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Coastless Blue Economy: Redefining the Blue Economy for Landlocked Countries through a Geo-Economic Approach: A Case Study of Afghanistan

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ABSTRACT

The existing literature on the blue economy has focused mainly on oceans, seas and coastal areas, an approach that creates significant conceptual limitations for landlocked countries that lack direct access to the sea. In order to address this gap, this study proposes the concept of Coastless Blue Economy (CBE) as a geoeconomic framework to explain how landlocked countries participate in blue economy systems despite their lack of coastline. Using a conceptually-driven and integrative review of the scientific literature, this study synthesizes and analyzes studies related to the blue economy, landlocked countries, geoeconomy, transboundary water governance, trade connectivity and regional integration. The findings from the literature synthesis indicate that geographical landlockedness limits direct access to the sea, but does not necessarily prevent functional participation in blue economy networks. Accordingly, the proposed CBE framework is based on four main mechanisms, including exploitation and governance of domestic and transboundary water resources, geo-economics of corridors and trade connectivity, offshore access to ports and logistics networks, and hydro-digital technologies and infrastructure. Afghanistan is considered as a case study to demonstrate the applicability of this framework. The analysis shows that transboundary water resources, Afghanistan's geographical location between Central and South Asia, potential access to regional corridors and external ports, and the development of hydro-digital technologies create capacities for the country to participate in a landlocked water economy; however, weak infrastructure, institutional constraints, geopolitical dependencies, and climate change risks remain significant challenges. By expanding the spatial boundaries of the water economy concept, this research provides a framework for analyzing and designing water economy strategies in landlocked countries.

KEYWORDS: Coastless Blue Economy, Landlocked Countries, Geo-economics, Transboundary Water, Afghanistan

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1. INTRODUCTION

In the last two decades, the concept of the Blue Economy has become one of the important approaches in linking economic development, job creation, exploitation of water resources and environmental protection. In its early and common understandings, the blue economy has mainly emphasized the economic capacity of oceans, seas and coastal areas and activities such as fisheries, maritime tourism, maritime transport, ports, marine energy and sustainable exploitation of marine resources (OECD, 2016; World Bank, 2017). With the expansion of the literature in this field, the scope of the blue economy concept has also expanded to topics such as environmental sustainability, water resource governance, technological innovation, water security and inclusive development. However, a significant part of the existing theoretical and policy frameworks still focusses on countries that have direct access to the sea or ocean.

This geographical orientation creates an important conceptual issue for landlocked countries. Landlocked countries cannot directly benefit from many of the conventional water-based economic activities, such as maritime transport, offshore energy, coastal tourism, and marine resource extraction. Nonetheless, being landlocked does not exclude the participation of these countries in water and sea-based economic systems. LLCs have access to water-related economic activities through means of trans-boundary rivers, inland water resources, hydroelectric generation, water-based agriculture and industries, trade of virtual water, transport corridors and regional connectivity as well as access to ports of other countries indirectly. Instead of asking if LLCs can benefit from the blue economy, perhaps the fundamental question we should be asking is if the blue economy as a concept and its current framing has the capacity to account for how landlocked countries participate economically.

The relevance of this issue increases if we consider the structural constraints under which landlocked countries operate. Being landlocked usually results in higher costs of transportation services, dependence on transit countries, poor access to foreign markets, weak infrastructure of communications and logistics services, sensitivity to political and geopolitical changes. This negatively affects the competitiveness of landlocked countries, their foreign trade operations, and the capability of economic integration into regional and global economies (Faye et al., 2004; Arvis et al., 2007; Kowalski et al., 2015). However, so far the research on landlocked countries has explored this issue in regard to the geographical cost of being in a landlocked country, transit/logistics, access to markets, and paid little attention to their ability to engage in the blue economy. Therefore, “landlockedness” has been perceived mostly as a geographical constraint rather than a precondition for different modes of engagement towards water-based economies to emerge.

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To study the issue, it is suitable to choose a country such as Afghanistan. Due to its geographic location at the crossroads between Central and South Asia, it is connected to a cluster of regional economic, trade and water systems. A landlocked country like Afghanistan has no sea-coast, but its economic life and development connect it to inland water resources, trans boundary rivers, agriculture, hydropower plants, cooperation with neighbors and neighbor relations concerning shared water. Besides Afghanistan's link to maritime trade through the ports of its neighboring states and through transit corridors across the neighboring territory. The port of Karachi, Gwadar and Chabahar can be a proper case study to represent how even a landlocked country has a link to the maritime trade system without a seaport in its territory based on transport corridors, trans-state agreements and logistics networks. It illustrates why Afghanistan is an interesting case to explore the answer to the question of how one may expand the traditional limits of the blue economy to landlocked countries.

Despite the importance of this issue, the existing literature has developed into several relatively separate streams. The blue economy literature focuses mainly on the sustainable use of marine and coastal resources, fisheries, maritime tourism, ports, marine renewable energy and ocean governance (OECD, 2016; World Bank, 2017; Lee et al., 2020). In contrast, studies on landlocked countries have focused more on dependence on transit countries, transport costs, infrastructure, market access and the role of neighboring coastal countries (Faye et al., 2004; Arvis et al., 2007; Kowalski et al., 2015). Another stream of studies has addressed trans boundary water governance, virtual water trade, water diplomacy and shared river basin management (Allan, 1993; Hoekstra & Mekonnen, 2012; Sadoff & Grey, 2002). In addition, the geoeconomics and regional corridor literature has examined the importance of infrastructure connectivity, trade routes, and strategic access to markets and ports. Each of these streams of study explains part of the problem. However, these perspectives have been largely developed separately and have rarely been integrated into a single conceptual framework to explain the participation of landlocked countries in the blue economy.

Thus, a major research gap in the existing literature is that conventional blue economy frameworks still do not adequately explain how landlocked countries can participate in water-related economic activities through trans boundary water resources, corridor connectivity, indirect access to seaports, geoeconomics linkages, and water-related technologies. On the other hand, the landlocked literature, while well-explaining the constraints imposed by geographical location, has limited conceptual relevance to blue economy theory. Also, studies on trans boundary waters, virtual water and regional connectivity have often examined a specific aspect of this issue, and a unified framework that combines these elements into a developed concept of the blue economy for landlocked countries has not yet been sufficiently developed.

Based on this gap, the present study raises the following main question:

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How can the concept of the blue economy be redefined in such a way that landlocked countries, despite not having direct access to the sea, can participate in economic activities and systems related to the blue economy?

To answer this question, the present study pursues four objectives:

- First, to critically review conventional definitions of the blue economy and examine the geographical assumptions governing these definitions;
- Second, to identify the main constraints and opportunities for landlocked countries to participate in the blue economy system;
- Third, to examine the role of geoeconomics mechanisms, including trans boundary water resources management, transport corridors, regional connectivity and access to offshore ports, in facilitating this engagement; and
- Fourth, to present a conceptual framework, the "Coastless Blue Economy (CBE)," to explain how landlocked countries engage in the blue economy, using Afghanistan as a case study.

This research contributes to the existing literature in three ways. First, theoretically, it expands the conceptual boundaries of the blue economy from a predominantly coastal and maritime approach to a broader and more functional approach that also considers domestic, trans boundary and extraterritorial linkages. Second, conceptually, it draws links between the literature on the blue economy, landlocked country development, geoeconomics, trans boundary water governance and regional connectivity, and combines them into a single framework. Third, from a practical and policy perspective, focusing on Afghanistan, it shows that the lack of a coastline does not necessarily mean a complete lack of capacity to participate in the blue economy, and that alternative forms of participation in the blue economy can be considered through water resource management, the development of regional corridors, access to seaports in other countries, and the use of water-related technologies.

In this context, the proposed concept of a landlocked blue economy is not meant to replace the conventional blue economy; rather, it is an attempt to complement and expand its conceptual scope so that the blue economy can also explain the conditions of countries that lack a coastline, but are connected to water economic systems through water resources, trade networks, regional corridors, cross-border relations, and indirect access to the marine economy. Accordingly, this article attempts to provide a conceptual framework in which "direct access to the sea" is not the only criterion for measuring a country's capacity to participate in the blue economy, but also functional access to water resources, transportation networks, ports, markets, and water technologies.

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1.1 Research Problem

The traditional definition of the Blue Economy is primarily associated with oceans, seas, coastal zones and maritime activities (World Bank, 2017). While landlocked countries have access to water-related economic systems through inland and trans boundary water resources, hydropower, agriculture, transport corridors, regional connectivity and indirect access to seaports (Faye et al., 2004; Arvis et al., 2007; Sadoff & Grey, 2002), these linkages have not been adequately included in existing Blue Economy frameworks. This is especially important for Afghanistan, which has no coastline, but is linked to water systems and maritime trade in the region via transport corridors and neighboring nations. Thus, the primary issue of this study is the absence of a holistic conceptual model of the role of landlocked countries in the Blue Economy without direct access to the sea.

1.2 Research Questions

1. What can be the new definition of the "Blue Economy" for landlocked countries?
2. What are the key opportunities and challenges for landlocked countries to engage in the Blue Economy?
3. What will be needed for trans boundary water resources, supply chain (water transport), regional connectivity and access to foreign seaports to support Blue Economy involvement in landlocked nations?
4. What are the possible ways to implement the Coastless Blue Economy (CBE) framework in Afghanistan?

1.3 Research Objectives

1.3.1 General Objective

To establish a conceptual framework for understanding how the Blue Economy can be involved in landlocked countries in terms of participation in Afghanistan as a case study.

1.3.2 Specific Objectives

- To investigate geographical assumptions in the traditional definition of the "Blue Economy".
- To define the key opportunities and barriers for LDCs in the field of the Blue Economy.
- To look at trans boundary water resources, transport corridors, regional connectivity and foreign seaports.
- To create and explain the proposed Coastless Blue Economy (CBE) framework for Afghanistan.

1.4 Research Hypotheses

H1: The spatial dimension of water resources is essential and has an important positive influence on the participation of the BLUE economy in landlocked countries.

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H2: The role of regional transport corridors and connectivity in improving the involvement of landlocked countries in the process of the Blue Economy is of great significance.

H3: Indirect connectivity with foreign seaports plays a crucial role in enabling landlocked countries to become more part of maritime economy.

H4: Water related technologies play a major role in the Blue Economy opportunities in countries that are landlocked.

1.5 Significance of the Research

The contribution of this study lies in the fact that it brings the concept of the Blue Economy beyond the borders of coastal and maritime countries. It offers a conceptual approach to the way landlocked countries can engage in water-related economic systems, both through trans boundary water bodies and hydropower, regional connections and transport corridors, foreign seaports, and water-related technologies. The study is especially important for Afghanistan, as it will assist policymakers and researchers in finding paths for alternative development and regional integration in the country, where there is no direct access to the sea. Moreover, the proposed Coastless Blue Economy (CBE) framework could serve as a basis for future studies and policies on landlocked countries.

2. LITERATURE REVIEW

2.1 Theoretical Foundations and Key Concepts

2.1.1 Definition and Evolution of the Blue Economy

The concept of the Blue Economy has become an important concept in the literature on sustainable development, water resources governance and marine economy over the past two decades. However, despite the relatively clear appearance of this term, there is still no single and agreed definition of the blue economy in the scientific literature. Various studies show that the concept has been used by different scientific groups, policymakers and stakeholders with different meanings and objectives; in a way that sometimes the emphasis is on economic development and investment in marine industries, sometimes on the protection of marine ecosystems and sometimes on social justice and the livelihoods of communities' dependent on marine resources (Silver et al., 2015; Voyer et al., 2018; Cisneros-Montemayor et al., 2019). Therefore, the blue economy cannot be considered simply an economic concept limited to a set of specific industries; rather, this concept has gradually become a multidimensional framework for examining the relationship between economic activity, water resources, the environment and social well-being.

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One of the most influential studies in the development of the conceptual literature on the blue economy is Silver et al. (2015), which shows that the concept has emerged from several different discourses in the field of international ocean governance. These authors identify four main understandings of the blue economy: the ocean as natural capital, the ocean as a business opportunity, the ocean as a vital element for small island developing states, and the ocean as a source of livelihood for small-scale fishing communities. This finding suggests that the blue economy has been an ambiguous concept from the beginning, with tensions and differences between its economic, environmental, social, and political objectives (Silver et al., 2015). From the present perspective, one of the vital features of the blue economy is that it is multidimensional and ever evolving.

Also exploring the conceptuality of the blue economy, Smith-Godfrey (2016) goes even farther when conceptualizing the blue economy by linking it to oceanic resource use and sustainable economic development, stating that the blue economy must be capable of connecting economic utilization and the sustainability of ocean resources. This approach shows that the blue economy goes beyond the concept of a mere "marine economy" because, in addition to economic activity, it also includes the issue of maintaining the ecological capacity of water resources for future generations in the analysis framework. For this reason, a conceptual distinction has been made in the scientific literature between the Ocean Economy, which focuses more on economic activities related to the ocean, and the Blue Economy, which emphasizes sustainability and social and environmental dimensions in addition to economic activity (Smith-Godfrey, 2016; Voyer et al., 2018).

In this regard, Voyer et al. (2018) examine the different definitions and applications of the blue economy and show that the lack of a single definition is one of the fundamental challenges of this concept. They argue that the blue economy has acquired different meanings in different parts of the world and among different actors, and this difference can affect the way policies are designed, the selection of economic sectors and development priorities. Therefore, the blue economy should be considered a concept that has not only an economic dimension, but also environmental, social, institutional and political dimensions (Voyer et al., 2018).

On the other hand, Keen et al. (2018), in examining the concept of the blue economy in the context of ocean governance, shows that the widespread use of this term does not necessarily mean the existence of a completely clear theoretical framework. They review the literature and policies related to the blue economy and show that there is a need for greater coherence between the different components of the concept, including economic objectives, environmental sustainability, social justice, governance and stakeholder participation. In their view, the main value of a blue economy conceptual framework is that it can bring together the different elements of sustainable ocean development and reveal the relationships between them (Keen et al., 2018). This perspective is important for the present study, as it shows that the development of a new concept in the field of blue economy

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should be done not simply by adding a new economic sector, but by redefining the relationships between the different elements of the water and economic system.

Subsequent developments in the literature have also shown that the blue economy is increasingly linked to the concept of sustainability. Eikeset et al. (2018) argue that ocean-based economic growth can only be sustainable in the long term if the ecological capacity of marine systems is placed at the centre of decision-making. According to this perspective, the blue economy should not focus solely on production growth and income generation from marine resources; it should balance the provision of economic goods with the preservation of the marine ecosystem and enhance its resource regenerative capability. This conceptualization moves the blue economy toward an ecological economics understanding and sustainable development by indicating that water resources should not be seen solely as an economic input detached from its ecosystem (Eikeset et al., 2018).

In line with this understanding of social responsibility, Cisneros-Montemayor et al. (2019) also use an analysis of social dimensions in terms of the blue economy development and point out that blue economy development should not focus solely on enhancement of economic value of marine activities and improvement in livelihood status should also be emphasized including the social equality and equitable sharing of benefits. From this point of view, an economy developing in the direction of marine sectors economy growth only does not refer to a transformed and true-blue economy without considering social welfare and distribution affects. So, the idea of blue economy in the new literature have been moved toward to combine economic growth and social gains simultaneously in connection with environmental sustainability (Cisneros-Montemayor et al., 2019).

Furthermore, another significant aspect of the literature on the blue economy is that its sphere of action and economic sector coverage was broadened. Traditional activities, such as fisheries, marine traffic, coastal and nautical tourism and maritime ports remain an important element in the blue economy, but the issue of renewable marine energy, aquaculture, marine biotechnology or other emerging activities also gained progressively their own space in the discourse on this notion (Voyer et al., 2018; Cisneros-Montemayor et al., 2019). The increase observed seems to suggest that the blue economy is more than a mere "specific economic sector"; it has emerged as an analytical framework in reference to a group of economic and ecological interactions linked to the aquatic environment.

