal boundaries.

However, for the present study, the concept of 'Blue Economy' is being applied, which denotes to the utilization of all oceanic resources to generate economic activity for the sustained growth. The United Nations Secretary General of the Ocean Conference, Wu Hongbo states that "A Blue Economy is a long-term strategy aimed at supporting sustainable growth through ocean-related sectors and activities, while improving the human well-being and social equity and preserving the environment."<sup>4</sup> The World Bank defines it as "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs, while preserving the health of ocean ecosystem."<sup>5</sup> According to Masanori Kobayashi of Tokyo Foundation for Policy Research, "In its broadest sense, the blue economy... is considered synonymous with the ocean economy, which encompasses all the wide-ranging economic activity tied directly to the oceans, including fisheries and marine products, shipping, seaside tourism, marine sports and recreation,

desalination, seabed mining, and offshore wind power.”<sup>6</sup> Therefore, Blue Economy as a concept and policy is the utilization of oceanic resources for the benefit of human-being without harming the oceanic ecology. The vast sea-resources provide equal opportunity to all the states; Island States, Littoral States and Land-locked States.

## **Global Perspective**

Masanori Kobayashi of Tokyo Foundation for Policy Research states that “We human-beings dwell on land. As a result, many people are apt to forget that the oceans make up 72% of the earth’s surface and 95% of the biosphere (the space occupied by living organism). Of the 193 UN member states, only 43 are landlocked; the other 150 face or connect with the sea. According to the UN Atlas of the Oceans, 44% of the world’s population lives within 150 kilometers of the coast. Millions rely directly on the ocean for their livelihood, and all of earth’s myriad inhabitant depend on it for life.”<sup>7</sup> The United Nations has declared 2021-2030 as the Decade of Ocean Science for Sustainable Development that channelizes efforts towards a more resilient future through global capacity building and innovative Blue Economy solutions.<sup>8</sup>

In 2010, the global oceanic activities value was around \$1.5 trillion, and by 2030 the value would reach to \$3 trillion.<sup>9</sup> It is estimated that the Blue Economy can generate around \$24 trillion in financial activities along with new resources and jobs.<sup>10</sup> Many states around the world have started utilizing the Blue Economy model for their sustained growth. The largest utilizers of this model are Japan, South Korea, Singapore, and ASEAN, who depend mostly on their offshore resources. Japan is the 3<sup>rd</sup> largest economy with about \$5 trillion value, South Korea is the 10<sup>th</sup> largest economy with \$1.63 trillion value,<sup>11</sup> and the ASEAN bloc accounts for \$2.5 trillion value,<sup>12</sup> could be the 5<sup>th</sup> largest economy in the world.<sup>13</sup> “India’s Blue Economy supports 95% of the country’s business through transportation and contributes an estimated 4% of its Gross Domestic Product (GDP).”<sup>14</sup>

The utilization of Blue Economy resources by states around Pakistan are well above 50% mark; India 62%, Bangladesh 60%, Sri Lanka 53%, and Iran 52%, whereas Pakistan’s utilization is just 37% of its potential. Pakistan is mainly focused on fisheries which generates only \$450 million, whereas actual potential of Blue Economy is estimated to be around \$100 billion.<sup>15</sup> China, India, Bangladesh and Iran have chalked out long-term vision to utilize the oceanic resources.

Therefore, every state is conceiving plans, formulating strategies, and making efforts to utilize the untapped oceanic resources for their sustained economic growth. The world organizations, UN & World Bank, regional blocs, EU & ASEAN, and global partnerships are geared towards harnessing the benefits of Blue Economy.<sup>16</sup>

## **Pakistan's Blue Economy Potential**

Pakistan is blessed with around 1000 km of coastal area with seaports at Karachi, Bin Qasim, Gwadar and three other ports in the making such as Ormara, Pasni and Jiwani. It has 240,000 sq.km of EEZ with an additional 50,000 sq.km continental shelf, which gives it access to the global trade & energy supply-lines that accounts for millions of barrels of global oil supplies and is adjacent to the strategic Strait of Hormoz in the Persian Gulf that has largest proven oil reserves. The sheer geo-oceanic placement of Pakistan provides immense opportunity to be part of regional and global partnership in the untapped and unexplored Blue Economy, besides possessing marine, offshore and deep-water resources. Pakistan's 95% trade and 100% oil supplies are carried out through sea-routes to the tune of about \$74 billion, which is more than 30% of the total GDP.<sup>17</sup> Therefore, Pakistan is totally dependent on sea to have its economic/trade activities. Pakistan has great potential in fisheries, offshore energy, mineral deposits, coastal tourism, shipbuilding/breaking, and maintenance/repairs, which can generate billions of dollars as revenues besides generating related economic/industrial activities with tremendous job opportunities.

