

Sustainable Development Strategy and Strengthening Security on Indonesia's Outer Islands (Case Study on the Natuna Islands, Riau Islands Province)

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ABSTRACT: Sustainable development in Indonesia's outer islands is significant in improving the welfare of local communities while strengthening national sovereignty. This approach includes the development of social, economic, infrastructure, and environmental preservation aspects. The central government is expected to strengthen security posts, build supporting infrastructure, and increase regional and international cooperation in the security sector. Regional governments must involve the community in security activities, implement regional governance and monitoring, and enforce strict laws. Collaboratively, the central and regional governments must establish an integrated command and control center, organize joint training programs, and provide technical training for regional security apparatus. With these strategies, the outer islands will become a prosperous and safe area and strengthen Indonesia's sovereignty. Effective collaboration and implementation between various parties will ensure that development on the outer islands is sustainable, inclusive, and highly competitive.

KEYWORDS: Sustainable Development, Natuna, South China Sea, Economy, Sovereignty

INTRODUCTION

As the largest archipelagic country in the world, with more than 17,000 islands, Indonesia has many strategic areas that spearhead the nation's sovereignty and economy (Ramadhan & Chaerul, 2023). Indonesia's outer islands, part of the country's borders, have a crucial role in maintaining sovereignty and ensuring regional security. These islands are the front line of territorial security and hold varied and sizeable economic potential, including an abundant fisheries sector, exotic tourism potential, and diverse natural resource reserves (Fadhiil & Afriansyah, 2022). However, this great potential has yet to be fully realized due to various obstacles to sustainable economic development.

Development efforts on the outer islands are hampered by several complex challenges (Strachan & Vigilance, 2008). Some areas need more fundamental infrastructure, such as roads, bridges, ports, and other public facilities. The problem of accessibility to education, health, and other essential services also worsens the living conditions of local communities. In addition, the location's isolation causes challenges in terms of connectivity with regional and national economic centers, hampering trade and population mobility. Meanwhile, climate change and the degradation of marine ecosystems due to human activities are serious threats that threaten environmental sustainability and community welfare.

The Natuna Islands are one of the outermost islands in Indonesia, so they play a crucial role in maintaining Indonesia's national sovereignty, especially in geostrategic, security, and maritime economic aspects. Located in the strategic waters of the South China Sea, Natuna stands as the front line of national defense (Arfin Sudirman et al., 2017). With its position on a busy international shipping lane, Natuna is vital in securing Indonesia's territorial territory and detecting and responding to external threats (Ahmad Mustofa, 2022). Also, Natuna's maritime economic potential is enormous, especially in fisheries and other natural resources such as oil and gas. Wise management of these resources contributes significantly to the national economy and maintains the sustainability of resources for future generations (Hidayat & Srifauzi, 2023).

Not only from an economic and security perspective, Natuna also plays a vital role in social and cultural aspects that support national sovereignty (Ajeng Rizqi Rahmanillah et al., 2023). The social life of the people and the national spirit in Natuna help strengthen Indonesia's national identity and presence in the region. Enforcement of maritime law by the Indonesian Navy in this area also ensures that illegal activities such as fishing and smuggling can be minimized (Aulawi et al., n.d.). With sustainable infrastructure development, improving the Welfare of local communities, and close international cooperation, Natuna will become a bastion of sovereignty and a prosperous and competitive region.

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Research Purposes

This research explores the economic potential of Indonesia's outer islands, including natural resources, the fisheries sector, and tourism potential that needs to be optimally exploited. It also seeks to identify various challenges faced in development efforts in these areas. These challenges include limited infrastructure, accessibility to public services such as education and health, and connectivity problems that hinder trade and population mobility. Understanding these potentials and obstacles is hoped to lead to comprehensive solutions to maximize the sustainable use of existing resources.

This research also aims to analyze appropriate strategies and policies for developing sustainable development in Indonesia's outer islands, focusing on the Natuna Islands. The Natuna Islands were chosen as a case study because of their strategic position and great potential, both in economic and defense aspects. This research will develop policy recommendations that the government and stakeholders can apply to support sustainable development and strengthen state sovereignty. This policy includes developing basic infrastructure, improving social Welfare, protecting ecosystems, and strengthening law enforcement in waters. This recommendation can guide the government in formulating efficient and effective development programs in the outermost regions, especially in Natuna so that they can become pillars of national sovereignty and prosperity.