Despite these developments, the nature and geographical scope of the blue economy remain contested. A significant part of the scientific literature examines the concept within the framework of the ocean and marine economy, with coastal and marine activities at the centre of the analysis (Silver et al., 2015; Voyer et al., 2018; Cisneros-Montemayor et al., 2019). Even in studies that emphasize the expansion of the blue economy concept, many of the examples and frameworks examined relate to coastal countries, islands, or communities that are

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directly connected to the ocean and sea. As a result, although the concept of the blue economy has expanded thematically, its geographical expansion has not yet been sufficiently explored.

This is also related to the findings of Graziano et al. (2022). They show that even when different definitions of the blue economy are used at the regional level, differences in the scope of the definition lead to significant differences in the size, structure and economic importance of the blue economy. In other words, the definition of the blue economy is not simply a theoretical issue; rather, what activities and what spaces fall within the scope of this concept can have a direct impact on how it is measured and policy-making (Graziano et al., 2022).

From this perspective, one of the important questions that emerges from the evolution of the blue economy literature is whether having a coastline should be considered an implicit condition for participating in the blue economy? The existing literature does not provide a clear and unified answer to this question. On the one hand, the extensive focus of studies on oceans, seas, coastal areas and maritime industries indicates the dominance of a maritime-oriented framework; On the other hand, the multidimensionality of the concept of the blue economy and the increasing emphasis on sustainability, technology, governance and economic linkages indicate that there is a capacity to expand the scope of this concept (Keen et al., 2018; Cisneros-Montemayor et al., 2019; Graziano et al., 2022).

Accordingly, the evolution of the blue economy literature can be summarized in three major trends: first, the formation of the concept in connection with the ocean economy and maritime activities; second, its expansion from a purely economic concept to a framework that also includes environmental sustainability, governance and social justice; and third, the increasing diversity in the definitions, sectors and geographical scales considered in blue economy studies (Silver et al., 2015; Voyer et al., 2018; Cisneros-Montemayor et al., 2019; Graziano et al., 2022).

This conceptual shift provides the theoretical context for rethinking the relationship between geography and participation in the blue economy. If we define the blue economy solely in terms of direct access to the ocean, landlocked countries are structurally marginalized. But if we consider the blue economy as a broader economic-ecological system, we can ask whether domestic and transboundary water resources, water technologies, trade networks, transport corridors, and indirect access to seaports can also create opportunities for landlocked countries to participate. Answering this question requires linking the blue economy literature with the literature on landlocked countries, transboundary waters, geoeconomy, trade corridors, and seaport connectivity, a topic that will be explored in the next section.

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2.2 Conceptual Foundations and Evolution of the Blue Economy

The concept of the Blue Economy has become an important concept in the literature on sustainable development, marine resource governance, and economical use of water resources in recent years. Despite the rapid expansion of the use of this concept, the scientific literature has not yet reached a single operational definition of the blue economy. Studies show that the term has been used in different contexts with different emphases on economic growth, environmental protection, community livelihoods, social justice, and water resource governance (Silver et al., 2015; Voyer et al., 2018; Keen et al., 2018). For this reason, the blue economy can no longer be viewed as just a different terminology of maritime economy, but has been developed into a complex multidimensional perspective to understand the interconnection between economic activities, water resources, the environment and society. The variety of concepts also has a practical impact, as the definition adopted can influence which economic sector should be incorporated into, how much the size would be and how to set policy related to the blue economy.

One of the important studies in the formation of the critical literature on the blue economy is the research of Silver et al. (2015). This study shows that the blue economy is not formed from a single discourse, but from several different perceptions and discourses about the role of the oceans in economic and social development. Among the existing perceptions, the authors emphasize the difference between viewing the ocean as a natural capital, an economic opportunity, a source of development for small island states and a source of livelihood for fishing communities. From this perspective, the concept of the blue economy has had a kind of conceptual ambiguity from the very early stages; in the sense that different groups can use a single term for different goals and policies (Silver et al., 2015).

This ambiguity has been emphasized in subsequent studies. Voyer et al. (2018) examined different understandings of the blue economy and showed that there are differences among different actors about the meaning of the concept and the scope of the sectors that should be included. This research shows that although there is a convergence among many understandings about the necessity of linking economic development with environmental protection, there is significant disagreement about the legitimacy of some economic activities, including fossil fuel-based activities and seabed resource extraction. Thus, the blue economy is not a fully established concept, but an arena in which economic, environmental and governance goals interact and sometimes conflict (Voyer et al., 2018).

Keen et al. (2018) have also emphasized the conceptual and operational ambiguity of the blue economy. Focusing on ocean governance in the Pacific region, these researchers show that the widespread use of the term blue economy does not necessarily mean there is agreement on how to implement it. In their view, one of the

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main problems is that the different elements of the water economy – from economic activities and environmental protection to the interests of local communities, geographical scales and stakeholder groups – are not always considered in an integrated manner. Therefore, the theoretical value of the water economy increases when it can explain the relationships between these elements, as well as the interactions between different scales (Keen et al., 2018).

On the other hand, the evolution of the concept of the blue economy has been accompanied by a gradual expansion of its scope of objectives from mere economic growth to sustainable development. In narrower understandings, the blue economy focuses mainly on the economical use of ocean resources and the development of marine industries; but in broader understandings, the maintenance of ecological capacity, resource sustainability, the well-being of communities and good governance are also part of the logic of the blue economy (Voyer et al., 2018; Keen et al., 2018). As a result, the fundamental difference between the blue economy and a purely industrial view of the marine economy can be seen in the attempt to create a balance between economic exploitation and the sustainability of aquatic systems.

The blue economy now places more importance on the social and distributive aspects, due to these changes. According to Cisneros-Montemayor et al. (2019), "the evaluation of the blue economy should move beyond production output, job creation, and income by marine activities; it should also scrutinize the distribution of benefits of marine economic activities and consider whether the blue economy development process enhances well-being and social equity." A blue economy that does so would integrate economic, environmental and social targets.

In this regard, Eikeset et al. (2018) emphasize the relationship between marine economic growth and the ecological capacity of the oceans. In their view, economic growth based on marine resources can be sustainable in the long term when the ecological constraints of marine systems are taken into account in economic decision-making. This view suggests that aquatic resources cannot be viewed solely as economic inputs, as their economic production capacity depends on the health and regenerative capacity of ecological systems. Therefore, ecological sustainability should be part of the foundation of the marine economy, not a secondary consideration alongside economic objectives.

Another development in this literature is the expansion of the economic domains studied. In addition to traditional activities such as fisheries, shipping, tourism and ports, activities such as aquaculture, marine energy, biotechnology and other emerging industries have also been considered in studies of the blue economy (Voyer et al., 2018; Cisneros-Montemayor et al., 2019). However, this sectoral expansion has also led to a definitional

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problem; as more activities and economic sectors are included in the domain of the blue economy, the size and structure of this economy will also change.

The issue is more precisely demonstrated by empirical work from Graziano et al. (2022). The authors analyzed five definitions of the blue economy over two geographical areas and highlighted the fact that "varying the definition and chosen sectors for inclusion in the blue economy leads to differing estimates for Blue Economy size, employment, productivity and value added in the regional economy" (Graziano et al., 2022). The conceptual disagreement on the definition of the blue economy is thus not only theoretical disagreement but also a relevant factor for empirical analysis and policy decisions.

Despite this conceptual expansion, one feature remains prominent in a significant part of the blue economy literature: the focus on oceans, seas, coastal areas and their associated activities. Even studies that argue for the multidimensionality of the blue economy have built a significant part of their analytical framework on marine industries and ocean-related economic systems (Silver et al., 2015; Voyer et al., 2018; Keen et al., 2018). For example, Voyer et al. (2018) examine in their analysis different sectors of marine industries and how they are included or excluded from definitions of the blue economy. This shows that although the concept of the blue economy has expanded in terms of content and objectives, a significant part of the literature still approaches the issue from an oceanic and maritime starting point.

Here, a distinction should be made between two types of conceptual expansion. Vertical expansion of the blue economy means adding new dimensions such as sustainability, social justice, governance and technology. While horizontal expansion refers to the expansion of its geographical and spatial scope beyond coastal and oceanic areas, the existing literature on vertical expansion has made significant progress, the literature on its horizontal expansion, especially in relation to countries without coastlines, is much more limited. This distinction is of fundamental importance for the present study, as the main issue of the paper is not to add a new economic sector to the blue economy, but to rethink the geographical scope and conditions of access to the blue economy.

From this perspective, the issue of geography becomes one of the least studied dimensions of the concept of the blue economy. If direct access to the ocean or being located in a coastal zone is implicitly considered a prerequisite for participation in the blue economy, landlocked countries will be excluded from the very beginning from an important part of this framework. In contrast, if the blue economy is defined in terms of economic and functional connections with water resources, then other forms of connectivity need to be considered, including domestic and trans boundary water resources, transport infrastructure, trade corridors, access to ports in other countries, and water-related technologies.

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Thus, a review of the literature shows that there is a certain convergence among researchers on several points: the blue economy is a multidimensional concept; its definition is not yet fully established; environmental sustainability and social benefits must be considered alongside economic benefits; And the scope of the economic sectors covered can vary across regions (Voyer et al., 2018; Keen et al., 2018; Graziano et al., 2022). In contrast, there is still disagreement and ambiguity about the precise scope of the blue economy, the sectors that are included, and how to determine its spatial boundaries (Silver et al., 2015; Voyer et al., 2018).

Thus, the evolution of the blue economy literature can be summarized in three main directions: first, moving from a focus on marine and ocean activities to a broader concept of economic development related to water resources; second, adding sustainability, social, and governance dimensions to economic objectives; and third, increasing diversity in the definitions, sectors, and scales used to study the blue economy (Silver et al., 2015; Voyer et al., 2018; Keen et al., 2018; Graziano et al., 2022).

2.3 The Concept of Geo-Economics and Its Link to the Blue Economy

Geo-economics is the study of factors related to geography, especially to a region's strategic planning in a country, by using financial instruments and means to achieve strategic interests in the fields usually associated with geopolitical thought (Luttwak, 1990; Blackwill & Harris, 2016). Whereas classical geopolitics focuses on military and territorial dominance, the geo-economic approach emphasizes the use of economic mechanisms such as trade agreements, flows of investment and sanctions, control over vital resources to affect regional and international outcomes. This field is a manifestation of the increasing importance of economic strength to enhance power status for states, within the globalized, interwoven economic system (Bremmer, 2014).

Geoeconomics and the Blue Economy Linkage The geoeconomics approach connects geoeconomics and the blue economy due to the significance of maritime resources and space as sources for creating wealth, trade, as well as exercising economic and political power. Oceans and seas provide the basis for various industries, including those related to fishing, energy generation, extraction of seabed materials, and others, but they are also key sites for the organization of international trade and capital flows. Within this context, the development of the blue economy is not just about economic and environmental aspects, but it is closely tied with the contestation for access, control, and use of marine resources and space. Scientific analysis reveals that, to some extent, blue economy expansion is causing reorganization of economic and political patterns of cooperation and conflict in the ocean space as countries and strong players are positioning themselves strategically to utilize resources, sea space, and infrastructure that serve the interests of the marine economy (Mallin & Barbesgaard, 2020).

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Additionally, security and the blue economy are interconnected, which implies that for maritime trade to occur, as well as resource and infrastructure protection in marine environments, security will need to be present at sea and at the marine interface. The very expansion of the water economy expands the strategic value of Maritime Security (Voyer et al., 2018). Thus, within the geoeconomics framework, strategic access and control of marine space and resources has become crucial for leveraging economic interests, advancing strategic influence, and influencing national trade development patterns.

Integrating geo-economic ideas into a Blue Economy strategy includes: (1) emphasis on strategic, resource-based planning – where economic activities are linked to national and regional security goals (Blackwill & Harris, 2016); (2) improving competitive performance in global maritime arenas for shipping, fisheries and offshore energy sectors; and (3) directing capital investments in crucial maritime infrastructure-ports, shipyards and renewable energy projects-that stimulate economic activity, while simultaneously augmenting economic security and influence in world affairs (Luttwak, 1990).

For landlocked countries, redefining the water economy from a geoeconomics perspective is particularly important, as the lack of direct access to the sea does not necessarily mean being excluded from the water economy value chain. These countries can use the capacity of inland waters such as rivers and lakes, trans transport corridors, dry ports, and trade networks connected to ports of coastal countries to participate in water economy-related activities. From this perspective, the country's geographical location, the quality of transit infrastructure, and the degree of access to maritime trade routes are among the determining factors of the economic capacity of landlocked countries; in such a way that improving trans boundary corridors and reducing transport barriers can increase the flow of maritime trade in these countries (Hiraide et al., 2022). Also, economic research shows that dependence on maritime transport and the higher cost of accessing global markets are one of the important structural constraints of landlocked countries (Pham & Sim, 2020). Therefore, within the framework of geoeconomics, the water economy for these countries can be understood not only as the direct exploitation of marine resources, but also as a set of economic, trade and strategic opportunities that can be achieved through inland waters, regional corridors, logistics infrastructure, cooperation with coastal countries and participation in international maritime trade networks (M. et al., 2021).

Integrating Blue Economy concepts and geo-economic principles will enable policymakers to develop programs in order to maximize economic advantages, ensure a higher degree of national economic independence and promote rational exploitation of natural resources. This will result in an integrated conception of ecological, economic and geostrategic principles, giving rise to Blue Geo-Economics, thus providing sustainable development concepts and integrating strategies.

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2.4 Constraints and Needs of Landlocked Countries

By their nature, LLCs face unique geographic and economic challenges that significantly influence their path of development. Given the geographical reality of not accessing the seas, countries without coastlines face significant disadvantages in terms of international shipping and maritime transportation, global supply chain management and the exploitation of oceanic resources (Voyer et al., 2018). The costs associated with the transportation of imports and exports tend to be higher, transactions along the countries' borders create delays and dependence to regional infrastructure can reduce economic independence. Consequently, most maritime-dependent sectors, like the maritime shipping industry, fishing and port services and related businesses are not an option for LLCs (Kowalski et al., 2015).

Beyond the supply side, non-resource-dependent countries face challenges related to cooperation with respective neighbors and governance. The dependence of the non-resource dependent country (LLC) on other transit and transit support services makes her susceptible to a disruption of diplomatic relations, trade policy shifts and to varying transit infrastructure and customs requirements (World Bank, 2017). This dependence may pose obstacles in terms of their competitive edge in the international shipping markets and reduce the potential gains of engaging in the internationally approved Blue Economy.

Despite geographical constraints, landlocked countries can participate in the water economy and benefit from water, trade and regional capacities by adopting models appropriate to their conditions. One of the most important areas is the sustainable exploitation of domestic and trans boundary water resources, including rivers, lakes and inland waterways, for activities such as aquaculture, inland fisheries, energy production and water tourism. In addition, the development of cross-border transport and trade corridors, improving logistics infrastructure and facilitating customs procedures are of fundamental importance, because empirical studies have shown that the characteristics and efficiency of cross-border corridors are related to the level of participation of landlocked countries in maritime trade, and the high costs of access to maritime transport can also be a serious obstacle to the economic development of these countries (Hiraide et al., 2022; Pham & Sim, 2020). On the other hand, investment in sectors such as freshwater aquaculture, hydroelectric power, and tourism based on inland water resources can provide the opportunity to create economic value from water resources without having a coastline. At the regional and international level, participation in trans boundary water agreements, cooperation with coastal and transit countries, and participation in maritime governance and trade mechanisms can strengthen the bargaining power and access of these countries to international markets; as recent research shows, the access of landlocked countries to the sea depends largely on the arrangements negotiated with transit countries and their bargaining power (Takele & Tveter, 2025). Therefore, the water

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economy for landlocked countries can be defined not as direct access to ocean resources, but as a set of economic, logistical, hydrological, and geoeconomics opportunities that can be realized through domestic water resources, trade corridors, transportation infrastructure, and regional and international cooperation.