It is estimated that Pakistan has a potential of \$3 billion from the fish industry, whereas only \$400-450 million is earned with provision of 1.8 million jobs. There is estimated 16 billion barrels of oil/gas in the maritime area of Pakistan, its continental shelf possesses oil and gas worth \$14 billion, and mineral resources in the deep-sea are estimated to be worth around \$4-5 billion. Pakistan's coastal tourism earns just \$50,000, whereas its actual potential is \$4.5 billion annually. Moreover, the shipbuilding, ship-breaking and maintenance/repairs can generate billions of dollars with millions of additional jobs to the locals.<sup>18</sup> On the face of it, the above hidden potential is poised to add billions of dollars to the country's GDP to boost its international economic standing and provision of much needed economic stability.<sup>19</sup> The development of coastal area infrastructure with refineries, resorts and recreational facilities, and offshore infrastructure development such as docking births, maintenance/repair facilities, and exploration can add huge financial revenues for the overall national economic

stability. The following table provides an estimate of Pakistan's Blue Economy potential:

### Potential verses Actual Utilization

Activity	Potential	Actual Utilization
Coastal Tourism	\$4.5 billion	\$0.05 million
Fisheries	\$3 billion	\$400-450 million
Seafood Exports	\$2 billion	\$450 million
Oil and Gas	\$14 billion	Nil
Minerals	\$4-5 billion	Nil
Shipbreaking	\$3 billion	\$100 million
Shipbuilding	Data not available	?
Maintenance/Repairs	Data not available	?
Jobs	5 million	1.8 million
Renewable Energy	No survey done	Nil
Coastal Development	No survey done	Nil
Offshore Development	No survey done	Nil

**Source:** Prepared by the Author from diverse sources. Data may vary due to non-availability of official data.

### Challenges

The first challenge is the sea-blindness due to over-reliance on land-routes, industrial setups on main highways and human activities in the mega-cities. Except for fisheries, the common Pakistani and the decision-maker alike are unaware of the enormous potential laying untapped in the open seas in the south of Pakistan. This neglect has resulted in a strategic void for Pakistan's national security, costing in revenues and strategic outreach through open seas. It is important to highlight that even the much-touted National Security Policy of Pakistan (2021-2025) could not grasp the blue potential of the country whereas its entire emphasis was on economic security. This important policy document did not mention the potential of Blue Economy as a crucial factor in the enhancement of country's economic progression and stability in the future scenario. This lack of comprehension could not convert the Blue Economy as an important priority area in the strategic outlook of the country. This also resulted into the private sector's lack of interest for investment and financial input into the Blue Economy.

The other major issue is lack of projection by the concerned ministry, media and the related institutions and organizations. This has affected 99% Pakistanis perception about sea, sea-related recreational/tourist activities, and its economic potential. 'Blue' was never considered as an attractive area to be promoted for tourism and job market. The government red-tapism led to the undue delays in formulation, approval, and implementation of sea-related policies. The National Maritime Policy got approved in 2019 after the gap of 15 years, and it took many efforts and persuasion to get the revised Merchant Policy approved by the government.

Moreover, even the existing resources are under-utilized due to variety of factors. There are capacity-building issues such as primitive means of harvest and catchment of fisheries and non-availability of deep-sea fishing fleet. For exploration of sea-bed resources, the National Institute of Oceanography (NIO) lacks modern equipment for which outside technical support is required. There is also lack of trained and skilled human resource, which can be utilized to enhance the production and development. Shipbreaking, used to be Pakistan's main source-earner in the region, but use of primitive methods, lack of international standards certification and non-compliance of Hong Kong International Conventions restrict the international cooperation and investment opportunities in this sector. Below capacity of handling at ports due to the lack of deep ports, equipment and infrastructure are other challenges hampering the true utilization. Gwadar port is also under-utilized, it can house 200,000 Dead Weight Capacity (DWC) vessels with around 88 births, whereas it is working only on 50,000 DWC with 3 births. A country dependent on sea-routes for its trade and energy supplies has only 11 vessels and it has to pay \$5 billion annually to foreign vessels as freight charges. Whereas adjoining countries such as India have 800 plus, Bangladesh 300 plus, Iran 100, and Sri Lanka 40 vessels to harness the sea-trade potential of their blue resources. The other important challenges hampering the progression of Blue Economy are internal security situation, political and economic instabilities, and lack of official/authentic data to promote the socio-economic spin-off benefits from the Blue Economy.

However, these challenges are not unsurmountable, mostly these are due to the non-priority to Blue Economy as part of the national policy. The new policy outlook, regional economic connectivity and domestic resource compulsion have led to the alternate perspectives and avenues, where Blue Economy is slowly and



gradually trying to find its due place in the strategic calculations with bright prospects for the country's sustained economic growth.

