Research Article

The Blue Economy as Key to Coastal Development in Small Island Developing States (SIDS)

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Abstract

Small Island Developing States are economically dependent on tourism and fisheries, both of which are closely related to marine ecosystems and sustainable coastal development. The limitations of geographic remoteness and isolation from international markets place them at a disadvantage economically and socially, so a way out is needed to address the economy of Small Island Developing States by applying the blue economy. This study aims to provide a comprehensive explanation of the blue economy as the key to sustainable coastal development in Small Island Developing States. This research uses a qualitative method by using a literature review of several studies that have been conducted. Based on the research that has been done, it is found that the solution offered by the blue economy in handling the economy and coastal development is through its integration with the circular economy in managing waste by empowering organic waste from hotels and empowering coastal communities in creative economic development to be an effective way out for Small Island Developing States.

Keywords: Blue Economy; Circular Economy; Coastal Development; Small Island Developing States

Introduction

The oceans are Earth's most valued natural resource, contributing 70 trillion US dollars to global GDP each year and supporting 90% of global trade volume and 40% of the value of global maritime trade (Reuters, n.d.). The ocean's vast potential is a key focus in the transition toward a sustainable blue economy, which can offer significant opportunities for island and coastal nations dependent on the ocean to ensure a more prosperous future by addressing poverty, inequality, and achieving sustainable development goals. Sustainable coastal development can significantly impact the marine environment, its ecosystems, and coastal communities.

Ocean health is important in sustaining economic growth and supporting the welfare of coastal communities because it affects various jobs such as fishing, shipping, tourism and offshore energy. Some of the world's most beautiful places are in archipelagic and coastal such as countries Small Island Developing States (SIDS), with the beauty possessed by SIDS and the uniqueness in it has the attention of the United Nations (UN) to develop several initiatives in support of sustainable development, one of which is target 14 of the Sustainable Development Goals namely "Life Below Water" which states "By 2030, increase economic benefits for small States and least developed countries from marine resources in a sustainable manner, including through sustainable fisheries management, aquaculture and tourism".

Improving the economy of developing countries and small islands is important and should receive full attention because these developing countries do not have many economic resources and tend to depend on one sector of the economy. So with the existence of great economic opportunities from the ocean should be utilized as well as possible in order to prosper the lives of the people, and build an independent economy for the country.

Developing fisheries, management sustainable aquaculture and tourism requires a development mechanism that integrates the environment, economy and social to achieve sustainability. Blue Economy as a development mechanism that focuses on the development of sustainable marine resource development is one way out of the development problems faced by SIDS countries. Blue economy has a principle that is the efficiency of natural resources that has nature provided without reducing and trying to enrich nature by making the transition from scarcity to abundance. The next principle is zero waste, which is the utilization of waste from one source into a source of food or energy for others so as to achieve a level of efficiency higher to circulate energy (Hasbullah, 2022). The concept of circularity is a balancing development so that the circular economy model can help the realization of the blue economy in SIDS. The focus of the circular economy is not only on the production system, but also on the consumption system so that cooperation between producers and consumers is needed to create zero waste that is mutually beneficial (Rishanty, 2022). The implementation of the circular economy also prioritizes the use of renewable energy, reduces the generation of waste, and supports the efficient use of natural resources and the processes used are more environmentally friendly. The continuity of understanding between the blue economy and circular economy makes the two integrated.

The integration between the blue economy and circular economy implies that the sustainable utilization of marine resources by the blue economy requires restoration and regeneration of resources by eliminating the use of toxic chemicals, eliminating waste and improving ocean health as well as creating an environment for superior business models (Pacheco, 2022). This integration is evident in the development of tourism and fisheries which is one of the main economic sources for countries SIDS. With the increase in tourist arrivals, SIDS countries are required to provide infrastructure more and food supply, which has an impact on the amount of organic and non-organic waste generated each year. In addition, the demand for fish consumption in the world has increasing led to overfishing and unsustainable fishing, which is detrimental to ocean health.

Therefore, this research is made to comprehensively explain how the development mechanism blue economy as a coastal development solution in countries Small Island Developing State. The purpose of this research is to add to the literature review on the blue economy, especially in SIDS countries because one of the obstacles in applying the blue economy is the lack of knowledge so that this research becomes an illustration for stakeholders and policies to see the opportunities and benefits of the blue economy.

