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Blue Economy for Sustainable Development: A Conceptual Study on Coastal Balochistan

[1]* Adeel Ahmed

[2] Riaz Ahmed

[3] Abdul Majid Nasir

[4] Waseem Barkat

Abstract

Pakistan's blue economy has enormous potential to contribute to economic growth. This research aims to assess an in-depth review of commitments, perceptions and vulnerabilities and develop a conceptual framework for promoting a sustainable blue economy in Balochistan. The coastal areas of Balochistan are the primary motivation behind this research because of their vast coastline, ocean resources and central geographical location. The study helps in developing an awareness of the sustainable blue economy in the coastal areas of Balochistan, which contain abundant marine resources. Despite its strategic significance and rich marine resources, the region's sustainable blue economy remains underdeveloped due to policy gaps, poor governance, weak institutional commitments, lack of stakeholder awareness, and socio-economic vulnerabilities. Numerous challenges and vulnerabilities exist in coastal communities of Balochistan, to have the trickledown effect of blue economy-related developments, community engagement, understanding the perceptions and assurance for inclusive development is crucial. The research focuses on the literature on key stakeholders, policy makers, departments, communities, and individuals associated with blue economy development. The outcomes of this research are valuable in terms of having an understanding of the national and international standards of the blue economy and will be helpful for policy.

Keywords: Blue Economy; Triple Bottom Line; Sustainable Development; Balochistan; Pakistan.

1. Introduction

The oceans are the largest ecosystems on the planet, not only buffering the effects of climate change but also providing habitats for millions of species and food for more than one billion people. The history of oceans has been promising due to its economic activities, management of transportation and trade, and as a source of food (Cisneros-Montemayor et al., 2021; Parletta, 2019). The concept of

the blue economy is linked with maritime resources and economic development. The blue economy to support environmental sustainability and the development of coastal areas. It promotes better living standards by properly utilising limited ocean resources (EC, 2020). The contribution of the ocean sector to economic growth has been very vibrant, as this sector accounts for US$1.5 trillion, providing jobs to 31 million people, and is estimated to double growth by 2030 (Cisneros-Montemayor et al., 2019). This estimate does not count the sub-sectors that are formally and informally associated with the sea sector and employing around 232 million people (Teh & Sumaila, 2013).

The blue economy is instrumental in meeting global challenges of poverty, climate change, and food security, addressing the issues of marginalised groups (Cisneros-Montemayor et al., 2019). To achieve these objectives and contribute to economic development, the role of funding agencies and the private sector is pivotal (Lee et al., 2016; Guerra, 2018). Hence, the blue economy framework must focus on protecting human rights, resource management, and ensuring an equitable share of costs and benefits (Kittinger, 2017). All these measures of the blue economy promote local community inclusion and social harmony. In this regard, Bennett et al. (2019) suggested methods to monitor the development of social aspects such as distributions of costs and benefits to human groups, and participation in industries. In relation to this, good governance is imperative as it improves equitable outcomes, strengthens legal frameworks, supports inclusion of stakeholders, improves operational realities, and helps in the dissemination of information (Bennett et al., 2019; Stephenson, 2017). Local communities should have access to new industries for equitable distribution of benefits (Bennett et al., 2019).

In the context of the marine sector, governments have paid less attention to social equity, yet studies depict that the social aspect has been an integral part of achieving management objectives (Bennett, 2018). Furthermore, the blue economy gives rise to two conflicts of interest: economic growth and development, and protection and management of ocean resources (Cisneros-Montemayor et al., 2019).

From the perspective of sustainable development goals, SDG 14 is related to the conservation and sustainability of sea and marine resources. For the agenda of 2030, SDG 14 contains 10 targets. The ten targets of SDGs include fishery subsidies, ocean pollution, SIDS economy, regulation on fishing, marine and coastal ecosystem, science and marine technology, conservation of marine areas, ocean acidification, artisanal fishing and implementation of international laws for sustainable use of the oceans. SDG 14 primarily deals with the ocean economy, and it does not contain the element of the aquatic economy of coastal States.

2. Relevance in the Context of Pakistan

Sustainable management of oceans is critical in achieving the United Nations Sustainable Development Goals (SDGs). The future of the global economy is envisioned as advancing towards a blue economy that would lead to socially equitable, environmentally sustainable and economically viable economies. A sustainable blue economy provides a bulk of opportunities to multiple associated industries (e.g. value-added seafood, eco-tourism, ship-making, ship-breaking, shipyards construction, hoteling, watersports, etc.).Despite the benefits of the blue economy, several challenges have been addressed for a long time, such as governance, environmental concerns, ocean grabbing and lack of sustainable entrepreneurial ecosystems, which highlight insufficient attention given to the livelihoods of coastal communities of Pakistan.