Meeting these needs necessitates a geo-economic strategy that redefines the Blue Economy to encompass inland and trans boundary water systems. Intelligently by applying rivers, lakes, and a robust and mutually beneficiary partnership, countries can reduce the number of burdens of their geography and encourage sustainable growth and strength to economic the region.

Finally, it is clear that despite the significant limitations of not having access to the sea itself, the Blue Economy, in a broadened context, offers ample opportunities for landlocked countries. Through the inclusion of their needs and by the principle of integrated planning, cooperation at a regional level and diversified alternatives, they can participate in the expansion of such model, in a fair, sustainable and economical way.

2.5 The Position of Landlocked Countries in Regional and Global Economy

2.5.1 Geographical Economic Structure of Landlocked Countries

Landlocked countries (LLCs) are distinguished by a geographical and economic pattern that influences its development trends extensively. The defining geographical feature is that these are countries whose land area is landlocked by other countries and have no direct access to any seaport, oceanic resources or trade. Geographical restriction results in higher transaction costs and overdependency on intervening countries along its transit network. It is also made vulnerable to external factors.

Agriculture, mining and other inland resources-based industries usually make up the basis of LLCs' national economies and give the least chance to participate in ocean-based industrial and international trade activities. Due to remoteness and exclusion from global value markets, LLCs generally suffer from slow economic growth, lower flow of foreign direct investment (Fi) and loss of competitiveness. However, LLCs can still observe smart economic adaptation strategies, such as creating regional trade routes, boosting fish cultivation in lakes/rivers and exploiting the renewable energy potential of lakes and rivers.

The geo-economic significance of landlocked countries derives from their position at crucial nodes of regional trade corridors, trans boundary watersheds, and inland mineral-rich areas. Understanding their geo-economic structures is prerequisite to the formulation of policies on integrated into broader Blue Economy frameworks which leverage inland waterways and enhance connectivity to marine-based frameworks.

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Table 1: Key Geographical and Economic Indicators of Selected Landlocked Countries

Country	Land Area (km^2)	Population (millions)	GDP (USD billion)	Major Economic Sectors	Access to Navigable Waterways
Afghanistan	652,230	40.1	78.5	Agriculture, Mining, Services	Amu Darya River
Bolivia	1,098,581	12.0	40.3	Mining, Agriculture, Gas	Lake Titicaca, Rivers
Nepal	147,516	30.0	36.6	Agriculture, Tourism, Hydropower	Rivers, Himalayan Lakes
Ethiopia	1,104,300	123.0	111.3	Agriculture, Services, Manufacturing	Rivers (Blue Nile)
Kazakhstan	2,724,900	19.1	232.0	Mining, Oil & Gas, Agriculture	Rivers, Caspian Sea via pipeline access

Sources: UNCTAD (2021), World Bank (2017), OECD (2016) and national statistical agencies.

The table 1 gives a glimpse into the geographically relevant area, populace, and economy of an "average" landlocked state. These states, though unable to access the seas directly, utilize inland water bodies like inland lakes and river systems for transportation, energy generation, and aquaculture. Agriculture and mineral exports will remain the prime indicator of a state having plenty of raw material sources and suffering limitations of physical distance. Understanding these indicators is important to assess the approach that LLCS can practice in an individualized blue economy and regional trade system.

2.6 Structural Challenges in Accessing Water Resources

Access to water resources, crucial for development and good management of countries that are both geographically land locked and arid, is hindered by issues such as geographic, economic, infrastructural and political constraints, and hence by its structural impediments (UN-Water, 2020). Land-locked countries must cooperate with and depend upon neighbors for navigation and also to secure their sharing and quality management of waters, many of which run along borders and traverse national boundaries, to such an extent that these water transactions have become major arenas for geopolitical struggle and legal controversy over rights to agricultural, industrial and energy uses of water resources (Sadoff & Grey, 2002).

Despite some possibilities for landlocked states to operate under modified water economy models, Landlocked states suffer from a set of inherent obstacles to their ability to independently and sustainably utilize water resources:

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1. Geopolitical vulnerability of riverine countries vis-à-vis upstream countries with special relation to trans-boundary watershed resources where access and control are often determined by policies and actions of upstream riparian state, building and operating of dams, diverting waters, and related policy trends so, potential inequalities among benefiting countries might have their role in sharing of benefits and control (Park et al., 2021; Varady et al., 2023).

2. The lack of strong water and transportation infrastructure, which is exemplified by an absence of the capability to store, transmit water, irrigating networks of energy infrastructure, and inland water navigation. Lack of strong water and transportation infrastructure means these nations are less able to use their water to generate economic growth and value.

3. Constraints imposed by institutions and governance arrangements like poor coordination between agencies; low capacity of concerned agencies to put trans boundary water resources management and environmental protection agreements into effect; information sharing deficits and poorly organized cooperation mechanisms may hamper the effectiveness of allocation and protection of the aquatic environment. (Kistin Keller, 2012; Varady et al., 2023)

4. Climate change and hydrological variability (in the form of rainfall patterns, flows, droughts and floods) contribute to increased water uncertainty and lower long-term economic planning ability for water-dependent economies. Incorporating climate adaptation measures into trans boundary water governance as well as building adaptive and participatory institutions is therefore important to improve the resilience of landlocked states (Varady et al., 2023; Timmerman et al., 2026).

The spatial constraints diminish the opportunities for landlocked countries to participate deeply in the global economic water use models like coastal nations, which have access to marine resources, ports and sailing routes. Landlocked nations are reliant solely on their own water resources, shared waters, as well as the transporting capacity of the bordering states to trade the water resources globally; this implies that their water economy may be not only limited by their national natural potential, but even strongly by their connecting transport infrastructure; the regional river authorities; bilateral agreements on river basin waters, as well as regional politics (Hiraide et al., 2022; Park et al., 2021). Seen this way, the spending on logistics infrastructure and on water infrastructure, improving shared water governance institutions and constructing regional compacts will simplify the procedures of entering the international markets and strengthen the integration of landlocked countries to global economic value chains related to water utilization. Hence, overcoming such structural constraints would also improve water access capacity as well as deepen their ability to integrate into the economic activity related to global waters.

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Table 2: Structural Challenges in Accessing Water Resources in Landlocked Countries

Challenge Dimension	Key Indicators / Metrics	Severity / Impact (1–5)	Example Countries
Geopolitical Dependency	Dependence on neighbouring/up/down-stream countries	5	Afghanistan, Nepal
Inadequate Infrastructure	Percentage of irrigated land, number of dams, river traffic	4	Ethiopia, Bolivia
Institutional & Governance Gaps	The existence of regulation, the co-ordination between organizations of different sectors	4	Kazakhstan, Nepal
Environmental & Climate Pressure	River flow annual variability (m3/s) flood or drought occurring every 2-4 years	5	Ethiopia, Afghanistan

Sources: UN-Water (2020), Sadoff & Grey (2002), Park et al. (2021); Varady et al. (2023), Kistin Keller (2012), Timmerman et al. (2026).

This Table 2 Lists the Main Structural Problems Affecting Water Acquisition for Landlocked Nations Geopolitical dependence is a key issue due to shared resources of shared rivers with neighbouring countries. Poor infrastructure results in an ineffective distribution and management of water resources. Weaknesses in governance will consequently reduce institutional efficiency to manage water and to apply policy. Climate related environmental problems such as erratic flow of rivers and extreme events such as droughts and floods, aggravates weaknesses of landlocked countries. Combined effects of structural challenges demand united actions, cross-country cooperation, and infrastructure investments, in order for Land Locked countries participate successfully in a wide Blue Economy ecosystem.

2.7 Transport, Trade and Corridor Limitations

Land-locked countries are at a severe disadvantage in transport and trade due to lack of port facilities and access to sea, and such limitations may lead to greater transport costs, increased transport times and dependence on transport infrastructure and the legal environment of countries of passage transit (Kowalski et al., 2015). The existing trade routes linking to the world markets for landlocked countries are often characterized by congestion problems and lack of maintenance. Landlocked countries face a set of logistical and trade constraints that increase the cost and uncertainty of their access to regional and international markets:

- First, high transport costs are an important structural barrier, as these countries are forced to pass part of their trade route through the territory of transit countries to access global markets, resulting in additional transport costs and longer transit times (Pham & Sim, 2020).

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- Second, dependence on the infrastructure and policies of neighboring countries, including road, rail, port and customs networks, makes the foreign trade performance of landlocked countries largely affected by the quality and reliability of cross-border corridors, such that the characteristics of transport corridors have a significant relationship with the maritime trade flows of these countries (Hiraide et al., 2022).
- Third, weak transport and logistics infrastructure, including the lack of efficient rail and road networks, logistics hubs, and proper connectivity between different modes of transport, increases the cost and time of trade and makes it difficult for these countries to integrate into regional value chains (Arvis et al., 2010).
- Fourth, weak institutional coordination and corridor management can reduce trade efficiency by complicating customs procedures, increasing border crossing times, and creating uncertainty in the transit process.

Recent research also shows that the logistics costs of landlocked developing countries depend not only on geographical distance, but also on the bargaining power of these countries vis-à-vis transit countries and the quality of institutional and transport arrangements between them (Takele & Tveter, 2025). Therefore, lowering the costs of trade in these regions involves building intermodal infrastructure, making management of corridors effective, harmonizing regulations and customs, and building cross-border collaboration.

These can be effectively mitigated through enhanced regional infrastructure, improved corridor management, simplified customs procedures and through greater participation in multilateral trade agreements. Increased investment in transport routes and infrastructure facilitates economic development, which also facilitates participation of landlocked countries in the Blue Economy initiatives through inland and transborder waterways, regional ports and coordinated logistic frameworks.

Table 3: Transport and Trade Constraints in Selected Landlocked Countries

Country	Transport Cost Premium (%)	Transit Dependency Level (1–5)	Corridor Quality Index (0–1)	Major Trade Corridors
Afghanistan	45	5	0.42	Central Asia Regional Corridors
Bolivia	50	4	0.48	Bioceanic Corridor, La Paz–Antofagasta
Nepal	40	4	0.51	Kathmandu–Birgunj–India Corridor
Ethiopia	35	4	0.55	Addis Ababa–Djibouti Corridor

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Kazakhstan	30	3	0.60	Trans-Caspian Trade Corridor

Sources: Kowalski et al. (2015), UNCTAD (2021), OECD (2016), and World Bank (2017).

The table displays how transport and trade are hampered for landlocked countries as a result of the constraints of transit infrastructure and the high cost associated with transit services. The use of transit services and high cost of transport are generally observed in cases including Bolivia and Afghanistan. The standards and condition of corridors can vary, as are the maintenance, operating system, and facilities of corridors. Management of corridors and investment in transport infrastructure and international partnerships will help to reduce these challenges and connect landlocked countries to global markets and the scope for customized approaches to achieve the Blue Economy goals.

2.8 Geopolitical and Geostrategic Dependencies

Geopolitical and geostrategic factors influence landlocked countries because their location is defined by a lack of access to the open ocean; the nation's economy and political stability may depend on the infrastructure policies and cooperation of the transit countries which control port access, trading networks and access to transborder waterways (Luttwak, 1990; Blackwill & Harris, 2016). Such dependencies have political and economic consequences for national security.

Key aspects of geostrategic and geopolitical dependencies include:

- ***Transit States:*** Nations lacking coastlines are dependent on their neighbors to achieve an outlet via an all-weather harbor and the transport infrastructure to get goods to and from the market. Political turbulence or regulation in transit states can interrupt trade flows (Kowalski et al., 2015).
- ***Strategic Vulnerability:*** Proximity to contested spaces, or spheres of conflict and geopolitical competition, particularly rival powers within a region, expands exposure to external coercion, economic sanctions, or imposition of foreign will (Blackwill & Harris 2016).
- ***Regional Alliances and Conventions:*** Participation in river basin organizations, multilateral agreements, regional trade agreements will mitigate dependence by creating institutions and agreements for cooperation (Luttwak 1990).
- ***Participation in the Global Supply Chain:*** Successful participation hinges on trade and partnerships not based only on neighborhood but requiring careful consideration of alternative markets for investing in neighboring third countries.

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Table 4: Geopolitical and Geostrategic Dependencies of Selected Landlocked Countries

Country	Transit Dependency Level (1–5)	Strategic Vulnerability (1–5)	Regional Cooperation Initiatives	Key Geostrategic Considerations
Afghanistan	5	5	Central Asia Regional Economic Cooperation (CAREC)	Access to conflict zones; reliance on Pakistan and Iran for sea ports
Bolivia	4	4	Andean Community; Bioceanic Corridor agreements	Historical loss of maritime access; dependency on Chilean ports
Nepal	4	3	South Asian Association for Regional Cooperation (SAARC)	Reliance on India for trade and river water
Ethiopia	4	4	The Intergovernmental Authority on Development (IGAD)	Djibouti is giving access to the Red Sea through, with border tensions along it.
Kazakhstan	3	3	Eurasian Economic Union (EAEU)	Caspian Sea pipeline access; influence of Russia and China

Sources: Luttwak (1990), Blackwill & Harris (2016), Kowalski et al. (2015), Luttwak, (1990), and Takele & Tveter, (2025).

In terms of landlocked economies chosen in this study, the table highlights their geoeconomics and geostrategic dependencies. Both over dependence on transit and the limitations arising from such vulnerability are important points preventing independent development paths. Regional cooperation initiatives and multilateral agreements provide mechanisms to avoid such vulnerabilities. By strategically managing geopolitical dependency, landlocked countries will improve their capacity to use a customized Blue Economy: waterways (inland transport), trade corridors (transit states) and multilateral arrangements.

2.9 The Need to Redefine the Blue Economy for Landlocked Countries

2.9.1 Limitations of Classical Definitions of the Blue Economy

Most traditional definitions of the Blue Economy focus on utilizing marine resources as economic opportunity, in part through marine sector development. These approaches, however, are criticized for their overly reductive

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definitions which do not align well with current debates on environmental governance, sustainability, and socio-economic equality (Silver et al., 2015). A problem with such sectoral emphasis, is that, at its most traditional, the Blue Economy has been defined simply as ocean 'sectors'; namely fisheries, maritime transport, coastal tourism and offshore energy, downplaying other ecological contexts and relationships relevant to resource security over the longer term.

Another important deficit relates to how little sustainability considerations are built into most definitions. While conventional approaches acknowledge the economic value of the resources of the ocean, they often underestimate the cumulative ecological damages of overexploitation, pollution and the disruption of marine habitats and climate patterns (Voyer et al., 2018). In this way, the definition can bolster development and exploitative practices rather than adaptive and ecological approaches.

The third such concern is the lack of attention to equity and social inclusion. No traditional conceptualization takes account of the distributional consequences of the economy 'on the ocean', or the struggles faced by fishers that work on small scale, island-dwelling indigenous, or coastal people. As a result, the Blue Economy has been accused of being and promoting an increasingly inequitable distribution of resources and decision-making power as well.