Literature Review

Ayo Olusola Pacheco (2022) in his article entitled "Achieving circular economy through new blue economy initiatives: a road map for ports" explains the strategy to improve the circular economy in the maritime

sector which is the world's focus for industrializing marine resources. The initiative that explores the potential and resources of the ocean turns out to have a strong connection with the circular economy in improving sustainability, this will be achieved if the strategies and policies provided by the *blue economy blue economy* can ensure that ocean resources are maximally and sustainably utilized and guided by the right policies so as to plan a better future for the next generation. However, this research focuses on the process of achieving a circular economy in the port sector.

Dorota Simpson (2018) in her article entitled "The concept of green, blue and circular economy" explains the concept of green, blue and circular economy which is a new paradigm for the economy with the aim of utilizing limited natural resources in the most economical way. The main objective of this economy is to ensure development socio-economic, which has been the basic measure of a country's economic achievement over the years. While green and blue economies are economies that are closely related to natural resources, the circular economy can be used as an instrument for the protection and reuse of products. So the application of green, blue and circular economy concepts can make good use of scarce natural resources and stimulate innovation and create better living conditions. However, this research only focuses on describing the concepts of green, blue and circular economy in general.

Carlos Rodriguez et al (2020) in their article entitled "Circular economy contributions to the tourism sector: A Critical Literature Review" explains that the current economy still relies on extraction and consumption which produces waste so that the concept of circular economy has received attention from stakeholders and interests around the world, especially in the tourism sector because it consumes a lot of energy and water and creates a lot of food waste. This requires changing business models, reusing organic waste, synergizing with agriculture, circulating tourist destinations and making the circular economy a sustainable local economic development model with tourism synergies to achieve inclusive and sustainable tourism.

Camilla Campanati et al (2022) in their article entitled "Sustainable Intensification of Aquaculture through Nutrient Recycling and Circular Economies: More Fish, Less Waste, Blue Growth" explains that aquaculture is a growing industry under the pressure of climate change and increasing population growth. Thus, all actors in the value chain including production, transportation, retail and storage must fulfill their respective roles. There will be a supply and demand gap of 28 million tons of fish produced from aquaculture, with an industry growth rate of 9%. Recycling of nutrients and products plays an important role in increasing production yields so the circular economy has the opportunity to increase aquaculture growth and contribute to sustainable development. However, this research only focuses on describing the intensity of aquaculture in relation to global demand.

Methods

In identifying the study to be reviewed, the author uses qualitative methods that are explanatory in nature using secondary data obtained through books, theses, journals, papers, government documents, electronic media and newspapers. After the data is collected, data analysis is carried out by classifying the data obtained according to its category then the data will be analyzed using theories and concepts that have been adjusted previously. The final result of this process will be used as an answer to the research questions that have been asked. The framework in this study is as follows:

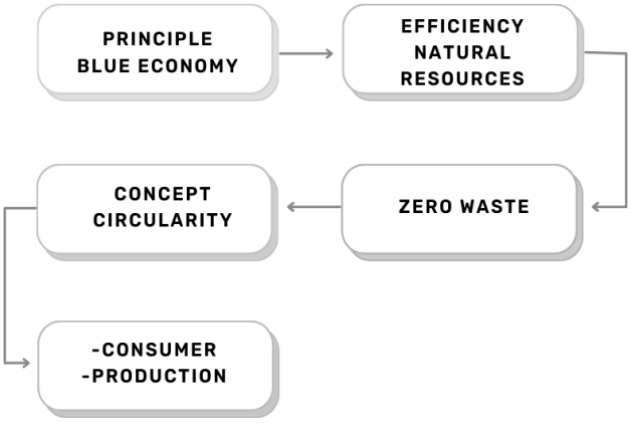

Figure 1. Framework Used in this Research
Source: Author, 2023

Result and Analysis

Small Island Developing States (SIDS)

Coastal issues have not escaped global attention. International perspectives on coastal issues are diverse and encompass a number of factors, ranging from political, economic, environmental, and social aspects. Discussions on these issues are often held in international forums focusing on nature conservation, sustainable utilization of marine resources, natural disaster mitigation, and human rights for coastal communities (Mondry, 2023). reviewing the urgency of developing these coastal areas, the international community managed to form a group of countries that have similar challenges, namely SIDS (Small Island Developing States). SIDS is a group of countries in the world that have similar characteristics, in terms of population, resources, distance, uncertainty of natural disasters, dependence on external impacts and an unstable environment (UNESCO, n.d.). SIDS is a Barbados program of action (BPOA) adopted in 1994 which was further refined through the Mauritius implementation strategy (MSI) in 2005 and the MSI+5 outcome document (United Nations, n.d.).