Pakistan is the fifth most populous country and is immensely dependent upon the sea due to growing demands for tourism, climate change mitigation, transportation, energy, and, most

importantly, food security in the region. For instance, Pakistan earns revenue from the maritime economy of about $ 183 million, which is far less than Bangladesh ($ 5.6 billion) and India ($ 6 billion). Also, Pakistan has failed to utilise its full potential of coastal tourism, worth about $4 billion and yet it is only $0.314 billion (Alam, 2020). Pakistan inherited the strategically important coastline of Balochistan. The focus of this research was the Balochistan coastline and its ocean resources, which give the province a very crucial role in the promotion of the sustainable blue economy of Pakistan.

Despite its strategic significance and rich marine resources, the region's sustainable blue economy remains underdeveloped due to policy gaps, poor governance, weak institutional commitments, lack of stakeholder awareness, and socio-economic vulnerabilities. Among other vulnerabilities, the coastal communities have frequently reported the issues of people including their socio-economic problems, for instance; environmental concerns, energy crises, exploitation of ocean resources by mafia trawling, infrastructural problems like sanitation and waste management issues, the illegal practices of overfishing, degradation of marine and coastal ecosystems which reflects the lack of a clear roadmap for a balance and sustainable initiatives. Moreover, coastal communities, policymakers, and industry stakeholders often lack the necessary knowledge and skills to adopt and gain benefits from sustainable practices, which has further hindered the sustainable blue economy growth.

Though several issues of coastal communities have received due attention in academic literature, the issues of livelihood, food security and wellbeing, equitable distribution of economic benefits, grabbing from marine resources and environmental concerns are threatening local communities (Bennett et al., 2021; Blasiak et al., 2018; Cormier-Salem, 2017). Recent literature also recorded that economic growth is essential for job creation, contributes to the national economy, and increases the income of locals (Bennett et al., 2021). Furthermore, vulnerable groups, which include women, small-scale fishers, local people and low-income population, have fewer chances of receiving economic benefits of the blue economy (Stonich et al., 1997; Cormier-Salem et al., 2017). All these problems exist due to unfavourable factors such as lack of technological access and support, high land and rent prices, lack of subsidies and lack of technical assistance (Bennett et al., 2021).In the context of Gwadar, the problems with local communities with respect to the blue economy have been highlighted in the media with the argument that local communities must be given a participatory role so that they feel a sense of ownership in all economic development (Baloch, 2016).

The exploration of Pakistan's rich ocean resources is becoming vital for sustainable growth. Being a signatory of the United Nations Sustainable Development Goals (SDG-14), Pakistan has declared to fully utilise the maritime resources. No doubt, Pakistan is blessed with a vast area of oceans, but it has remained unexplored. The World Economic Forum reported that Pakistan is among the least competitive countries of South Asia in terms of tourism and globally ranked at 121 out of 140 countries. However, for achieving its global goals, a strong level of commitment to policy, execution and governance is immensely needed. Such initiatives include efforts for economic growth, social inclusion, and environmental sustainability. Especially in times of economic development, the blue economy gets more attention with the initiation of the Pakistan Economic Corridor (CPEC). For instance, recent developments may provide a bulk of opportunities for human resource development and multiple industries associated with the blue economy (i.e., ship-making, ship-breaking, shipyards construction, value-added seafood, tourism and hoteling, etc. (Iqbal et al., 2024; Ahmed et al, 2017).

The coastal area of Balochistan is the primary motivation behind the CPEC project because of its deep-sea port, ocean resources and central geographical location (Shahrukh et al., 2020). Balochistan has around 800 kilometres of strategically important coastline, which is not only rich in

aquatic species but also has a diverse range of landforms such as sand beaches, rock cliffs, headlands, bays, lagoons, deltas, islands, mud volcanoes, estuaries and mudflats etc. that could be an impetus for sustainable blue economy of Pakistan (Basit & Alam, 2020).