Also, the traditional discourse on the water economy with its emphasis on marine activities and the direct consumption of ocean and marine resources may also tend to play down the function of landlocked countries within the framework of the overall water economy system. While their geographical limitations prevent them from having direct access to marine resources, regional trade links, transport corridors, trans-boundary value chains, and interdependence among shared water resources enable them to participate indirectly in water economy-related activities. The scientific literature on the water economy also shows that the concept is not limited to the extraction of marine resources, but encompasses a set of economic, social, environmental, and institutional activities and relationships that are shaped at different scales and through regional and global networks (Voyer et al., 2018; Silver et al., 2015). On the other hand, research on trans-boundary water governance shows that shared water resources cannot be managed within separate political boundaries and that cooperation between countries, even those without coastlines, is essential for the sustainable exploitation of these resources (Varady et al., 2023). Therefore, limiting the water economy to coastal countries can present a reductionist picture of the structure of the contemporary economy. In contrast, a network and geoeconomics approach that considers the relationships between domestic and trans boundary water resources, trade corridors, value chains, and indirect access to the maritime economy has greater capacity to explain the place of landlocked countries in the contemporary water economy.

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In general, these shortcomings suggest that traditional views of the Blue Economy need significant changes. New viewpoints currently support a wider, multidimensional framework based on ecological sustainability, social equity, technological advancement, regional integration, and adaptive governance. This broadened strategy more effectively connects the Blue Economy with international sustainable development goals and the changing difficulties in managing marine and freshwater resources.

2.10 Conceptual Requirements for Landlocked States

Reconceptualizing the water economy for landlocked countries requires conceptual changes that broaden the scope of the concept beyond predominantly ocean-based frameworks. A significant portion of the water economy literature has focused on the sustainable management of marine and coastal ecosystems, sea-dependent economic activities, and marine value chains; as a result, the capacities and constraints of countries without direct access to the sea have received less independent attention in this literature (Silver et al., 2015; Voyer et al., 2018). For landlocked countries, value creation related to the water economy does not necessarily come from direct exploitation of ocean resources, but can also be generated through freshwater and trans boundary resources, domestic aquaculture, hydroelectric power, water-based tourism, trade and logistics corridors, and linkages to regional and global value chains. From this perspective, the concept of "water" should be transformed from a purely geographical concept related to proximity to the sea to a functional and networked concept that encompasses the capacity to create economic, social and environmental value from water resources and the economic connections associated with them. Such an expansion is consistent with approaches that consider the water economy as a set of activities and interactions between the economy, the environment, communities and governance (Silver et al., 2015; Lee et al., 2020). Therefore, an appropriate conceptual framework for landlocked countries should include, in addition to domestic water resources, trans boundary dependencies, transit infrastructure, trade linkages, regional cooperation and water governance arrangements in the analysis of water value creation; an approach that can provide a more appropriate theoretical basis for explaining the indirect participation of these countries in the water economy.

Initially, the idea needed to be expanded to include hydro-economic connections that are independent of geographical coastlines. These encompass trans boundary river basins, inland waterways, freshwater ecosystems, and virtual water flows integrated into trade (Allan, 2011; UN Water, 2021). For numerous landlocked nations, such systems serve as the main avenues by which water-related economic activities can be expanded and incorporated into national development plans.

Secondly, the updated conceptual framework should highlight geo-economic interdependencies, especially the structural dependence of landlocked nations on transit states for access to international shipping routes. This

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connection influences transportation expenses, competitiveness, and the ability to take advantage of maritime-related value chains (Arvis et al., 2010). A restructured framework must consequently include corridor governance, regional integration, and negotiated port access as essential elements of the Blue Economy.

Third, the conceptual redefinition of the water economy for landlocked countries should emphasize the concept of strategic resource substitution, meaning that in the absence of direct access to marine resources, water-related economic capacities can be created through alternative resources and activities in domestic and trans boundary areas. In this framework, hydroelectric power generation, aquaculture in inland waters, efficient water resource management in agriculture, river and lake-based tourism, and other economic activities dependent on freshwater resources can form part of the water economy capacity of landlocked countries. Studies on the water economy show that this concept has the capacity to encompass a wide range of economic activities dependent on water resources, and water value creation is not necessarily limited to the direct exploitation of marine ecosystems (Lee et al., 2020). In this regard, the development of domestic aquaculture can be considered as one of the paths to economic value creation based on freshwater resources through food supply, employment creation and income generation, provided that it is accompanied by the principles of ecological sustainability and water resources management (Naylor et al., 2021). Also, in many landlocked countries, hydroelectric energy is considered one of the most important links between water resources and economic and energy development and can, along with other renewable resources, contribute to economic diversification and reduce dependence on fossil fuels (Zarfl et al., 2015). Accordingly, “water potential” should not be considered solely a function of geographical proximity to the sea; rather, this potential can be created through a set of freshwater resources, technologies, infrastructure and environmentally friendly economic activities.

Fourth, we must include a climate-water vulnerability dimension in the framework to recognize the fact that landlocked countries often appear to be more vulnerable to droughts, degradation of ecosystems, and variations in hydrological patterns (IPCC, 2022). Taking resilience indicators into Blue Economy planning seems thus a matter of concept.

In the end, a modified policy implies a paradigm shift for inclusive governance. The classic practices in maritime governance (EEZs, coastal zone management, naval strategy) are devoid of significance for landlocked states. Conversely, collaborative water diplomacy, basin arrangements and transnational environmental regimes should serve as fundamental premises for a landlocked Blue Economy (Zeitoun & Mirumachi, 2008).

Collectively, these components serve as an operational framework for landlocked developing countries to operate in, reap benefits from and contribute to the international Blue Economy without access to the sea.

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2.11 Theoretical Pillars of the "Coastless Blue Economy"

2.11.1 Transboundary Waters Economy

In laying a conceptual foundation for the "Coastless Blue Economy", the definition of water-related economic opportunities requires not only extending economic opportunities beyond maritime zones but also emphasizing in its analyses the trans boundary aspect of hydrology. Trans boundary waters such as rivers, lakes, aquifers and river basins are in effect landlocked countries' fundamental spatial and functional sphere for organizing their blue economic opportunities. "These [hydrological systems] constitute "eco-corridors" and geo-economic infrastructures which shape developing country paths, region interconnectivity and access to international markets" (Zeitoun & Mirumachi, 2008).

In the conceptual framework, the Trans boundary Waters Economy is based on three interrelated foundations: ***First:*** transnational waters can be analyzed in their capacity as jointly held economic resources, for the benefits and costs arising from their utilization, of which national boundaries are of little if any significance. In landlocked countries, through international river systems like, for example, the Amu Darya, Danube and Mekong, there is access to a multitude of water-related economic capacities in the form of hydroelectric power, water supply for irrigation and aquiculture, transport by inland navigation, where possible, and water ecosystem services. Research on the Amu Darya basin shows that the management and development of water infrastructure can generate significant economic benefits in the energy and agricultural sectors, and that there is potential for increased shared benefits if countries in the basin cooperate (Jalilov et al., 2015; Jalilov et al., 2018). Therefore, the economic value of trans-boundary water resources does not depend only on the amount of water available within a country's territory, but also on the allocation, storage and transmission infrastructure, water use patterns, and cooperation mechanisms between the interested countries. In such a framework, trans-boundary rivers can be one of the main foundations for the formation of a "water growth" strategy for landlocked countries, as they provide the possibility of creating economic value from water resources through the linkages between water, energy, agriculture, environment, and regional cooperation, even in situations where the country lacks a coastline.

Secondly: The economic significance of trans boundary waters is largely influenced by water diplomacy, collaborative governance, and institutions at the basin level. Global agreements like the UN Watercourses Convention (1997) and the UNECE Water Convention (1992) highlight fair and rational use, collaborative management, and harm avoidance, which are crucial tenets for evolving shared water resources into catalysts for sustainable development (Rieu-Clarke et al., 2012). For landlocked nations, these governance systems take

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the place of the maritime regulatory frameworks that coastal countries employ to oversee their Exclusive Economic Zones (EEZs).

Third: Trans-boundary water systems create geo-economic externalities that affect transport expenses, hydropower exchange, agricultural competitiveness, flood management, and climate adaptability. Hydro political dynamics, whether collaborative or conflict-ridden, shape how landlocked nations can utilize water-related resources for growth (Wolf, 2007). In this context, the Trans boundary Waters Economy acts as the functional counterpart to the maritime economy, functioning as the primary "blue space" through which landlocked nations engage with regional and global economic networks.

Consequently, the Trans boundary Waters Economy serves as a fundamental theoretical foundation of the Coastless Blue Economy. It provides a redefinition of water not as a natural resource but as a key economic sector which requires inter-institutional management, regional integration and geoeconomics foresight in order to unleash growth.

2.11.2 Virtual Blue economy

The concept of "Virtual water" has been proposed as a key conceptual underpinning to the still building structure of the Coast Less Blue Economy (CBE). In principle, virtual water refers to the water contained in goods and services (particularly industrial and agricultural products often require large water inputs for their production), and as a way to enable land-locked countries (many of which may experience problems of climate impacts, limited access to the largest fresh sources, and water-related security and water problems) to address constraint of scarce internal freshwater resources and meet economic prosperity agendas (Allan, 2011).

From a geo-economic perspective, virtual water flows make landlocked countries be differently able to engage in regional and global markets. The import of water-intensive goods such as cereals, meat, textiles and processed foods effectively enables a country to "import" water embedded in these goods and reduce pressure on its limited resources (Hoekstra & Mekonnen, 2012). In this way, countries short of water could gain water for food security, manage water use, and release local water in favor of more important activities: energy, urban use, as well as climate change-resistant industries.

On top of this, the application of virtual water serves as a building block in reorienting national water policies, shifting them from self-sufficiency to smart interdependence. In the case of land-locked countries experiencing water scarcity such as, but not limited to Afghanistan, Ethiopia, Mongolia, and Niger, virtual water trade can be regarded as an insurance policy against structural water scarcity for a particular state (Conar et al., 2016). In

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addition, it contributes to regional cooperation by implicitly including these states in global supply chains, thereby guaranteeing access to water indirectly.

The Virtual Blue economy is consistent with sustainability requirements. Given that the progress of climate change, with associated uncertainty of water availability (IPCC, 2022), moves virtual water streams within systems protect local economies from droughts, losses of crops, low rivers, etc. (IPCC, 2017). However, they pose geo-economic risks: dependence on the "exterior", vulnerability to the evolution of the price, risk (political) relating to food imports (Seekell et al., 2017). In this perspective, the virtual water inclusion within Coast less Blue economy needs accurate knowledge of its stabilization effects and systemic risks.

The Virtual Blue economy is a concept by which the conceptual limit of the Blue Economy beyond oceans and freshwater can be extended, since it is understood that water is a globally traded commodity, thus a commodity integrated into a global production network. In this framework, landlocked countries find an economical way to realize water-efficient economic development.

2.11.3 Water Diplomacy

Water Diplomacy is essential to the theorising of the Coast Less Blue Economy; most particularly as it is on transboundary water resources that so many land-locked nations are economically interdependent and dependent on hydrologic stability. As trans boundary waters become increasingly linked with political, economic, and environmental issues, water diplomacy is given institutional space to tackle those complex issues through collaborative negotiation, institutional development, and collaborative governance (Islam & Susskind, 2013).

The Absence of Coasts in the absence of sea access for landlocked states, dependence on basins which begin beyond national frontiers becomes greater via rivers, basins and aquifers. River basins often cut across national frontiers and these trans-boundary basins present both problems and opportunities for riparian states to ensure: fair allocation of water equitable management and development of hydropower; Shared management of flood risks; water and pollution control; conservation of the environment; access to transport corridors. Water diplomacy provides the means for non-landlocked states to share resources and thereby secure fairer terms of trade, for example, by engaging in mutually beneficial cooperation with neighbors in hydropower, by being able to negotiate their way to fair access to their neighbors' transport routes, and by transforming dependence on hydrological resources into economic independence and increased participation in regional value chains (Sadoff and Grey 2002).

Theoretical significance of water diplomacy arises from 3 basic elements:

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- To begin, water diplomacy emphasizes peace and conflict resolution over politics concentrated in nation-states. Instead of water and trans boundary rivers and basins acting primarily as catalysts for tensions, water diplomacy examines these natural systems through the lenses of multifaceted interactions of state actors, local communities, regional stakeholders and scientists (Islam & Madani, 2017). This Systems' Lens aligns well with the basic premise of Coastaless Blue Economy — a redefining of water as shared economic space rather than ownership in any defined geographical space.
- Secondly, water diplomacy brings attention to what she considers as particularly important to the security of land-locked countries –legal and institutional arrangements such as the UN watercourses Convention (1997), the Helsinki Rules (1966) and agreements concerning basin states and agreements within a specific river such as the agreements on the use of the Senegal River, the Mekong and the Danube which may foster fair use, harm avoidance, information exchange and inclusive governance (Rieu-Clarke et al., 2012). This is seen as effectively substituting for maritime governance regimes like Exclusive Economic Zones for countries lacking access to the sea.
- Third, water diplomacy increases geo-economic stability. It helps reduce the "transaction costs associated with hydrological vulnerability, leading to the encouragement of long-term commitments for infrastructure investments, trading energy (e.g., hydropower), trans boundary traffic and adaptation to climate variability." With management cooperation, Shared Water systems can become 'launch pads for regional integration, shared marketplaces and resource-based growth corridors' (Zeitoun & Warner 2006). It is similar to the role that sea lines play in ensuring stability for coastal economies, thereby placing water diplomacy at the center of the Coastless Blue Economy.

In the end, Water Diplomacy redefines water as a tool for collaboration instead of conflict. For landlocked nations looking to redefine their role in the global Blue Economy, water diplomacy offers the necessary institutional and political framework to enable this change.

2.11.4 Economy of Blue Water Technologies

The economics of water technologies can be referred to as a set of technologies and innovations that help create economic value and increase the sustainability of water resources by monitoring, managing, conserving and using water resources more efficiently, through scientific and digital tools. These technologies include remote sensing and geographic information systems, smart monitoring networks, digital water management technologies, water resources modeling, and drought and flood forecasting and management systems. For landlocked countries, such technologies are of greater importance because they can alleviate some of the constraints imposed by geographical location and pressure on domestic and trans-boundary water resources by

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increasing water use efficiency, improving decision-making, and strengthening adaptive capacity. Scientific research shows that digital technologies and smart systems can improve water resource management by improving data collection and processing, resource monitoring, hydrological event prediction, and more efficient water allocation (Garrick & Hall, 2014; Ghaffarian et al., 2019). Also, the use of remote sensing technologies and spatial data allows for monitoring water resources on large scales, even in trans-boundary basins, and can help reduce information uncertainty and strengthen cooperation between interested countries (Tarpanelli et al., 2022). Thus, under a landlocked country's water economy regime, water technologies may therefore be treated as a "strategic enabler which enhances capacity for value creation out of natural and cross-border water resources through improved water-use efficiency, reduced hydrological risks, and development of environmentally sustainable capacities that also promote economic sustainability".

Among the most crucial technologies in the water economy for landlocked countries: remote sensing and satellite data; hydro informatics tools; Geographic Information Systems (GIS); water treatment and recycling technologies; digital modeling of watersheds; and online monitoring of trans-boundary water sources. By offering independent and timely information (with relatively low uncertainty) on the condition of water resources, water availability and changes in storage; on river flows and extreme hydrological phenomena (droughts, floods); these tools can improve landlocked countries' capacity for evidence-based decision-making and alleviate the informational asymmetry between countries located within the same watershed. It has been scientifically proven that remote sensing and satellite data have a crucial role in the monitoring of water resources and in the analysis of hydrological changes, particularly where there is little ground-based data availability (Van Dijk et al., 2016; Tarpanelli et al., 2022). In terms of water management and allocation, the use of hydro informatics software and simulation models would allow us to assess various scenarios, forecast resource changes and better manage and decide (Abbott et al., 2019). Besides, the implementation of technologies for efficiency in water use (e.g. Efficient agriculture with drip irrigation, smart metering, water recycling, and reuse of water in urban and industrial areas) improves the productive capabilities of agriculture and of the urban sector by cutting down waste and enhancing the economic profitability of a finite natural resource (Perry & Steduto, 2017). Under this lens, water technology is not simply a tool but is the source of a strategic capacity within a "landlocked water economy" that, by mitigating uncertainty, increasing efficiency, and strengthening governance capability, could contribute to reducing the impact of the location of the landlocked countries on their water economy.