## **Prospects**

An enterprise with an estimated \$100 billion untapped resources augurs bright prospects for Pakistan and its weak economy. Pakistan's Blue Economy can open millions of jobs, socio-economic activities, regional trade, and infrastructural development of coastal areas to provide great upward strides and economic boom. The desired policies, right direction and prioritizing Blue Economy with effective implementations can prove advantageous in leading Pakistan towards economic progression and stability.

The development of Gwadar port on fast-track with full capacity is key to the high prospects of Pakistan's harnessing the unexplored and hidden treasures of oceanic resources. The geo-oceanic setting of Gwadar is paramount for Pakistan to become an important littoral state in the Asia-Pacific region. The full capacity port has the potential of repairs and maintenance for local and foreign vessels, enhanced dock facilities can open the regional trade connectivity from China/Central Asia into the Persian Gulf and the ASEAN region, and it can open huge employment and infrastructural avenues for the local population. Moreover, Gwadar is the gateway to China's Belt and Road Initiative (BRI) with estimated \$3.5 trillion investment and its flagship project, China Pakistan Economic Corridor (CPEC), are dependent on the full operationalization of Gwadar port. The BRI project is designed to pass through from Gwadar to Port of Oman, to Port of Aden and into Djibouti in Africa, in which Gwadar plays the key role. It would open Pakistan's oceanic outreach into Middle East and Africa. The added prospect is the spinoff benefit from the 25-year Sino-Iran deal of \$600 billion value that could pass through Gwadar into Iran. It has another avenue to create regional trade/economic connectivity into Iran and the GCC states and beyond.

The existing facilities such as shipbuilding, shipbreaking, fisheries, and sea-trade are drastically underutilized. It is believed that without much effort these facilities can be upgraded with full utilization to constitute important prospects for the Blue Economy of Pakistan. The other unexplored avenues such as recreational/tourism, coastal development, offshore exploration, and alternate energy sources also provide bright prospects for the Blue Economy in the long term.

## Way Forward

No state and its institutions can work in a vacuum; direction, planning, guidance and will is essential components to effective utilization of its untapped resources. In order to harness the true potential of Pakistan's Blue Economy, sustained policies with effective implementation are required that should be studded with requisite investment form both public and private sectors. This also requires organizational reform and regulatory mechanism to transform the full utilization of existing resources. Purchase of modern equipment, new vessels, and human resource development specific to the Blue Economy are the much-needed steps to face the challenges for keeping abreast with international standards. And above all, it is high time to have an all-inclusive Integrated Maritime Policy, which gives Blue Economy a central place.

Therefore, based on the above discussion/analysis, this paper suggests following recommendations to the stockholders for serious deliberations and conversion into specific policy formulation.

- Blue Economy should be one of the top priorities in the Revised National Security Policy document, which lays emphasis on economic security.
- Establishment of an autonomous Blue Economy Authority to research, propagate, plan, formulate policies, with stakeholders, and create investment avenues for effective utilization of blue potentials.
- A seasoned, well-versed, and visionary single decision-maker to be the head of Blue Economy Authority with team of experts, practitioners, and business entrepreneurs.
- A specialized desk on Blue Economy in the Ministry of Defence to incorporate sea-related input in the National Security Policy.
- Formulation of an Integrated Maritime Policy with innovative perspective and futuristic needs.
- Top priority to the fast-track development of Gwadar Port with full capacity.
- Adoption and implementation of all international conventions related to sea, existing facilities, and Blue Economy.
- Initiation of feasibility studies and surveys to develop infrastructure, recreational facilities and industrial zones in the coastal belt and offshore areas.
- Public-private partnerships with business-friendly environment to invest in Blue Economy projects.

- Training of skilled manpower with international standards.
- Purchase of modern equipment, new vessels, and expansion of existing facilities such as shipbuilding, shipbreaking, and fisheries catchment.
- Public awareness campaign by well-versed persons/institutions through media, educational institutions, and visits to the sea-related organizations.
- Establishing data bank and starting academic research at the Higher Educational Institutions for innovative ideas and policy inputs.
- Making existing think-tanks and institutions with Blue Economy specific activities more dynamic and policy-oriented research.
- All think-tanks should have one maritime/Blue Economy desk having collaboration with international think-tanks and organizations working on Maritime/Blue Economy.

## **Conclusion**

Ever increasing demands and scarcity of resources have led to search for alternate sources to meet the new challenges. This search has moved from green sources to blue sources for a sustained economy. Blue Economy is the new buzzword and an alternate oceanic source in the coastal areas and high seas of the littoral states without competition or confrontation to harness the untapped treasures. More and more states are switching to the Blue Economy Model for a sustained economic growth. From mere \$1.5 trillion, the Blue Economic activity has a potential to reach \$24 trillion world-over.