Nevertheless, numerous challenges and vulnerabilities persist in Balochistan's coastal communities. To have the trickle-down effect of CPEC-related developments, community engagement and assurance for inclusive development are crucial. From the perspective of the local community, such development in coastal areas may further cause marginalisation and induced displacements of fisherfolk from their distinct coastal habitat, which threatens to damage their identity beyond repair (Shahrukh et al., 2020). Moreover, the primary concern of the local community is that with the development of the blue economy, their condition would deteriorate because there is no proper accommodative approach of the government and stakeholders toward local communities. The local communities were ignored, and a sense of alienation exists among both the fishermen and other ordinary people. It is in the sustainable development goals that local communities must be given a participatory role so that they feel a sense of ownership in all economic development (Baloch, 2016).

Among other vulnerabilities of the coastal communities, national media have very frequently highlighted the issues of people, for instance, socio-economic problems, energy crises, exploitation of ocean resources by trawling mafia, infrastructural problems like sanitation and waste management issues, the illegal practices of overfishing and degradation of marine and coastal ecosystems. With the development of the blue economy and the implementation of international commitments on the blue economy, these vulnerabilities and people's reservations require proper attention and due consideration at the policy level. A socially equitable blue economy is the best approach to development to achieve sustainable economic growth (Cisneros-Montemayor et al., 2019). Above all, in this context, social equity demands fair treatment of all stakeholders of the nascent industry. Specifically, the blue economy can achieve multiple aims that include equitable economic development, fisheries management and addressing environmental sustainability. As an overarching goal, social equity and human well-being can bridge the gap between economic and environmental goals (Cisneros-Montemayor et al., 2019). Therefore, this research would provide a deeper understanding of stakeholders' commitments, community perceptions, and prevailing vulnerabilities in the coastal communities of Balochistan.

3. Development of Conceptual Framework

The conceptual framework of our study rests on the premise of the Blue Economy (BE) in the context of Balochistan Coastal Development, that it could be both a developmental strategy and a governance discourse that can reshape the trajectory of the maritime sector in Pakistan. Despite having abundant marine resources in Balochistan, the coastal communities remain a marginalised population. Focusing on the blue economy in coastal Balochistan can provide an opportunity to link local development with national and global agendas on sustainable development goals. Building on the view that the blue economy and sustainable development are interdependent, the given framework can position the blue economy for local communities as a necessary pathway for resource-dependent countries such as Pakistan, in which economic development and expansion must be reconciled with social justice in local communities and ecological protection in a global perspective (Humayun & Zafar, 2014).

In order to answer our research questions from the perspective of the blue economy, we build our conceptual framework on the Triple Bottom Line (3BL) approach that stresses the integration of three Ps, i.e. people, planet and prosperity as the foundation of sustainable development (Alhaddi, 2015; Elkington, 1994). The World Bank (2017) and later other contributions further reaffirm that the

balancing of these three domains is essential if we need a sustainable blue economy. Applying this to the blue economy in Balochistan, the model illustrates how social equity, environmental resilience and economic opportunity are deeply intertwined with each other.

The literature extensively supports that the (3BL) approach is a robust and consistent framework providing strong validation. However, the evidence also reveals significant limitations, including a lack of standardisation and measurement challenges (Glac, 2015).