Most relevant technologies for the water economy of landlocked countries Technologies that are particularly relevant for the water economy of landlocked countries include remote sensing and satellite data, hydro

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informatics, geographical information systems (GIS), water treatment and recycling technologies, watershed digital modeling, and online monitoring systems of trans-boundary water resources. These technologies can enhance landlocked countries' capabilities for data-informed decision-making and reduce part of the information asymmetry between countries within a watershed by providing real-time or near-real-time and independent data on water resources status, storage and change, riverine flows, drought and flood events. Studies on remote sensing and satellite data suggest its importance in managing water resources and assessing hydrological change, particularly for areas affected by the absence of monitoring stations (Van Dijk et al., 2016; Tarpanelli et al., 2022). Within water management and resource allocation, tools from hydro informatics and models could be used to investigate several scenarios, predict future changes in the availability and strengthen management capacity (Abbott et al., 2019). In addition, water-efficient technologies (drip irrigation, smart meters, wastewater recycling, water reuse etc.) can improve the economic and productive capacity of the agricultural sector and urban agglomerations by reducing water losses, and strengthening the economic efficiency of limited water resources (Perry & Steduto, 2017). In a broad sense, technology can not only be a means, but also a factor of productive, governance capacity, particularly the "landlocked water economy." Reducing uncertainties by increasing the efficient use of water and improving decision-making processes, these technologies may partially alleviate the disadvantage of landlocked Ness.

2.11.5 Overseas Port Investments

Investment and long-term arrangements for access to foreign ports can be used as a geoeconomics tool to reduce the geographical constraints of landlocked countries. It is possible to establish steadier access to the global shipping trade network with: partnership in the design, construction and operation of a port terminal, long-term leasing of individual terminal capacities or entire terminal facilities, long-term supply contracts and interconnection between seaports and hinterland. Scientific research shows that the characteristics and efficiency of cross-border transport corridors and the degree of access to ports play an important role in determining the maritime trade flows of landlocked countries (Hiraide et al., 2022). This means arrangements in accordance with local ports of those coastal countries could reduce their trade route vulnerability as well as trade flow costs in intermediary countries, enhancing reliability of flow, for example (Pham & Sim, 2020). On account of the supply network and potential impacts and disturbances (political, economic and infrastructure), multiple ports and multiple transport corridors will enhance the ability to be non-vulnerable to a landlocked country’s economy (Pham & Sim, 2020). Thus, in a geoeconomic approach, negotiating access to these ports beyond a transaction could make the economy build a more “permanent connection” to the seaborne network, enhancing negotiation capacity with the countries in the corridor and developing its resistance to supply disruption.

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They can encompass joint construction or operation of port terminals, public private sector joint ventures on container terminals, or designation of specific logistics zones, as well as establishment of dry ports linked to seaports via transport corridors using intermodal services. Scientific research shows that dry ports, as inland intermodal terminals, can transfer some of the functions of seaports, including cargo handling and storage, customs clearance, and connection to rail and road networks, to the hinterland, thereby facilitating landlocked countries' access to maritime trade (Hanaoka & Regmi, 2011; Khaslavskaya & Roso, 2020). In addition, the development of cross-border corridors and coordination between ports, shipping companies, customs agencies, and other actors can increase the reliability of the flow of goods and reduce the time and cost of transportation (Mombeni et al., 2019). From a geoeconomics perspective, such infrastructures are not only technical means of transport, but can also increase the bargaining power of landlocked countries in their interactions with transit countries and regional ports; recent empirical evidence also shows that trade bargaining power is associated with reduced logistics costs for landlocked countries (Takele & Tveter, 2025). In addition, participation in port and logistics projects can provide the basis for the transfer of knowledge and experience in the fields of terminal management, logistics planning, port governance and corridor management. Therefore, these arrangements can be considered as one of the components of the geoeconomics framework of landlocked countries, which, by creating physical and institutional connections between the domestic economy and maritime networks, partially offsets the constraints of landlockedness and develops the capacity for the formation of a "landlocked blue economy".

In recent years, the strategic access of landlocked countries to foreign port infrastructure has become increasingly important in the context of trade and geoeconomics policies. As landlocked economies, such states must use port infrastructure on their coastal neighbor's coast and the land-based land and multimodal transit routes linking their economic centers to these international seaports. There is empirical evidence indicating that some economies in landlocked regions have a high degree of dependence on particular ports in neighboring nations, with significant disturbances to such transborder infrastructures possibly disrupting their supply chains and trade routes (Verschuur et al., 2022). From this standpoint, landlocked countries' involvement in sea-access networks either by investment and lease-operating agreements or by the setup of logistical arrangements, supply chains and transport routes enables us to obtain a level of choice for ensuring adequate and diverse access to world trade at more dependable and assured levels. Studies of transit corridors further argue that enhancing the quality and number of linkages of landlocked countries with ports abroad is conducive to greater stability in trade routes and makes any dependence on one port/corridor less fragile and uncertain (Hiraide et al., 2022). Ultimately, investing in and accessing port infrastructure to integrate these facilities into national transportation networks may mitigate some of the supply-chain and physical constraints faced by landlocked states through

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diminishing costs to reach ports, enhancing service reliability, and creating closer ties with the global value chains. Participation in foreign port networks thus qualifies as among landlocked countries' essential geoeconomics tools for enhancing supply-chain resilience, fostering more diversified trade routes, and attenuating vulnerability to geopolitics or infrastructure disruptions.

3. METHODOLOGY

3.1 Research Design

The study was carried out with an approach used based on a meta-concept analysis and a literature review. The purpose of choosing this approach is to examine the conceptual evolution of the blue economy, identify its scope and geographical orientation, examine the structural constraints of landlocked countries, and finally integrate existing theoretical and empirical evidence to develop a conceptual framework called the Coast Less Blue Economy (CBE). The choice of an integrative review approach is consistent with the nature of the research problem because this study does not seek to statistically test a predetermined relationship, but rather aims to integrate the scattered literature in the areas of the blue economy, the geography of the blue economy, landlocked countries, maritime access, transport infrastructure, trade corridors, domestic and trans boundary water resources, and regional cooperation into a coherent analytical framework. A synthesis review allows the findings of conceptual, theoretical, empirical, and interdisciplinary studies to be examined together and lead to new conceptual insights through a process of analysis and synthesis (Whittemore & Knafl, 2005).

3.2 Literature Search Strategy

To identify relevant studies, a structured search was conducted in reputable scientific databases and resources, including Scopus, Web of Science, ScienceDirect, SpringerLink, Wiley Online Library, Taylor & Francis Online, and SAGE Journals, and Google Scholar was used as a complementary tool to identify and track relevant studies. The search strategy was based on a combination of keywords related to four main areas: blue economy, including Blue Economy, Blue Growth, Ocean Economy, and Marine Economy; geography and space of the blue economy, including Geography of the Blue Economy, Spatial Blue Economy, Coastal Blue Economy, and Land-Sea Interface; landlocked countries and maritime access, including Landlocked Countries, Maritime Access, Sea Access, and Port Access; and trans boundary connectivity and systems, including Transport Corridors, Trade Corridors, Port Connectivity, Regional Connectivity, Transboundary Water, and Logistics Infrastructure. These keywords were combined using the logical operators AND OR to identify studies related to its spatial, infrastructural, commercial, water and institutional dimensions, in addition to direct studies on the water economy.

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3.3 Sources and Databases

In selecting sources, peer-reviewed scientific articles published in reputable international journals were given priority, and books and basic scientific works were also used when necessary. Reports from international organizations and other institutional sources, when used, played a complementary role and were not the main basis for the theoretical argument of the study. Studies were included in the analysis process when they had a direct or meaningful thematic relationship with the water economy, water growth, marine economy, geographical scope of the water economy, landlocked countries, access to ports and sea, transport corridors, regional connectivity, domestic and trans boundary water resources, governance or related infrastructure. Non-scientific sources, commercial and media materials, studies lacking conceptual relevance to the research questions, and sources whose scientific validity could not be verified were excluded from the analysis process. At the same time, classical and fundamental studies were not eliminated simply because they were old, but were retained in cases where they were essential to explaining the conceptual evolution of the blue economy; in contrast, to examine new developments, priority was given to more recent studies.

3.4 Eligibility and Selection Criteria

After the initial identification of studies, the selection process was carried out in three stages: identification, screening, and full-text evaluation. In the first stage, potentially relevant studies were identified based on the determined keywords. In the second stage, the titles and abstracts of the studies were reviewed for relevance to the research problem and questions, and irrelevant ones were eliminated. In the third stage, the full text of the remaining studies was reviewed to determine their conceptual and theoretical relevance to the research topic. The goal of this process was not simply to increase the number of sources, but to identify studies that could contribute to explaining the evolution of the concept of the blue economy, its geographical boundaries, the limitations of landlocked countries, and the mechanisms of their connection to economic networks related to the sea and water. Such a structured process is also consistent with the logic of scientific reviews in the field of blue economy; for example, Lee et al. (2021) used the identification, screening, and evaluation of studies process to synthesize the literature in examining the relationship between the blue economy and the environment.

3.5 Data Extraction and Analytical Framework

To extract and organize information, selected studies were reviewed within an analytical framework, and information such as the definition and conceptualization of the water economy, economic, social, environmental, and institutional dimensions, geographical scope, focus on coastal or inland areas, treatment of landlocked countries, maritime access mechanisms, transport and logistics infrastructure, trade corridors, regional cooperation, domestic and trans boundary water resources, and identified constraints and opportunities

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in the studies was extracted. This process allowed for a systematic comparison of studies and identification of points of agreement, theoretical differences, literature limitations, and understudied areas.

3.6 Thematic Analysis and Synthesis

The analysis of the studies was conducted using thematic analysis and qualitative synthesis. In the first stage, the main themes related to the definition and evolution of the blue economy were identified. In the second stage, the geographical focus of the literature was examined and the degree of dependence of the blue economy concept on the sea, ocean and coastal areas was assessed. In the third stage, the literature on landlocked countries was analyzed in terms of geographical constraints, transport costs, dependence on transit countries, access to ports, logistics infrastructure and trade corridors. In the fourth stage, potential mechanisms that can reduce the constraint caused by the lack of a coast, including logistics infrastructure, corridor diversification, regional cooperation and institutional capacity, were extracted from the studies and integrated together. These components were not defined as independent statistical variables, but were considered as mechanisms of connection and participation in the conceptual framework of the research.

3.7 Development of the Coastless Blue Economy Framework

Based on this analysis and synthesis, the conceptual framework of the landlocked blue economy (CBE) was developed. The rationale for developing this framework is based on the distinction between direct geographical access to the sea and economic and functional connectivity to the blue economy system. In the existing literature, proximity to the sea and having a coastline have in many cases been implicitly or explicitly considered as the basis for participation in the blue economy; while the literature review shows that economic activities related to the sea and water extend beyond the coastline through networks of infrastructure, trade, transport, corridors, ports, water resources, technology and institutional arrangements. Accordingly, the present study examines the hypothesis that the lack of a coast does not mean complete exclusion from the blue economy, but rather changes the type and path of participation from direct access to indirect and networked connectivity.

Finally, Afghanistan is considered as a case study to examine the applicability of the proposed framework. Afghanistan was chosen because the country lacks direct access to the sea and its connectivity to maritime and global markets depends on a set of factors, including transport corridors, ports in neighboring countries, regional infrastructure, domestic and trans boundary water resources, regional cooperation, and institutional capacity. However, using the framework for Afghanistan is not as an empirical demonstration or statistical inference of the framework but to show analytical potential in a relevant country that can serve as an in-depth future study.

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4. RESULTS AND DISCUSSION

4.1 Geo-Economic Approach in the Context of Coastless Blue economy

4.1.1 Power Structures and Interests in Waterway Economies

Geo-economics of Landlocked Countries in the Coastless Blue Economy The geo-economic analysis of landlocked countries in the Coastless Blue Economy investigates how power asymmetries and specific national interests influence access and ownership of transboundary waterways. They see rivers, lakes, and inland waterways not just as physical channels through which economic goods are transmitted, but as important strategic interests in geopolitics as well. As a consequence, these channels establish "areas of strategic action in which upstream and downstream riparian actors manage power relations of access to, and use, infrastructure provision in, their own spheres of activity" (Zeitoun & Mirumachi, 2008).

The transborder region involving these transit and land-locked states involves dependence on neighbours with guaranteed economic returns that landlocked countries might achieve through the use of multilateral regimes, corridors diplomacy, or targeted investments that offset this dependence and offer incentives. Distribution of gains (hydropower, access to water and irrigation, navigation, intraregional trade) often indicates power distribution within these transit waters (Sadoff and Grey 2002). Countries that tie themselves within cooperative systems can convert asymmetrical dependency into asymmetrical advantage in international networks.

Also, understanding geoeconomic dynamics of water-based economies and their linked transport corridors could provide a framework for landlocked country policy makers to make better choices in planning investment, optimizing routes of passage, as well as identifying and mitigating political and economic risks. They are not just pathways to carry goods, but systems consisting of physical transport infrastructure, government institutions, border and custom procedures, terminals/ports, as well as logistics centres and inter-state relationships among transit and landlocked countries. Their efficiency is thus a function of simultaneously influenced factors such as economic, institutional and geopolitical factors (Hiraide et al., 2022; Mombeni et al., 2019).

Due to the high dependency of several landlocked countries to few ports and routes, internal economy might become susceptible and influenced by some politically, economically or infrastructure wise problem which arises from a transit country and hence it can be concluded that identifying weaknesses and diversifying access routes to reduce potential vulnerability might reduce significant loss (Verschuur & Brzoska, 2022). As a result, future investment planning related to water and transit corridors may need to include consideration beyond its potential returns alone such as dependability and robustness of chosen routes, geographic diversities, political viability and infrastructure capacities and quality of collaboration among institutions concerned, to enable

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business around these 'water corridors' operate and develop as an interrelated network beyond only water resources, transport, trade and regional cooperation, leading towards a more balanced growth, resilience, and eventual objectives of landlocked water economy.

4.1.2 The Role of Geo-Economics in Corridor Access

Geoeconomic power relations also impact access for landlocked countries to corridors of transit and trade, since these countries rely on facilities and transit routeways of neighbouring countries. In such circumstances, the quality and reliability of corridors, the degree of dependence on transit countries, and the bargaining power in transport arrangements can affect the cost of trade and the capacity of these countries to participate in the regional and global economy (Hiraide et al., 2022; Takele & Tveter, 2025).

Landlocked countries can alleviate some of the constraints caused by the lack of direct access to the sea through bilateral and regional agreements, joint investment in infrastructure, the establishment of dry ports and border logistics centers, and the development of multimodal transport networks. Scientific research on dry ports shows that these infrastructures can act as a connecting link between seaports and inland hinterlands and improve coordination between road, rail, and maritime transport (Khaslavskaya & Roso, 2020). On the other hand, improving connectivity between cross-border corridors and increasing the quality of infrastructure and institutional coordination can strengthen the maritime trade flow of landlocked countries (Hiraide et al., 2022).