Pakistan is blessed with strategic oceanic setting with important SLOCs around it and passage of global sea-trade. Though Pakistan remained sea-blind and its policy-makers unaware of the hidden blue resources but in the last few years owing to the resource crunch and search for new avenues, the Blue Economy potential has started to make ripples in the academic parlance, think-tank debates and policy corridors. It is believed that Pakistan has about \$100 billion oceanic resources in the shape of fisheries, trade, shipbuilding, shipbreaking, minerals, oil/gas, tourism, employment, and blue energy. However, the country lacks an innovative roadmap, required expertise, lack of equipment, desired infrastructure and international recognition resulting into under-utilized attempt. With a proactive approach and sustained efforts, Pakistan can sail through these challenges to fully utilize the potential of Blue Economy.

## References

- <sup>1</sup> Gunter Pauli, *The Blue Economy: 10 Years, 100 Innovations and 100 Million Jobs*, Boulder, Colorado: Paradigm Publishers, 2014.
- <sup>2</sup> “United Nations Conference on Sustainable Development Concludes with World Leaders Renewing Commitments to Save Planet” UN Press Release, June 22, 2012, available at [www.press.un.org](http://www.press.un.org)
- <sup>3</sup> Chan Kim and Renee Mauborgne, *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*, Cambridge, Mass.: Harvard Business Review Press, 2004.
- <sup>4</sup> “Exploring the potential of blue economy” Press Release of United Nations Department of Economic and Social Affairs, June 6, 2017, available at [www.un.org](http://www.un.org)
- <sup>5</sup> “What is Blue Economy” *The World Bank Report*, available at [www.worldbank.org](http://www.worldbank.org) accessed on July 11, 2022.
- <sup>6</sup> Masanori Kobayashi, “Building the Blue Economy-A Global Overview” *The Tokyo Foundation for Policy Research*, August 30, 2021.
- <sup>7</sup> Ibid.
- <sup>8</sup> UNESCO, “United Nations Decade of the Ocean Science for Sustainable Development (2021-2030)” available at [www.unesco.org](http://www.unesco.org) accessed on July 11, 2022; also see [www.oceandecade.org](http://www.oceandecade.org)
- <sup>9</sup> OECD, “The Ocean Economy in 2030” OECD Publications 2016.
- <sup>10</sup> World Wildlife Fund, “Reviving the Oceans Economy: The Case for Action 2015” *WWF Publication*, April 2015.
- <sup>11</sup> Caleb Silver, “The Top 25 Economies in the World” *Investopedia*, available at [www.investopedia.com](http://www.investopedia.com) dated June 27, 2022.
- <sup>12</sup> “ASEAN Services Integrated Report” A Joint Report of ASEAN Secretariat and the World Bank, 2015, available at [www.documents1.worldbank.org](http://www.documents1.worldbank.org)
- <sup>13</sup> Rajni Gamage, “Blue Economy in Southeast Asia: Oceans as the new frontiers of economic development” *Journal of the National Maritime Foundation of India*, July 2, 2016.
- <sup>14</sup> Mani Juneja, “Blue economy: An ocean of livelihood opportunities in India” *The Energy and Resources Institute*, March 12, 2021.
- <sup>15</sup> Muhammad Usman Askari, Muhammad Tahir and Nafisa Shaheen, “Blue Economy of Pakistan: Challenges and Prospects” *Journal of the Punjab University Historical Society*, 33:2, July-December 2020.
- <sup>16</sup> For further details see Dost Muhammad Barrech, Muhammad Abbas Brohi and Najeeb Ullah, “Pakistan’s Untapped Blue Economy Potential” *Journal of Global Peace and Security Studies*, 2:1, 2021.
- <sup>17</sup> See [www.wits.worldbank.org](http://www.wits.worldbank.org) accessed on July 12, 2022.
- <sup>18</sup> Nida Hameed, “Shipbreaking Industry of Pakistan: Problems and Prospects” *Maritime Study Forum*, available at [www.maritimestudyforum.org](http://www.maritimestudyforum.org) accessed on July 11, 2022.
- <sup>19</sup> For comprehensive discussion on Blue Economy Potential, see Iftikhar Ahmed Rao, *Elements of Blue Economy*, Islamabad: Institute of Policy Studies Press, 2020; Asaf Humayun and Naghmana Zafar, “Pakistan’s ‘Blue Economy’ Potential and Prospects” *Policy Perspective*, 11:1, January 2014; Muhammad Usman Askari, Muhammad Tahir and Nafisa Shaheen, “Blue Economy of Pakistan: Challenges and Prospects” *Journal of the Punjab University Historical Society*, 33:2, July-December 2020; and Rutt Syed and Aiysha Safdar, “Revisiting Blue Economy: Challenges and Prospects for the Maritime Sector of Pakistan” *Journal of Contemporary Studies*, 10:2, Winter 2021.