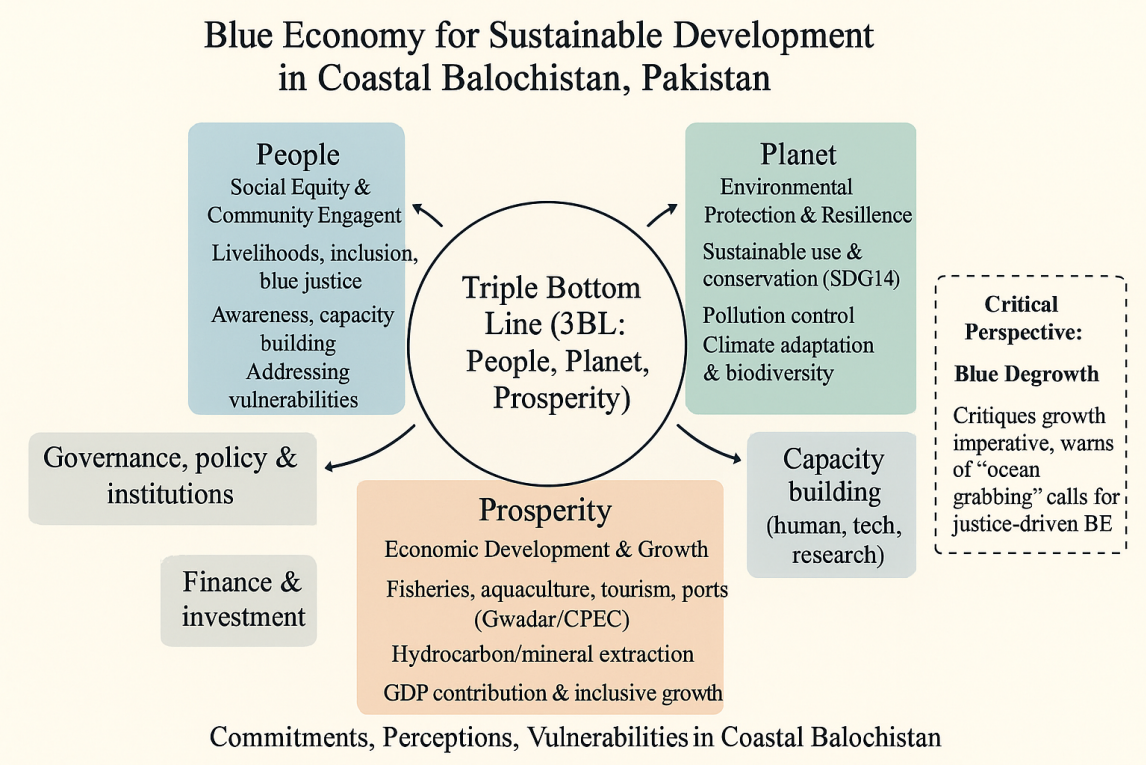

Figure 1: Conceptual Framework: Blue Economy for Sustainable Development in Coastal Balochistan.

The blue economy in Pakistan has the potential to offer economic opportunities in terms of fisheries, aquaculture, shipping, coastal tourism, hydrocarbons and mineral extraction, with the potential hub district Gwadar can play a central role through the China–Pakistan Economic Corridor (Gill & Iqbal, 2021). However, there exists extensive research indicating that without effective governance, inclusive policies and local participation, the economic promise associated with the BE can be further risked by benefiting external actors while sidelining vulnerable coastal groups (Bennett et al., 2019; Cisneros-Montemayor et al., 2019).

Our focus in this study is on the social dimension that purely emphasises local development in terms of equity, justice and participation. For instance, small-scale fishers, women, or marginalised populations in general in coastal Balochistan often lack access to the economic benefits that are associated with maritime development. So, we conceptualise that their exclusion could further be compounded by limited awareness of blue economy opportunities, weak capacity-building initiatives and neglect in policy planning when the country intends to develop the blue economy. The idea of "blue justice" is crucial in this context because the importance of fair access to resources, protection

of their livelihoods and a participatory governance system can then ensure a sustainable blue economy (Cisneros-Montemayor et al., 2019; Okafor-Yarwood et al., 2020). Without any initiatives in advance in terms of planning for inclusive development, the interventions of the blue economy can potentially further risk creating more alienation and resistance among local communities—that is a challenge which has already been visible in the contested development trajectory of Gwadar in particular and Balochistan and Pakistan in general (Jamali, 2013; Talpur et al., 2023).

The environmental pillar of the blue economy, which is aligned with the UN's Sustainable Development Goal (SDG) 14 (i.e. life below water), is also important in emphasising the conservation of marine and coastal ecosystems. In this regard, serious concerns such as unsustainable trawling, illegal fishing, pollution, habitat degradation, etc., are some that if continue are further threatening the biodiversity and ecosystem of blue economy of Balochistan (Aijaz & Butt, 2021; Alam & Azam, 2023; Askari et al., 2020; Gill & Iqbal, 2021; Humayun & Zafar, 2014). Researchers further observed that the health of the marine ecosystem is though critical for global biodiversity, but it is hugely important for maintaining a sustainable ecosystem in which food security and livelihoods for coastal communities can be ensured (Silver et al., 2015). Thus, various initiatives, including a robust governance system, tighter regulation of extractive activities, sustained investment in ecological restoration, etc., are required to ensure the success of the Blue Economy in Balochistan. It can be possibly done by creating enabling conditions as given in our three-pillar model (see Figure 1). The model includes a system of better institutional coordination, investment in human capital, particularly in local communities and use of innovative financial tools that can support projects on the development of the blue economy in Balochistan (Iqbal et al., 2024; Mohsin et al., 2024; Noman et al., 2022; Saleem et al., 2024; World Bank, 2017). A collaborative and robust system of governance is equally important, which could balance those of state authorities with local participation to avoid creating a top-down approach of exclusion (Bodin, 2017). In addition to that, the model also incorporates a critical perspective in the context of developing and sustaining a blue economy in Pakistan. It is worth mentioning here that research scholars caution that treating the blue economy purely as a growth agenda can risk creating inequalities among people and legitimising "ocean grabbing," in which local access can be displaced by external investors (Barbesgaard, 2018; Bond, 2019). The "blue de-growth" perspective purely emphasises justice, equity and ecological balance as the central point to a sustainable governance system of the ocean (Ertör & Hadjimichael, 2020). For the Balochistan economy, in which coastal communities already face alienation and vulnerability (as discussed above), these critiques are significant and relevant. In addition to vulnerabilities of the communities, the law-and-order situation in the coastal belt of Balochistan is challenging, which also needs great attention for the development of the blue economy of Pakistan.