Therefore, the application of a geoeconomic approach allows landlocked countries to transform geographical limitation to some extent into an economic capacity by diversifying transit routes, reducing logistics costs, increasing the reliability of the flow of goods, and strengthening their bargaining power; a capacity that can pave the way for their more effective participation in the landlocked blue economy and broader global trade networks.

4.1.3 Regional Integration and Multilateral Cooperation

Regional integration and multilateral cooperation are among the most important mechanisms that can reduce the geographical constraints of landlocked countries and pave the way for their participation in the landlocked water economy. Given that these land-locked countries rely on cooperation with neighbours to access global markets, global commons (i.e. Water), and the transport network, engagement in regional schemes, trade agreements, transportation corridors, and transboundary basin management committees can lessen the costs and impacts related to remote location and transaction costs (EC, 2019). It has also shown scientifically that transboundary watershed cooperation can enhance the economic value of water resources by coordinating efforts in resource management, development of shared infrastructure, and establishment of systems for sharing benefits (Jalilov et al., 2015).

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Moreover, trade and transportation related cooperation among the neighbouring countries could enhance the access of LDCs to global markets through decreased trade barriers on the borders, coordinated institutional mechanisms and better transport corridor reliability (Hummels and Schaur, 2013; Hiraide et al., 2022). Water sector: by creating common interests from shared interdependence rather than a threat, rather than by ensuring trust and sharing of information in multilateral coordination. By building trust through exchanges of information among the stakeholders, shared development, a common set of rules is devised (Dinar et al., 2015). In this view, by becoming actively involved in regional networks, landlocked states don't merely accept their neighbours' influence, but by so doing they can actively leverage this interdependence through coalition building, development of joint infrastructure, coordinated resource management, and strengthened bargaining positions for economic and geoeconomic gain.

Such an approach can be one of the fundamental foundations of a landlocked water economy; Because it defines the economic capacity of landlocked countries not based on direct access to the sea, but on the quality of regional ties, cross-border cooperation, and their ability to benefit from shared water, energy, trade, and transportation networks.

4.2 Case Study Analysis: Afghanistan

4.2.1 Geographical Position

Afghanistan is a landlocked and largely mountainous country located at the crossroads of Central and South Asia, and geographically has the potential to serve as a link between markets and trade corridors in these regions. However, the lack of direct access to the sea has made Afghanistan's foreign trade dependent on the transport infrastructure, ports, and transit routes of neighboring countries to access global markets. Studies on Afghanistan's transit trade show that dependence on external routes, especially ports and territories of transit countries, is a major factor in the vulnerability of the country's trade, and this has led Afghanistan to seek more diverse routes to access international trade (Kakar, 2023).

On the other hand, the mountainous structure and geographical dispersion of production and consumption centers increase the cost and difficulty of establishing domestic transport infrastructure; Because research evidence shows that geography and the quality of infrastructure are determinants of transport costs and trade volume, especially in landlocked countries (Limão & Venables, 2001).

Thus, Afghanistan's geographical location has a dual nature: on the one hand, the lack of a coast and mountainous topography create constraints for trade, logistics, and access to global markets, and on the other hand, the country's location between Central Asia, South Asia, and routes leading to regional ports creates potential capacity to play a role in regional trade and transit corridors.

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4.2.2 Opportunities

Afghanistan's geoeconomic location, coupled with the constraints of being landlocked, creates the potential to play a role in the region's economic and transit networks:

- First, Afghanistan's location between Central and South Asia can provide the country with the opportunity to play a role as a connecting route for trade, transport, and energy transfer between the two regions. Studies on Central Asian corridors show that developing regional connectivity and transport infrastructure can provide landlocked countries with better access to regional and international markets (Hanaoka & Regmi, 2011).
- Second, Afghanistan's participation in regional cooperation mechanisms such as the Central Asia Regional Economic Cooperation (CAREC) program can strengthen access to infrastructure networks, transport corridors, and economic cooperation arrangements; The importance of this type of cooperation stems from the fact that the development of trade in landlocked countries largely depends on the quality of their connectivity with transit countries and regional networks (Hiraide et al., 2022).
- Third, from the perspective of a landlocked water economy, Afghanistan has important domestic and transboundary water resources, including the Amu Darya and Helmand basins, which can serve as a basis for creating economic value in sectors such as agriculture, energy production, aquaculture, ecosystem services, and regional cooperation. Research on the Amu Darya basin shows that coordinated water resource management can link the water, energy, and agricultural sectors and create shared economic benefits for the basin countries (Jalilov et al., 2015; Jalilov et al., 2016).

Therefore, Afghanistan's geoeconomic potential can be sought not only in its transit location, but also in the combination of regional connectivity, domestic and transboundary water resources, energy infrastructure, and participation in trade corridors; a combination that can form the basis for the formation of a water economy model appropriate to the conditions of a landlocked country.

4.2.3 Limitations

Afghanistan faces a set of structural and geopolitical constraints in exploiting its geoeconomic potential:

- First, the lack of direct sea access makes the country's foreign trade dependent on the ports and transit networks of coastal countries; as a result, any political, security, or logistical disruption in transit countries can affect the cost, time, and reliability of Afghan trade. Research on Afghan transit trade shows that historical dependence on Pakistani routes, especially Karachi ports and related land routes, has been a factor

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in the vulnerability of Afghan trade; for this reason, the development of routes such as Chabahar Port and the Lapis Lazuli Corridor have been proposed as solutions to diversify trade access (Kakar, 2023; Sa, 2021).

- Secondly, poor national transport infrastructure and difficult terrain in a mountainous country complicates the links between production centres and consumption areas with borders and international trade routes. This complication often leads to inflated logistical costs and extended transit times. In a recently concluded study of landlocked and mountainous Afghanistan, we note that the crossing points and cities play a central role in the trading and economic development of the country (Chaturvedi and de Vries, 2026).
- Third, the geopolitical and institutional risks (border closures/restricted movement; political conflicts; changing transit arrangements; instability with neighbouring country relations) could lessen the predictability of transit trade. Existing evidence on transit trade among Afghanistan and Pakistan indicates that a frequent closing of borders, lack of trust, institutional weakness, and the political factor are the determinants that causes the disruption of the transit flow (Shah, 2023).

Therefore, Afghanistan's main challenge is not simply "landlocked" but a combination of landlockedness, weak internal connectivity, and dependence on external transit networks; a set of factors that highlight the need to diversify ports, corridors, and regional cooperation arrangements to shape a landlocked, blue economy.

4.2.4 Geo-Economic Needs

To reduce geographical constraints and strengthen Afghanistan's geoeconomic potential, a set of complementary measures in the areas of infrastructure, corridor diversification, regional cooperation, and institutional capacity development is essential:

- First, the development of dry ports, intermodal terminals, and domestic logistics centers can improve connectivity between Afghanistan's production and consumption centers and the seaports of neighboring countries, and shift some of the customs, warehousing, and distribution activities to the interior of the country. Studies on dry ports show that these infrastructures can act as a connecting link between seaports and domestic transport networks, increasing the efficiency of supply chains (Khaslavskaya & Roso, 2020).
- Second, diversifying international corridors and investing in multimodal transport infrastructure can reduce Afghanistan's vulnerability to disruptions in a specific transit route or partner; Because over-dependence on a corridor makes a landlocked country vulnerable to political and logistical changes in intermediate countries (Hiraide et al., 2022).
- Third, strengthening regional agreements on water, energy, and trade can increase the possibility of managing common interests and reducing conflicts over transboundary resources. Evidence from the Amu

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Darya basin shows that cooperation among basin countries on water, energy, and agriculture can create shared economic benefits (Jalilov et al., 2015; Jalilov et al., 2016).

- Fourth, developing human capital and institutional capacities in logistics, port management, customs, and corridor governance is essential to turn physical infrastructure into real advantage, because the performance of corridors does not only depend on the quality of roads and railways, but also institutional coordination, border procedures, and network management capabilities that determine the cost and reliability of trade (Mombeni et al., 2019).

Therefore, the appropriate strategy for Afghanistan should not focus solely on building infrastructure, but should also strengthen logistical infrastructure, corridor diversity, regional cooperation, and institutional capacity; a combination that can turn Afghanistan's geographical limitation into a geoeconomic advantage to some extent and pave the way for its participation in the landlocked blue economy.

Table 5: Geo-Economic Profile of Afghanistan

Dimension	Key Features & Data	Implications for Coastless Blue Economy
Geographical Location	Landlocked, Central-South Asia, 652,230 km²	Strategic trade crossroads, corridor potential
Population (2023)	42 million	Labor force and domestic market for trade
Main Rivers	Amu Darya, Helmand, Kabul River	Potential for hydropower, irrigation, inland transport
Neighboring Countries	Pakistan, Iran, Turkmenistan, Uzbekistan, Tajikistan, China	Critical for transit and regional cooperation
Seaport Access	Indirect via Chabahar (Iran) and Gwadar/Karachi (Pakistan)	Vulnerable to political and logistical risks
Transit Infrastructure	5,000 km roads, limited rail, rugged terrain	High transport cost; need for dry ports/logistics hubs
Strategic Opportunities	Corridor hub, regional cooperation, inland water utilization	Economic integration, Coastless Blue Economy development
Limitations	Landlocked, infrastructure gaps, political instability	High trade cost; dependency on neighbors

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Geo-Economic Needs	Dry ports, corridor investments, water-energy cooperation	Strategic leverage; enhanced trade resilience

Sources: World Bank (2020), FAO (2018), UNESCAP (2021), ADB (2022) and OECD (2019).

4.3 Proposed Conceptual Model of the "Coastless Blue Economy"

Developing a coherent conceptual framework for the Coastless Blue Economy requires that the capacity of landlocked countries to exploit domestic and transboundary water resources, geoeconomic corridors, port and logistics infrastructure, and new water and information technologies be considered. Although the conventional concept of the blue economy is based mainly on economic activities dependent on the oceans and coastal areas, the scientific literature shows that a significant part of the value creation related to the blue economy is formed through the nexus of water, energy and food, transboundary water resource governance, transport infrastructure and trade corridors, and port-coastal networks, and is therefore not necessarily limited to the coastal territory (Jalilov et al., 2016; Voyer et al., 2018). On the other hand, landlocked countries, due to their dependence on transit corridors and ports of other countries, participate in the global trade network through infrastructures beyond their borders; As a result, access to ports, the quality of transboundary corridors, and the reliability of logistics networks can partially compensate for the limitation caused by the lack of a coast (Hiraide et al., 2022; Khaslavskaya & Roso, 2020). Accordingly, the landlocked water economy can be defined as a geoeconomic approach in which the creation of economic value from water resources and related activities does not depend solely on direct access to the sea, but is enabled through the combination of domestic and transboundary water resources, water-energy-food, trade and transit corridors, connectivity to external ports, water technologies, and regional governance. This new water economy concept redefined it from a merely coastal notion to an integrated, transboundary and geoeconomic context, which could well be applicable in landlocked country specific situations, such as Afghanistan's case.

At the core of the conceptual framework is moving from resource dependencies to geo-economic advantage. This means that, through leveraging of select resources-rivers, transport routes, hydro power generation potential, negotiations over water, agreements of foreign port access-landlocked countries can overcome high logistics costs and political risk (Arvis, Raballand & Marteau, 2007). The possession of such capacities sets up interdependent bases that create economic corridors in the way often characteristic of an access to the sea.

Four components make up the framework and are supported by previous work on trade geography, shared river basin management and regional economic integration:

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4.3.1 Transboundary Water Resource Utilization

Water resources for landlocked countries mainly rely on the use of transboundary rivers and watershed, thus a portion of their potential economic value and capacity, including hydroelectric power, irrigation water, sediments conveyance, fisheries and navigation (where possible), is dependent upon shared management mechanisms with other co-riparian countries. In the literature, transboundary water cooperation has been shown to enhance the economic benefits of joint river basin management by fostering coordinated allocation mechanisms, shared investments, common information platforms and reducing hydro political dependence to avoid potential conflicts (Jalilov et al., 2015; Dinar et al., 2015). Specific research in the Amu Darya basin has highlighted how upstream-downstream water management cooperation between riparian countries may increase opportunities for concurrent utilization for agricultural and power sector development, thereby generating more benefits than isolated approaches (Jalilov et al., 2016).

Therefore, within the boundaries of landlocked water economies, basin river management at the transboundary level can overcome physical dependence on sea access through common infrastructure, and greater water security, energy production and cross border economic ties.

For landlocked states that are located in the area of river basin systems, transboundary rivers therefore operate not just as physical resources but potentially also as shared transport-geoeconomic corridors within which cooperative management practices could fulfil many water-economy tasks typically requiring the ocean.

4.3.2 Corridor Geo-Economics and Access to Trade Gateways

A landlocked country's economic importance varies on the existence, quality and reliability of transport networks linking domestic production and consumption centres to seaports and international markets. Empirical evidence proves that geographical distance, infrastructure quality and transport costs affect the trade performance of landlocked countries and disadvantages in the area could potentially rise their cost of access to the international markets (Limo & Venables, 2001).

For these countries, diversifying corridors can serve as one means to curb such exposure because concentrating freight traffic and trade flows through a few corridors, ports or states makes an economy highly vulnerable to bottlenecks, border shutdowns, shifting regulations, or tensions. Trade literature on landlocked countries suggests corridors' features (e.g. The level of infrastructure and quality of corridors) is associated with the way they get engaged in maritime trade (Hiraide et al., 2022).

Evidence of ports and the global supply chain suggests that over-reliance on certain transport locations leads to economic vulnerability during disruptions (Verschuur et al., 2022). For landlocked countries committed to

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developing a land-locked blue economy (LBBE), therefore, opening and maintaining various ways into different locations as ports, multimodal transport development and increasing the connectivity between internal networks and external corridors could be considered not only a logistical policy but also a geoeconomic one. The purpose is thus to make economic security a safer matter, trade costs more bearable and the overall economy less susceptible.

4.3.3 Extra-Territorial Port Investments and Logistics Nodes

To reduce the constraints of lack of direct access to the sea, landlocked countries can strengthen their access to maritime trade networks through investment, institutional partnerships, leases or long-term contracts for the operation of terminals, and the establishment of sustainable transit arrangements with foreign ports. This approach allows the landlocked country to put part of its logistics interests and capacities located outside its territory at the service of domestic supply chains. The scientific literature on dry ports and port networks shows that organized linkages between seaports and domestic logistics centres can partially reduce the geographical boundary between the port and the landlocked economy and place transportation, warehousing, customs, and distribution activities in an integrated network (Khaslavskaya & Roso, 2020). Also, the study of maritime trade of landlocked countries shows that these countries are dependent on a network of foreign ports and the characteristics and reliability of these ports can affect their trade performance (Verschuur et al., 2022). From a geoeconomic perspective, therefore, establishing sustainable arrangements with foreign ports can be considered a kind of “institutional and infrastructural compensation for geographical limitation”; in the sense that the landlocked country, without changing its geographical location, connects part of the benefits of port networks and cross-border value chains to its domestic economy by creating ownership, contractual or logistical links. In the context of a landlocked blue economy, such an approach can lead to more sustainable access to global markets, diversification of trade routes and increased geoeconomic bargaining power.