Benefits Of Research

The results of this research are hoped to enrich knowledge, especially in the context of sustainable development, and offer a frame of reference for the government and relevant stakeholders in developing effective policies. It is also hoped that this research will provide practical benefits for people on the outer islands, especially the Natuna Islands, by improving their economic Welfare and ensuring the sustainability of the environment around them.

CONCEPTUAL FRAMEWORK

This research adopts a conceptual framework integrating sustainable development theory, economic potential analysis, and public policy approaches. This perspective ensures that economic development focuses on increasing income and addresses social and environmental aspects holistically. This framework is relevant in navigating existing challenges, especially in outer regions such as the Natuna Islands.

RESEARCH METHODOLOGY

In research on sustainable development in Indonesia's outer islands, a qualitative approach with case study methods will provide an in-depth and comprehensive understanding. The case study focuses on the Natuna Islands, which were chosen because of their relevance to issues of sovereignty, economic potential, and the complexity of the region's development dynamics. Natuna offers a rich example of exploring the interactions between public policy, resource management, and community welfare.

Document analysis will include a review of government policies, official reports, statistical data, and other relevant publications. This document will provide the historical and administrative context necessary to understand the policy framework and its implementation in Natuna. The Natuna case study method will show how sustainable development strategies can be implemented in Indonesia's outer islands. This approach allows for in-depth and contextual analysis, capturing the nuances and complexity of local dynamics often missed in quantitative approaches. With a qualitative approach and comprehensive case study method, this research can significantly contribute to the understanding and practice of sustainable development in the outermost regions of Indonesia, especially in the Natuna Islands.

RESEARCH SCOPE AND LIMITATIONS

This research focuses on the Natuna Islands, which have unique economic, social, and environmental characteristics. Research limitations include limited data availability, research time, and coverage of the studied area. Although focused on Natuna, the findings are expected to offer insights that apply more broadly to other outer islands.

Research Novelty

This research will integrate a comprehensive analysis of sustainable development strategies and territorial sovereignty in the South China Sea. The main focus is on how infrastructure and economic development can strengthen Indonesia's position in Natuna while reducing vulnerability to external threats. The case study will provide holistic empirical data regarding the impact of geopolitical tensions in the South China Sea on the local Natuna economy, including the fisheries, tourism, and investment sectors. This analysis will also show how geopolitical tensions affect the lives and well-being of local communities, providing deeper insight into the economic and social dynamics of the region. The local community empowerment approach is also essential, where active community participation in planning and executing development projects is expected to increase the effectiveness of implemented development policies and programs.

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A comprehensive multi-disciplinary approach, combining aspects of economics, environmental studies, and security, will offer a more holistic and targeted development strategy. This will provide more complete and applicable guidance for policymakers in formulating and implementing development programs in outer regions such as Natuna. As a final result, this research will develop a contextual sustainable development policy model specifically for the Natuna Islands, which can be a reference for other outer island regions in Indonesia. This model will consider various relevant local and global aspects so that it can be applied effectively to increase the sovereignty and Welfare of local communities. Thus, this research aims to fill existing knowledge gaps with a more integrated and comprehensive analysis and provide policy suggestions based on the latest and relevant empirical data.

RESULTS AND DISCUSSION

Sustainable Development

Sustainable development is a paradigm that holistically integrates economic, social, and environmental aspects to ensure long-term prosperity for society without sacrificing natural resources and the quality of life of future generations. This concept emerged as a response to conventional development models, which often focus only on economic growth without considering negative impacts on the environment and social disparities (*Sustainable Development*, n.d.). Therefore, sustainable development aims to balance economic growth, natural sustainability, and social Welfare. One of the main principles of sustainable development is the efficient and responsible use of natural resources, which means avoiding excessive exploitation, which can damage natural ecosystems and habitats (Strachan & Vigilance, 2008). Renewable energy, such as solar power, wind, and biomass, is highly emphasized to replace dependence on fossil fuels, which are non-renewable and can potentially damage the environment (Islam et al., 2023).