The United Nations (UN) conference on environment and development or "earth conference", which took place in Rio de Janeiro, Brazil, in 1992, was the first to recognize the existence of Small Island Developing States (SIDS). World commitments to promote sustainable development in SIDS and address specific environmental issues were made as a result of the meeting. The meeting was also a significant step towards recognizing the worldwide obligations of SIDS to support a framework of environmental conservation and sustainable development.

Based on the United Nations (UN) SIDS countries consist of 38 countries categorized based on their geographical location namely Caribbean, Pacific, Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS) The following SIDS countries are spread across the three regions (Gheuens et al., 2019).

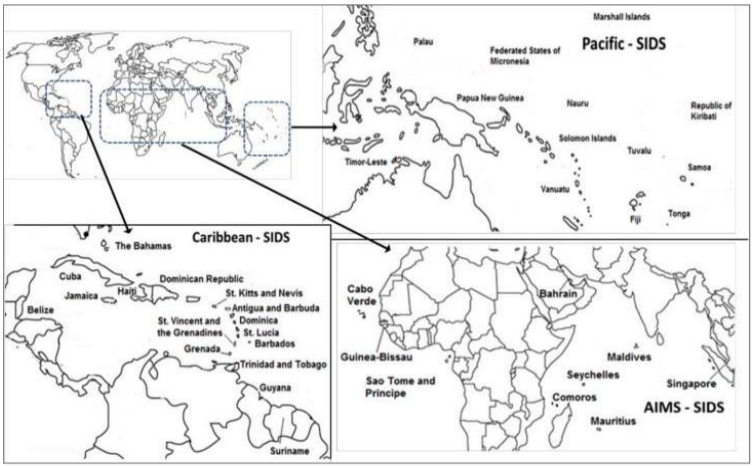

Figure 1. Geographical Distribution of SIDS.
Source: Gheuens, Nagabhatla, and Pradeep Perera, 2019

The map above illustrates the list of SIDS countries defined by the sustainable development goals knowledge platform. These 38 countries are spread into three regions according to their geographical location, in the region Caribbean there are 16 SIDS, in the Pacific region there are 15 SIDS and for the region Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS) there are 8 SIDS. All of these SIDS countries are vulnerable to natural disasters and the impacts of climate change, hindering sustainable development.

Relevance of Circular Economy and Blue Economy

The ocean is the most important part of economic development, many companies and governments are competing to utilize marine resources, but in the process it has many risks. The discourse on the dominance of marine resources in countries developing and coastal risks underestimating the potential for uneven losses (Bennett et al., 2021). The Organization for Economic Cooperation and Development (OECD) states that the ocean industry is a solution to the rise of the global economy and its contribution is projected to double from US$1.5 in 2010 to US$3 trillion by 2030 (OECD, 2017) . The potential of the marine economy to contribute to the economies of developing countries and Small Island Developing States SIDS has led to creation of terms the that describe the interest in marine-based economies such as the Blue Economy.

This is an increasingly prominent concept as a strategy to conserve the world's oceans and water resources. This can be achieved if economic activities are kept in balance with the long-term and sustainable capacity of marine ecosystems. The blue economy is aligned with sustainable development, particularly Sustainable Development Goal (SDG) 14 on life below water. However, uniquely, SDG 15 on life on land and SDG 12 on responsible consumption and production do not have a significant impact on the blue economy (Lee et al., 2020). SDGs 15 and 12 have considerable urgency for the environment and the lives of coastal communities. With increasing fish consumption, wild fish populations are classified as fully exploited, and some species are endangered. In addition, most waste comes from fishing activities and is estimated to be over 20 million tons annually, about 25% of the world's annual fish catch (Zilia et al., 2021).

Fisheries is one of the main sectors of the economy of coastal communities, especially SIDS, its sustainability is the main focus because it has an impact on the provision of employment for coastal communities. However, if the management is carried out continuously, it will result in scarcity and accumulation of waste. The concern of the blue economy is how the concept of sustainability can be implemented in fish farming while the handling of waste is not given much attention so that other instruments are needed to encourage the implementation of the blue economy.

The circular economy is a new economic model that underpins the implementation of the blue economy

concept. This model assumes that the value of products, raw materials, and resources should be retained within the economic system for as long as possible, with the aim of minimizing waste. In the circular economy, there are five areas that require a specific approach: plastics, food waste, essential raw materials, construction and demolition waste, and biomass and bio-based products (Tascioglu, 2018). This approach aligns with the need of the blue economy to deal with wastes generated from fishing. An example is the utilization of waste from sea urchins that are recycled back into biomedical, pharmaceutical and cosmetic products. Products made from sea urchin waste contribute to the protection of biodiversity. From a social perspective, the transition of industry towards a circular economy can secure new job opportunities for local coastal communities and increase community innovation and knowledge in developing environmentally friendly business (Zilia et al., 2021).