4.3.4 Blue Water Technologies and Hydro-Digital Infrastructure

New water technologies such as remote sensing, hydro informatics, smart irrigation, water treatment and recycling, as well as digital watershed management can be useful new tools for landlocked countries to leverage limited water resources more productively and develop water-economic resilience. Scientific evidence on remote sensing data and satellite imagery has shown the possibility of having wide area and sustained monitoring over water resources, soil water content, croplands and water cycle changes; This can improve data quality and inform decision making in the areas of water management and agriculture (Foster et al., 2020). In addition, in addition to the development of smart management and irrigation systems and the reduction of the pressure on limited water sources and the increased efficiency of water use (Grafton et al., 2018), information

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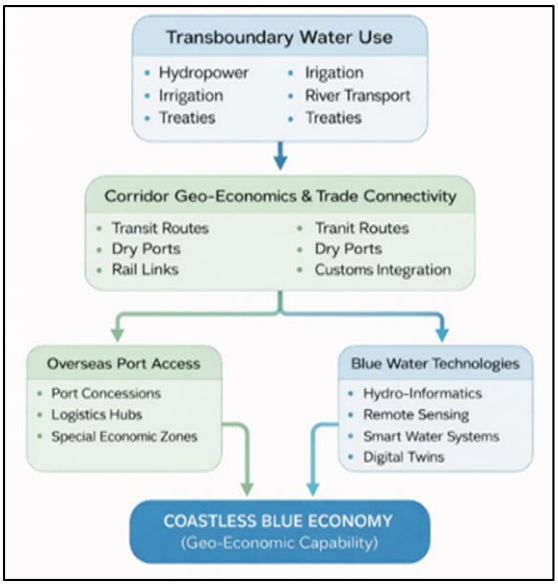
transparency and shared negotiations between countries sharing basins are of great interest at international level, due to differences in the level of information between upstream and downstream countries, which can impact the ability to plan, negotiate and share basin management. Thus, within the framework of a landlocked water economy, water technology is no longer just a tool for conserving water but rather a knowledge and geo-economic infrastructure for enhancing water productivity, resilience to drought and climate change and promoting better international cooperation on basins.

4.3.5 Integrated Model: The Coastless Blue Economy Framework

The present figure reflects the "Integrated Model of the Coastless Blue Economy" and describes the mechanism of ensuring successful integration of landlocked states in the international blue economy in lack of maritime access. Landlocked states can gain successful international integration in blue economy by utilizing the transboundary waters at the core of the model such as Hydropower, Irrigation, river transport and Water Agreement. This leads to corridor geo-economics and trade connectivity which emphasizes transit, dry port, Rail connectivity, Custom. Flowing out from the root of the model, the two supporting ways can be categorized as international port access and blue water technology which is through "Port concessions, logistics centres, special Economic zones at coastal cities and Hydr-informatics, Remote sensing, Smart water system, Digital twins respectively". These interacting factors, converge in the bottom of the model for building Coastless Blue Economy as a geo-economic resource which transform the disadvantage of landlocked countries as geography constraint into spatial strategic advantage by connectivity, technology and institutions.

Figure 1: CBE Framework



Source: Based on Arvis et al. (2007), OECD (2021), Rodriguez et al. (2022), UNCTAD (2020), UNESCO (2019) and WTO (2021).

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4.4 Afghanistan according to the Costless Blue Economy Framework

Afghanistan is a good illustration of the investigation and operation of Coastless Blue Economy (CBE) since its context displays both constraints and unobvious geoeconomic possibilities on landlocked countries. Despite being a landlocked country with no direct access to the free waters, Afghanistan sits strategically between Central Asia and South Asia to basins flowing to the Middle East, allowing itself potentials to assume function in regional transportation networks, trade routes, energy supplies as well as transportation networks. As study has shown for the landlocked countries: no matter where country locate, geography itself is not an economic advantage, it is determined by infrastructure quality, transit corridor reliability, political coordination, and regional cooperation between country (countries) and the transit one, whether location can be tied to local or worldwide economy

In the case of Afghanistan, studies have shown that dependence on external transit routes, along with efforts to diversify trade routes and access alternative ports, is an important element of the country's geoeconomics (Kakar, 2023). Therefore, Afghanistan can be considered not as a maritime economy, but as a landlocked economy with the ability to connect to maritime networks through cross-border infrastructure; a model in which transit corridors, dry ports, contractual access to foreign ports, domestic and cross-border water resources, regional cooperation and water technologies are placed together. The realization of this capacity depends on the existence of appropriate infrastructure, effective governance, sustainable transit agreements and diplomatic cooperation with countries in the region, and from this perspective, Afghanistan can be a suitable experimental case to test and develop the framework of a landlocked water economy.

In terms of transboundary water resource use, Afghanistan has considerable but mainly untapped inland water resources. Several major river systems including, Amu Darya, Helmand and Kabul are crucial for internal irrigation and power, in addition for their contribution to water-energy transactions between Iran, Pakistan and the Central Asian countries. The findings from researches in other river basins of the world reveal that joint management of water can offer economic and political benefits substituting maritime access partly, particularly for landlocked countries situated upstream (Sadoff & Grey, 2002) thus Afghanistan's water potential forms the hydro-infrastructure for the blue economy landlocked potential of Afghanistan.

Among The Corridor Models geo-economics module, the presence of Afghanistan stands out remarkably. Afghanistan is integrated into a number of regional initiatives like the Central Asia-South Asia (CASA) connection route and the CAREC corridors. Good corridor investment could reduce trade costs, diversify transit options and help to make Afghanistan less dependent on its single access route by sea- something consistently

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attributed as a prime drawback for a landlocked country (Arvis, Raballand, & Marteau, 2007). The Corridor approach represents Afghanistan's primary form of indirect involvement within maritime trade mechanisms.

The engagement with international access, a facet of the CBE model, on its own is rather obvious in the dependency of Afghanistan on the ports of Gwadar, Karachi, and Chabahar; it is in these connections that it invests a considerable amount of strategic attention. Even while it has no port infrastructure on its foreign territories, its role in the Chabahar corridor deals shows how a landlocked state can achieve maritime connection diplomatically and economically without having claims over territory with the help of its surrounding neighbors with access to the sea. UNCTAD (2020) highlights that these agreements are becoming more prevalent among landlocked developing nations aiming for stability in international trade.

Finally, the development of new water technologies and hydro-digital infrastructure can be considered one of the important and under-exploited capacities of Afghanistan to enter the framework of a landlocked water economy. Technologies such as satellite monitoring of water resources, remote sensing, hydro informatics, hydrological modelling, and advanced irrigation systems can increase water use efficiency and the capacity to adapt to drought and climate change by providing more accurate information about the status of water resources, water demand, soil moisture, and changes in watersheds. Scientific studies show that remote sensing data and information technologies can reduce information gaps in water resources management and strengthen the possibility of evidence-based decision-making, especially in arid and semi-arid regions (Tiwari et al., 2022). Also, the development of irrigation systems and smart water management can help increase water use efficiency; However, its real effects also depend on how water is managed and allocated (Grafton et al., 2018). For transboundary waters, developing and maintaining a more robust capacity to generate, process and exchange hydrological information can gain a higher geo-economic value, given that timely access to dependable information enables countries to better anticipate water resource scenarios and to effectively represent and defend their position in basin co-operation mechanisms. Within a framework such as the CBE hydro-digitalization becomes more than a tool for managing a country's domestic resources, it can be framed as a strategic capacity which-through an increased level of water productivity, strengthened resilience to climate changes, a reduction in the information gaps among actors of water management, and the improvement of technical capacities-enhances Afghanistan's position at both transboundary waters resource negotiation level, and consequently the geoeconomic setting of a landlocked water economy.

Taken together, Afghanistan’s positioning, inland water resources, corridors’ connectivity, developing regional relationships all align fairly well with the main tenet of the Coastless Blue Economy model. While underlying challenges namely, political instability and missing infrastructure are clearly obvious, nevertheless, they

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demonstrate that Afghanistan can become involved in the blue economy despite the fact of not being a maritime country. Rather, by strategically using geo-economic instruments, Afghanistan can transform its landlocked nature into practical access, regional significance, and economic power.

4.5 DISCUSSION

The findings of this study show that the issue of landlocked countries' participation in the blue economy cannot be analyzed solely from the perspective of lack of direct access to the sea. In the existing literature, although there is no single and agreed definition of the blue economy, a significant part of the existing definitions and frameworks are still formed in connection with the oceans, coastal areas and economic activities dependent on marine resources. Silver et al. (2015), Voyer et al. (2018) and Keen et al. (2018) have shown that the blue economy has been an ambiguous concept from the beginning and there are tensions between economic, environmental, social and governance objectives. Therefore, the finding of this study that the geographical assumption of the blue economy needs to be revised is consistent with the critical trend in the literature, but goes a step further: it is not only the ambiguity in the meaning of the blue economy that needs to be addressed, but also the limitations in its geographical scope.

In this respect, the findings of the study are also consistent with Garland's (2019) argument that geographical concepts have often been given less attention than economic and technological dimensions in the discussion of the blue economy. Garland emphasizes that understanding the blue economy requires attention to concepts such as location, scale, spatial relations, and the implications for equity and sustainability. The present finding extends this discussion to landlocked countries and shows that if "location" and "access" are important in the analysis of the blue economy, this access should not be defined solely in terms of having a coastline. In fact, a country can participate in the sea-related economic system without having a coast, through trans boundary water networks, transport infrastructure, trade corridors, external ports, and institutional relationships.

This finding also ties in with Keen et al. (2018)'s discussion of the need for an integrated view of the water economy. They argue that the value of a water economy framework increases when it can reveal the relationships between different economic, environmental, institutional and social components and avoid sectoral views. The findings of this study suggest that such integration for landlocked countries needs to go a step further and include the linkages between water, energy, food, transport, trade, technology and trans boundary governance. CBE can therefore be seen as an extension of the integrated logic of the water economy; one that shifts the unit of analysis from the "coastal economy" to the "economic network associated with water resources and systems."

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5 CONCLUSION

This study aimed to explore the possibility of landlocked countries participating in the blue economy and to redefine the geographical scope of this concept, using Afghanistan as a case study. The findings of the study indicate that the objectives of the study have been generally met and the theoretical and analytical evidence provided allows for the answer to the main research question.

First, a critical review of conventional definitions of the blue economy showed that although the concept has evolved from a predominantly economic and ocean-centric understanding to a multidimensional concept encompassing environmental sustainability, social justice, governance, technology, and economic development in the last two decades, its conceptual expansion has been more vertical and its geographical scope has remained largely focused on oceans, seas, and coastal areas. Therefore, in many existing frameworks, direct access to the sea is implicitly considered as a condition for participation in the blue economy. This situation prevents the economic capacities of landlocked countries that are linked to the maritime economy through inland waters, trans-boundary water resources, trade networks, and indirect access to seaports from being properly reflected in the water economy framework. From this perspective, the research showed that the main issue is not simply adding a new economic sector to the water economy, but rather rethinking the geographical boundary and defining access to the water economy.

Second, the findings showed that landlocked countries, on the one hand, face important structural constraints such as lack of direct access to the sea, dependence on transit countries, high transportation costs, weak logistics infrastructure, vulnerability to geopolitical developments, and constraints on water resource governance; but on the other hand, these countries have capacities that can serve as the basis for their participation in a broader water economy. These capacities include domestic and trans water resources, hydroelectricity generation, water-dependent agriculture, domestic aquaculture, water-based tourism, virtual water trade, water technologies, and connectivity to transport networks and ports of coastal countries. Therefore, being landlocked does not mean a lack of water-related economic capacity, but the type and path of access to these capacities differs from coastal countries.

Third, the research findings showed that geoeconomics mechanisms play a decisive role in transforming these capacities into real economic participation. Joint management of trans boundary water resources can transform water from a potential source of conflict to a platform for economic cooperation, energy production, agriculture, flood management, and regional development. In this regard, water diplomacy and joint institutional arrangements can transform hydrological dependence into economic dependence and cooperation. Transport corridors, transit networks, dry ports, and multimodal connectivity to markets and seaports also enable

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landlocked countries to participate indirectly in the maritime trade network. Diversifying routes and accessing multiple ports can also reduce the vulnerability of being dependent on a single route or transit country.

Thus, when we discuss "access to foreign ports", we must not exclusively think of territory being owned by an individual country. Involvement in the development of, or engagement with, the operation of port terminals, signing lengthy logistics contracts, constructing special economic zones, or integrating foreign ports with the country's domestic network can be equated with forming a kind of "functional access" to the maritime economy network. For landlocked Afghanistan, linking its economy to the ports of Chabahar, Gwadar and Karachi, and improving the security and regularity of routes for reaching the regional trade network has proven a country can be integrated into the maritime economy network from a land-locked geographic position.

Fourth, on the basis of this research data, we present a conceptual model of the “Coast less Blue Economy” (CBE). This is to expand the traditional vision of the blue economy that has been traditionally tied to countries with a coast and transform it into a “networked”, “trans-boundary”, and “geoeconomics” system. Within this system, the participation of the landlocked country in the blue economy depends on the interconnection of the following factors: freshwater domestic resources, trans-boundary water resources, virtual water and the virtual water economy, water diplomacy and governance, trade corridors and connections, ports in third countries, and innovative water technologies and hydro-digital infrastructures. In this scheme, water is not merely treated as a raw material but as a component of an economic net and interlinked to water, energy, food, trade, and infrastructure.

The Afghanistan study also shows the potential for the geoeconomics framework application. Afghanistan’s landlocked terrain and the presence of major river basins, and hydro and irrigation potential, as well as its geographical position between the two Asian regions—as connectivity toward Regional Transport corridors – in combination with access to external ports make Afghanistan a unique resource. As such, the potential is not fully visible under the old-fashioned structure of the water economy. Also, poor infrastructure, the cost of transporting raw materials, and reliance on neighbors, coupled with political challenges will cause a lot of impediments to the transformation, as there is no sign of the coming disappearance of landlocked geography, but the limitation of geography could be turned partly into access, and strategic asset, using the tool of geoeconomics.

So, the answer to the primary question is that: “The water economy is defined not only through direct ‘access to the sea’ but also through ‘functional access’ and ‘economic connection with the water and marine systems.’ In this context, a land-locked developing country can achieve sustainable development and progress via the

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sustainable use of internal as well external trans boundary water resources, electricity generation and other economic activities linked to water".

6 REFERENCES

Abbott, B. W., Bishop, K., Zarnetske, J. P., Minaudo, C., Chapin, F. S., Krause, S., Hannah, D. M., Conner, L., Ellison, D., Godsey, S. E., Plont, S., Marcé, R., Kolbe, T., Haggerty, R., Hampton, P. F., Gu, S., Buhman, M., Sara Sayedi, S., Pinay, G. (2019). Human domination of the global water cycle absent from depictions and perceptions. Nature Geoscience, 12, 533–540. https://doi.org/10.1038/s41561-019-0379-y

Allan, J. A. (1993). Fortunately there are substitutes for water otherwise our hydro-political futures would be impossible. Priorities for Water Resources Allocation and Management, ODA, 13–26.

Allan, J. A. (1998). 'Virtual water': A long-term solution for water-short Middle Eastern economies. SOAS, University of London.

Allan, J. A. (2011). Virtual water: Tackling the threat to our planet's most precious resource. I.B. Tauris.

Arvis, J.-F., Raballand, G., & Marteau, J.-F. (2007). The cost of being landlocked: Logistics costs and supply-chain reliability (Policy Research Working Paper No. 4258). World Bank.

Arvis, J.-F., Raballand, G., & Marteau, J.-F. (2010). The cost of being landlocked: Logistics costs and supply chain reliability. Transportation Policy, 17(6), 441–451. https://doi.org/10.1016/j.tranpol.2010.09.005

Asian Development Bank. (2022). Regional cooperation and integration: Progress and outlook 2022. ADB.

Bennett, N. J., et al. (2019). Towards a sustainable and equitable blue economy. Nature Sustainability, 2(11), 991–993. https://doi.org/10.1038/s41893-019-0404-1

Blackwill, R. D., & Harris, J. M. (2016). War by other means: Geoeconomics and statecraft. Harvard University Press.