Thus, our model that provides a framework to conceptualise and assess critically the blue economy of Pakistan as a multidimensional development pathway in which commitments, perceptions and vulnerabilities of local communities residing in the coastal belt of Balochistan are given a central point. Here, commitments reflect the government and institutional policies that are aligned with the sustainable goals of the blue economy; perceptions of the communities capture the awareness and aspirations of locals and stakeholders; and vulnerabilities highlight persistent socio-economic and ecological risks on the blue economy. Only then, by addressing these three dimensions within the broader context of 3 blue economy models and by integrating lessons from both promotion and critiques of blue economy, a sustainable and equitable development can be achieved for coastal communities in Balochistan.

4. Conclusion and Policy Recommendations

Growing the blue economy would bring growth and prosperity to any country. A vibrant blue economy could make a much greater contribution to reducing poverty, building resilient communities, fostering strong economies and feeding over 9 billion people by 2050. It will annually contribute US$83 billion to the global economy (World Bank, 2016). Similarly, policy experts believe that if Pakistan's ocean resources are timely and properly utilised, it would create 1 million jobs (Askari, 2020). Unfortunately, due to a severe lack of government attention and neglect, the marine economy is facing "sea blindness" as Pakistan's current revenues are estimated at 183 million dollars, which is far less than that of Bangladesh and India, which stand at 5.6 and 6 billion $ respectively. For example, in Pakistan, the maritime economy's coastal tourism contributes $0.314 billion, whereas the potential is almost $4 billion (Alam, 2020). Although Pakistan is putting efforts into the development of the blue economy, for the achievement of sustainable development and growth, a serious level of policy intervention and commitments across the board is needed.

A thorough comparative analysis showed those vibrant blue economies that have very decisive and impactful blue economy policies and governance. Such analysis will help in the preparation of the fact-finding policy paper and recommendations for policy experts and decision makers, which will enable them to have a comprehensive scientific fact sheet about emerging blue economies of the world. This preliminary research is valuable in terms of understanding the existing policy commitments, governance and implementation of national and international standards at the grassroots/functional level. The relevance of this research would help researchers and policymakers to know that the concerned maritime sector departments have an understanding of the concept of blue economy and its operationalisation, how they value UN SDGs, and what strategies they are applying for achieving those standards and objectives.

This research would also help in understanding the ground realities and vulnerabilities of coastal communities. The actual data extraction from these communities would help policymakers to have greater knowledge about the actual problems and sufferings of coastal communities, which may hinder the development of Pakistan's blue economy in the true spirit. Similarly, through this research, we can identify the gaps and requirements for establishing or promoting blue economy activities. For example, we can identify through data what kinds of skills are needed for people of coastal communities, what concerns they have for their future, their willingness to participate in blue economic engagements and information on financial vulnerabilities will lead to devising better policy development for the blue economy of Pakistan. In continuation of the above policy recommendations, the government needs to have near-term policy directions for the development of a sustainable blue economy in Balochistan. Among others, the plausible short-term steps are establishing infrastructure in the coastal belt, declaring eco-tourism points, inviting investors to invest in ecotourism and engaging with the coastal community for the development of the blue economy.

Authors

[1]* Associate Professor, Faculty of Business and Economics, University of Turbat, Balochistan. Email: adeelbaloch@uot.edu.pk

[2] Assistant Professor, Faculty of Business and Economics, University of Turbat, Balochistan. Email: riaz.ahmed@uot.edu.pk

[3] Assistant Professor, Faculty of Business and Economics, University of Turbat, Balochistan. Email: abdul.majid@uot.edu.pk

[4] Assistant Professor, Faculty of Business and Economics, University of Turbat, Balochistan. Email: wasim.barkat@uot.edu.pk

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