In addition to the waste-generating fisheries sector, coastal states such as SIDS are also challenged by the tourism sector. Tourism is a major contributor to employment and GDP in countries, as some of the world's most pristine locations are found in small island developing states (SIDS). Infrastructure built for tourism purposes is intended to be a catalyst for local development. However, tourism also has a notable impact on the environment and places pressure on local resources, resulting in negative externalities. In addition to land use, tourism also demands resources such as water, energy, and food, which in turn produce large amounts of waste. In terms of waste production, tourism plays an important role because the high number of tourists results in a high per capita waste volume, as tourists generate twice as much waste as local communities (Rodríguez et al., 2020).

Integrating the blue economy with the circular economy is the ideal choice to address waste generated by tourism, such as waste management from hotels—the primary consumers of resources and producers of recyclable waste—which can be reprocessed to create economic value, such as compost from organic waste. This approach prioritizes repair over replacement, thereby creating new job opportunities for local communities. It is clear that the circular economy has a strong relevance to the blue economy, particularly in its implementation in the fisheries and tourism sectors. The blue economy focuses on the sustainable empowerment of natural resources, while the circular economy serves as a complementary tool in waste management by minimizing waste. Both align in utilizing natural resources to prevent exploitation and ensure sustainability.

Blue Economy as a Key to Coastal Development in Small Island Developing States (SIDS)

The is part of the overall global marine ecosystem, and its coastal and ocean potential can fulfill enormous sustainable development needs. If the ocean can be maintained in a healthy and productive state, it will Blue Economy play an important role in the future (Spalding, 2016). Coasts and oceans are the last way to achieve sustainable development so that their governance requires special attention, especially in social development, tourism, fisheries, energy and waste management. The is a concern of developing countries, especially coastal countries and blue economy concept Small Island Developing States (SIDS).

Countries that have small territories such as SIDS have many challenges to apply the blue economy, blue economy, the one of which is the limited knowledge and technology in developing the remoteness of the region that inhibits the waste management process is also a special concern of SIDS countries so that small island countries are trying to develop strategies to accommodate various pressures from international economic interactions global markets, increased tourism and environmental impacts (Douglas, 2006) . In the implementation process, the blue economy cannot independently solve various development problems so that supporting instruments are needed in realizing this sustainable development goal. The circular economy is the right economic model as a driver of the blue economy by referring to the principle of zero waste between the two and in the utilization of natural resources.

With the integrity between the there is a blue economy and the circular economy, huge opportunity for the realization of the blue economy in SIDS. In addition, SIDS is a unit of countries that has the potential for blue

economy growth. SIDS are considered ideal for the blue economy because the region includes marine and fisheries sectors, the main reason is reviewed from (FAO, 2014):

1. Wealth of marine resources.
   SIDS as a country with vast territorial waters and abundant marine resources support economic growth in the marine, fisheries and tourism sectors.
2. Dependence on marine resources.
   The economic welfare of the people who depend on the sea makes the development of the quality of the blue economy indispensable in order to provide significant results for the economic growth of the community.
3. Unique potential vulnerabilities.
   SIDS countries are vulnerable to climate and environmental change, making them susceptible to natural disasters.
4. Marine tourism potential.
   Marine tourism is one of the promising objects to improve the economy because it attracts tourists, especially those who like snorkeling, diving, and other marine tourism activities.
5. SIDS are characterized by island and coastal areas, which are beautiful and very natural, making the region provide great potential for the development of marine tourism that can support the economic acceleration of its countries.

The concept blue economy offers a way to develop resources that are locally based but global in scale. The contribution of the blue economy has a significant impact on economic growth if it is well mapped and integrated within a strong institutional policy framework and based on concrete policies and research (Alharthi & Hanif, 2020). This concept is a way out of the many development challenges faced by SIDS because it provides various development solutions and integrates with other fields such as the circular economy to achieve better growth of coastal development.

Conclusion

This research paper discusses the importance of blue economy for sustainable coastal development in Small Island Developing States (SIDS) it highlights the challenges faced by SIDS due to remote geographical location their and isolation from international markets hence the need for solutions to address their economy. The integration of circular economy and blue economy is an effective development solution for SIDS because it can help address various development issues, one of which is in the fisheries and tourism sectors where both sectors are the main components of waste generation. concept The offers a way to develop resources that are locally based but global in scale, the blue economy contribution of the blue economy has a significant impact on economic growth if it is well mapped and integrated within a strong institutional policy framework and based on concrete policies and research.

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