Chaturvedi, V., & de Vries, W. (2026). The impact of land use dynamics at the trading ports on post-conflict economic development in Afghanistan. Discover Geoscience, 4, 228. https://doi.org/10.1007/s44288-026-00514-5

Cisneros-Montemayor, A. M., Moreno-Báez, M., Reygondeau, G., Cheung, W. W. L., Crosman, K. M., González-Espinosa, P. C., Lam, V. W. Y., Oyinlola, M. A., Singh, G. G., Swartz, W., & Ota, Y. (2019). Social equity and benefits as the nexus of a transformative Blue Economy: A sectoral review of implications. Marine Policy, 109, 103702. https://doi.org/10.1016/j.marpol.2019.103702

De Stefano, L., Petersen-Perlman, J. D., Sproles, E. A., Eynard, J., & Wolf, A. T. (2017). Assessment of transboundary river basins for potential hydro-political tensions. Global Environmental Change, 45, 35–46. https://doi.org/10.1016/j.gloenvcha.2017.04.008

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

Dinar, S., Katz, D., De Stefano, L., & Blankespoor, B. (2015). Climate change, conflict, and cooperation: Global analysis of the effectiveness of international river treaties. Journal of Peace Research, 52(1), 1–14. https://doi.org/10.1177/0022343314556135

Eikeset, A. M., Badinger, M., Edward, M., et al. (2018). What is blue growth? The semantics of "sustainable development" of marine environments. Marine Policy, 87, 177–179. https://doi.org/10.1016/j.marpol.2017.10.019

Faye, M. L., McArthur, J. W., Sachs, J. D., & Snow, T. (2004). The challenges facing landlocked developing countries. Journal of Human Development, 5(1), 31–68. https://doi.org/10.1080/14649880310001660201

FAO. (2018). Afghanistan: Country profile on water and agriculture. Food and Agriculture Organization.

FAO. (2019). The state of the world's fisheries and aquaculture 2018. FAO.

Foster, T., Brozović, N., Butler, A. P., Neale, C. M. U., Raes, D., Steduto, P., Fereres, E., & Nichols, W. D. (2020). AquaCrop-OSPy: An open source, Python-based, multi-platform implementation of the FAO AquaCrop model. Agricultural Water Management, 236, 106167. https://doi.org/10.1016/j.agwat.2020.106167

Garland, M., Axon, S., Graziano, M., Morrissey, J., & Heidkamp, C. P. (2019). The blue economy: Identifying geographic concepts and sensitivities. Geography Compass, 13(7), e12445. https://doi.org/10.1111/gec3.12445

Garrick, D., & Hall, J. W. (2014). Water security and freshwater ecosystem services: Insights from the ecosystem services approach. Water Resources Research, 50(2), 1093–1107. https://doi.org/10.1002/2013WR014738

Ghaffarian, H., Kerle, N., Filatova, T., & Löwe, M. (2019). Remote sensing and geospatial technologies for water management: A review. Remote Sensing, 11(13), 1556. https://doi.org/10.3390/rs11131556

Grafton, R. Q., Williams, J., Perry, C. J., Molle, F., Ringler, C., Steduto, P., Udall, B., Wheeler, S. A., Wang, Y., Garrick, D., & Allen, R. G. (2018). The paradox of irrigation efficiency. Science, 361(6404), 748–750. https://doi.org/10.1126/science.aat9314

Graziano, M., Alexander, K. A., McGrane, S. J., Allan, G. J., & Lema, E. (2022). The many sizes and characters of the Blue Economy. Ecological Economics, 196, 107419. https://doi.org/10.1016/j.ecolecon.2022.107419

Hanaoka, S., & Regmi, M. B. (2011). Promoting intermodal freight transport through the development of dry ports in Asia: An environmental perspective. IATSS Research, 35(1), 16–23. https://doi.org/10.1016/j.iatssr.2011.06.001

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

Hiraide, T., Kawasaki, T., & Hanaoka, S. (2022). Clarifying the relationship between seaborne trade flows of landlocked developing countries and the attributes of their cross-border transport corridors. Journal of the Eastern Asia Society for Transportation Studies, 14, 955–974. https://doi.org/10.11175/easts.14.955

Hoff, H. (2011). Understanding the Nexus. Background Paper for the Bonn2011 Conference: The Water, Energy and Food Security Nexus. Stockholm Environment Institute.

Hoekstra, A. Y., & Mekonnen, M. M. (2012). The water footprint of humanity. PNAS, 109(9), 3232–3237. https://doi.org/10.1073/pnas.1109936109

Hummels, D. L., & Schaur, G. (2013). Time as a trade barrier. American Economic Review, 103(7), 2935–2959. https://doi.org/10.1257/aer.103.7.2935

IPCC. (2019). Special report on the ocean and cryosphere in a changing climate. IPCC.

IPCC. (2022). Climate change 2022: Impacts, adaptation and vulnerability. Cambridge University Press.

Jalilov, S.-M., Amer, S. A., & Ward, F. A. (2018). Managing the water–energy–food nexus: Opportunities in Central Asia. Journal of Hydrology, 557, 407–425. https://doi.org/10.1016/j.jhydrol.2017.12.040

Jalilov, S.-M., Keskinen, M., Varis, O., Amer, S., & Ward, F. A. (2016). Managing the water–energy–food nexus: Gains and losses from new water development in Amu Darya River Basin. Journal of Hydrology, 539, 648–661. https://doi.org/10.1016/j.jhydrol.2016.05.071

Jalilov, S.-M., Varis, O., & Keskinen, M. (2015). Sharing benefits in transboundary rivers: An experimental case study of Central Asian water-energy-agriculture nexus. Water, 7(9), 4778–4805. https://doi.org/10.3390/w7094778

Kakar, A. (2023). Afghanistan towards independent transit trade: A decay of affiliation to Pakistan. South Asian Journal of Business Studies, 12(3), 369–388. https://doi.org/10.1177/0972150920906993

Keen, M. R., Schwarz, A.-M., & Wini-Simeon, L. (2018). Towards defining the Blue Economy: Practical lessons from Pacific Ocean governance. Marine Policy, 88, 333–341. https://doi.org/10.1016/j.marpol.2017.03.002

Khaslavskaya, A., & Roso, V. (2020). Dry ports: Research outcomes, trends, and future implications. Maritime Economics & Logistics, 22, 265–292. https://doi.org/10.1057/s41278-020-00152-9

Kistin Keller, E. J. (2012). Critiquing cooperation: Transboundary water governance and adaptive capacity in the Orange-Senqu Basin. Journal of Contemporary Water Research & Education, 149(1), 41–55. https://doi.org/10.1111/j.1936-704X.2012.03126.x

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

Kowalski, P., Mter, M., & Shepherd, B. (2015). Landlocked developing countries: Constraints, needs, and development strategies. Journal of International Development, 27(2), 185–201. https://doi.org/10.1002/jid.3066

Lee, K.-H., Noh, J., & Khim, J. S. (2020). The Blue Economy and the United Nations' sustainable development goals: Challenges and opportunities. Environment International, 137, 105528. https://doi.org/10.1016/j.envint.2020.105528

Lee, K.-H., Noh, J., Lee, J., & Khim, J. S. (2021). Blue economy and the total environment: Mapping the interface. Environment International, 157, 106796. https://doi.org/10.1016/j.envint.2021.106796

Limão, N., & Venables, A. J. (2001). Infrastructure, geographical disadvantage, transport costs, and trade. The World Bank Economic Review, 15(3), 451–479. https://doi.org/10.1093/wber/15.3.451

Luttwak, E. N. (1990). From geopolitics to geo-economics. The National Interest, (20), 17–23.

M. et al. (2021). Africa's blue economy: Potentials and challenges for more locally beneficial development. Review of African Political Economy. https://doi.org/10.1080/03056244.2020.1853517

Mallin, F., & Barbesgaard, M. (2020). Awash with contradiction: Capital, ocean space and the logics of the Blue Economy Paradigm. Geoforum, 113, 121–132. https://doi.org/10.1016/j.geoforum.2020.04.021

Mombeni, H., Akgün, I., & Aydin, G. (2019). Performance of cross-border corridors in East Africa considering multiple stakeholders. Transport Policy, 81, 117–126. https://doi.org/10.1016/j.tranpol.2019.06.003

Naylor, R. L., Hardy, R. W., Buschmann, A. H., Bush, S. R., Cao, L., Klinger, D. H., Little, D. C., Lubchenco, J., Shumway, S. E., & Troell, M. (2021). A 20-year retrospective review of global aquaculture. Nature, 591, 551–563. https://doi.org/10.1038/s41586-021-03308-6

OECD. (2016). The ocean economy in 2030. OECD Publishing. https://doi.org/10.1787/9789264251724-en

OECD. (2019). Enhancing connectivity and freight transport in Central Asia. OECD. https://doi.org/10.1787/b7b14b14-en

OECD. (2021). Sustainable ocean economy: A policy and research agenda. OECD.

Park, J. B., Adibayeva, A., & Saari, D. (2021). Contestation and collaboration for water resources: Comparing the emerging regional water governance of the Aral Sea, Irtysh River, and Mekong River. Journal of Asian and African Studies, 56(6), 1267–1283. https://doi.org/10.1177/0021909620957689

Perry, C., & Steduto, P. (2017). Drip irrigation and other water-saving technologies: A review of the evidence. Agricultural Water Management.

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

Pham, N. T. A., & Sim, N. (2020). Shipping cost and development of the landlocked developing countries: Panel evidence from the common correlated effects approach. The World Economy, 43(4), 892–920. https://doi.org/10.1111/twec.12871

Rahim, S. A. (2018). Afghanistan's dependence on Pakistan: Trade, transit and the cost of being landlocked. Kardan Journal of Economics and Management Sciences, 1(4), 38–58. https://doi.org/10.31841/KJEMS.2021.68

Rodrigue, J.-P., Comtois, C., & Slack, B. (2022). The geography of transport systems (5th ed.). Routledge.

Sa, S. K. (2021). Applicability of UNCLOS for landlocked states: The case of Chabahar port and Afghanistan. Maritime Affairs: Journal of the National Maritime Foundation of India, 17(1), 58–72. https://doi.org/10.1080/09733159.2021.1939869

Sadoff, C. W., & Grey, D. (2002). Beyond the river. Water Policy, 4(5), 389–403. https://doi.org/10.2166/wp.2002.0053

Shah, Z. (2023). Critical analysis of data of Afghan transit through Pakistan since 2010: Trends, issues, challenges and way forward. Journal of Pakistan Administration.

Silver, J. J., Gray, N. J., Campbell, L. M., Fairbanks, L. W., & Gruby, R. L. (2015). Blue Economy and competing discourses in international oceans governance. The Journal of Environment & Development, 24(2), 135–160. https://doi.org/10.1177/1070496515580797

Smith-Godfrey, S. (2016). Defining the blue economy. Maritime Affairs: Journal of the National Maritime Foundation of India, 12(1), 58–64. https://doi.org/10.1080/09733159.2016.1175131

Takele, T. B., & Tveter, E. (2025). Trade logistics costs in landlocked developing countries: The role of bargaining power. Journal of Transport Geography, 128, 104365. https://doi.org/10.1016/j.jtrangeo.2025.104365

Tarpanelli, A., Brocca, L., Melone, F., Moramarco, T., & Wagner, W. (2022). Flood and water resources monitoring using remote sensing and satellite observations: A review. Remote Sensing, 14(9), 2006. https://doi.org/10.3390/rs14092006

Tiwari, V., Kumar, V., Matin, M. A., Thapa, A., Ellenburg, W. L., Gupta, N., & Thapa, S. (2022). Flood inundation mapping—Need of the hour. Remote Sensing, 14(9), 2174. https://doi.org/10.3390/rs14092174

Timmerman, J., Johannessen, Å., & Figueres, C. (2026). Mainstreaming climate adaptation in transboundary water governance: Key success factors and lessons from global case studies. Water International. https://doi.org/10.1080/02508060.2026.2650731

UNCTAD. (2020). Review of maritime transport 2020. UNCTAD.

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

UNCTAD. (2021). Review of maritime transport 2021. UNCTAD.

UNCTAD. (2023). Review of maritime transport 2023. UNCTAD.

UNEP. (2015). Blue economy: Sharing success stories. UNEP.

UNESCO. (2019). UN World Water Development Report 2019. UNESCO.

UNESCO. (2020). UN World Water Development Report 2020: Water and climate change. UNESCO.

UN-Water. (2020). SDG 6 synthesis report. United Nations.

Van Dijk, A. I. J. M., Brakenridge, G. R., Di Baldassarre, G., de Groeve, T., & Schaepman, M. E. (2016). River gauging at global scale using optical and passive microwave remote sensing. Water Resources Research, 52(8), 6404–6418. https://doi.org/10.1002/2015WR018545

Varady, R. G., Albrecht, T. R., Modak, S., Wilder, M. O., & Gerlak, A. K. (2023). Transboundary water governance scholarship: A critical review. Environments, 10(2), 27. https://doi.org/10.3390/environments10020027

Verschuur, J., Koks, E. E., & Hall, J. W. (2022). Ports' criticality in international trade and global supply-chains. Nature Communications, 13, 4351. https://doi.org/10.1038/s41467-022-32070-0

Voyer, M., Quirk, G., McIlgorm, A., & Azmi, K. (2018). Shades of blue: What do competing interpretations of the Blue Economy mean for oceans governance? Journal of Environmental Policy & Planning, 20(5), 595–616. https://doi.org/10.1080/1523908X.2018.1473153

Voyer, M., Schofield, C., Azmi, K., Warner, R., McIlgorm, A., & Quirk, G. (2018). Maritime security and the Blue Economy: Intersections and interdependencies in the Indian Ocean. Journal of the Indian Ocean Region, 14(1), 28–48. https://doi.org/10.1080/19480881.2018.1418155

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. Journal of Advanced Nursing, 52(5), 546–553. https://doi.org/10.1111/j.1365-2648.2005.03621.x

Winder, G. M., Le Heron, R., & others. (2021). What is the Blue Economy? A spatialised governmentality perspective. Maritime Studies, 20, 423–448. https://doi.org/10.1007/s40152-021-00240-3

Wilson, R., Reiter, S., Frazão Santos, C., Agardy, T., & Wedding, L. M. (2026). Balancing the blue economy and multiple stressor management in marine spatial planning at the land-sea interface. npj Ocean Sustainability, 5, 21. https://doi.org/10.1038/s44183-026-00192-3

Wolf, A. T. (2007). Shared waters. Annual Review of Environment and Resources, 32, 241–269. https://doi.org/10.1146/annurev.energy.32.041006.101434

World Bank. (2017). The potential of the blue economy. World Bank.

World Bank. (2020). Trade and transport corridor management toolkit. World Bank.

World Bank. (2021). Blue economy development framework. World Bank.

TABESH INTERNATIONAL JOURNAL OF SOCIAL SCIENCES
ISSN: 3106-7638 (Online)
ISSN: 3106-762X (Print)
Vol 2, Issue 1, 2026

World Bank. (2023). Water security for all. World Bank. https://doi.org/10.1596/978-1-4648-1890-2

WWF. (2018). Principles for a sustainable blue economy. World Wildlife Fund.

Zarfl, C., Lumsdon, A. E., Berlekamp, J., Tydecks, L., & Tockner, K. (2015). A global boom in hydropower dam construction. Aquatic Sciences, 77, 161–170. https://doi.org/10.1007/s00027-014-0377-0

Zeitoun, M., & Mirumachi, N. (2008). Transboundary water interaction I. International Environmental Agreements, 8(4), 297–316. https://doi.org/10.1007/s10784-008-9083-5