In addition, sustainable development requires environmentally friendly technological innovation to increase production efficiency and reduce waste and greenhouse gas emissions (Lee et al., 2020). For example, green technology in the agricultural sector can increase food production without requiring land expansion that destroys forests. Likewise, in the industrial sector, applying eco-efficiency principles can reduce the energy and raw materials used in production, thereby reducing negative environmental impacts (Choudhary et al., 2021). Sustainable development also emphasizes the importance of understanding and managing environmental risks and adapting to increasingly challenging climate change. This involves assessing the environmental impact of each development project and making decisions that select the alternative with the most negligible environmental impact (Khoshnava et al., 2020).

The social aspect of sustainable development includes social justice, inclusiveness, and improving the quality of life for all levels of society. Sustainable development must ensure that economic benefits are not only felt by a few people but are equally distributed to various groups, especially the vulnerable and marginalized (Hajian & Kashani, 2021). Investments in education, health, and social Welfare have a very significant positive impact in the long term. Community participation in decision-making and development processes is also highly emphasized in sustainable development (Litvinenko et al., 2022). Involving local communities, governments, and institutions can ensure that development policies and programs align with community needs and aspirations and increase the sense of ownership and responsibility for these projects.

Figure 1. Sustainable Development Model



Source: Arena Solutions

In a global context, sustainable development also demands international cooperation to overcome common challenges that one country cannot solve alone (Jin G., 2019). Fairtrade, eliminating exploitative practices, and finding solutions to problems such as

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climate change and biodiversity loss require cross-border cooperation. Implementing international standards in environmental protection and workers' rights is also essential to ensure that economic development does not harm people or nature in other countries. Fiscal and monetary policies must also be adjusted to support sustainable development (Graham Haughton, 2021). For example, imposing a carbon tax could encourage using renewable energy and green technologies. At the same time, fiscal incentives for companies adopting sustainable practices could increase motivation to protect the environment.

At the local level, regional governments and cities also have a crucial role in promoting sustainable development (Ullah et al., 2021). Increasingly rapid urbanization requires intelligent and sustainable city planning. This includes building efficient and environmentally friendly mass transportation, using innovative technology for resource management, and efforts to increase green spaces and urban sustainability. Education and public awareness are essential in promoting sustainable development (Osborne et al., 2015). By increasing people's understanding of the importance of protecting the environment and how individual actions can contribute, it is hoped that there will be changes in behavior that are more environmentally friendly (Koval et al., 2021).

Development Sustainable development in various countries

development is an effort to create an economic system that is productive, efficient, fair, and able to survive in the long term (Litvinenko et al., 2022). This requires changing how we view and manage resources and total commitment from various parties, including government, business, and society. Only with an integrative and collaborative approach can we achieve the primary goal of sustainable development, namely equal prosperity for all humanity, without sacrificing the earth and future generations (Osborne et al., 2015).

To understand how sustainable development can play a vital role in the economic and social welfare and sovereignty of a country, let us look at how sustainable economic development approaches are carried out by various countries. First, Jeju Island in South Korea has developed into a major tourist destination and has maintained a solid commitment to biodiversity and the environment (Kim et al., 2017). Tourism development is directed at ecotourism principles, utilizing renewable energy such as wind and sun, and implementing organic farming policies (Park & Njite, 2010). The South Korean government has exploited Jeju's continued development to assert national sovereignty, particularly in territorial conflicts with neighboring countries. Jeju's strategic position has been strengthened by sustainable development infrastructure, strengthening South Korea's regional claims and presence.

Second, Galapagos Island in Ecuador is renowned for its unique ecosystem (Hunt et al., 2021). The Ecuadorian government has limited the number of tourists and implemented strict programs to preserve the environment. Revenue from tourism is used to fund environmental conservation and education projects. Through a focus on sustainable development, Ecuador has succeeded in increasing supervision and control of its islands (Mestanza-Ramón et al., 2020). These efforts have also supported Ecuador's claim to sovereignty over the maritime region around the Galapagos, which has rich biodiversity and significant maritime resources.

Third, the Australian island of Tasmania, Tasmania, has adopted many renewable energy projects, such as wind and hydroelectric, to reduce dependence on fossil fuels (Islam et al., 2023). By strengthening an independent and sustainable economy, Australia emphasizes its presence and ownership of this island (Jacob & Liyanapathirana, 2018). This step could strengthen broader claims on the international stage regarding environmental policy and maritime sovereignty in the Southern Ocean.

Lastly, the Faroe Islands in Denmark have developed a highly sustainable and efficient fisheries model (Danielsen & Agnarsson, 2018). Advanced fishing technology and methods are combined with strict regulations to ensure the sustainability of fish stocks. This action strengthened Denmark's sovereignty over the Faroe Islands by creating an economy resilient to external changes and ensuring that natural resources remained in their control (Eigaard et al., 2011). This gives Denmark a stronger negotiating position in international forums regarding maritime resources.

Outermost Island in Indonesia

As the largest archipelagic country in the world, Indonesia has several islands located on the outermost lines of its territory. These outer islands have a strategic role in maintaining state sovereignty, securing territorial boundaries, and exploiting their economic, social, and ecological potential (Ajeng Rizqi Rahmanillah et al., 2023). These outer islands are often the front line in maintaining Indonesia's territorial integrity (Arfin Sudirman et al., 2017). The following are some of Indonesia's outermost islands from various regions, which are often mentioned in the context of national sovereignty and defense:

Table 1. Outer Islands in Indonesia

No	Island Name	Location	Information
1	Rondo Island	Nanggroe Aceh Darussalam	It is located in northwest Sumatra and directly borders the Indian Sea.
2	Island of the Idols	North Sumatra	Located in the Melaka Strait, its position is strategic for monitoring movements in the Melaka Strait.
3	Simeulue Island	Nanggroe Aceh Darussalam	Located to the west of Sumatra Island.
4	Nias Island	North Sumatra	It is one of the largest islands to the west of Sumatra.
5	Enggano Island	Bengkulu	It is located west of Sumatra, close to the Indian Ocean.

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6	Natuna Island	Riau islands	Located in the South China Sea, it has become a center of attention because of its strategic presence in terms of geopolitics and economics
7	Anambas Island	Riau islands	It is located in the South China Sea and is known to be rich in marine natural resources.
8	Sebatik Island	North Kalimantan	It is located in the northern part of Kalimantan Island and directly borders Malaysia.
9	Miangas Island	North Sulawesi	It is one of the outermost islands in northern Indonesia, and it directly borders the Philippines.
10	Marore Island	North Sulawesi	It is located north of Sulawesi and close to the Philippine border.
11	Morotai Island	North Maluku	It is a strategic island in North Halmahera.
12	Wetar Island	Southwest Maluku	It is located close to the Timor Leste border.
13	Kisar Island	Southwest Maluku	It is located in the Banda Sea, close to Timor Leste.
14	Batek Island	East Nusa Tenggara	It is located near the border with Timor Leste.
15	Dana Island	East Nusa Tenggara	It is located south of Timor Island and close to international waters.
16	Alor Island	East Nusa Tenggara	It is located in the east of East Nusa Tenggara Province.
17	Rote Island	East Nusa Tenggara	It is the outermost island in the south of Indonesia.

Source: Data processed from various sources

These outer islands have strategic and essential value for Indonesia in several aspects: (1) Security and Defense; these islands help monitor activities on maritime borders. They are a base for the Indonesian Navy to patrol and monitor external threats, such as smuggling, fishing, and other illegal activities (Anton et al., 2021). (2) Territorial Sovereignty: The existence and management of these islands confirms Indonesia's territorial boundaries and sovereignty. International recognition of these boundaries is also strengthened by maintaining presence and activities on these islands (Arfin Sudirman et al., 2017). (3) Economy: Several outer islands are rich in natural resources like fish, oil, and gas. Wise exploitation of these resources can improve the economy of remote areas and overall contribute to the national economy (Aris Sarjito et al., 2022). (4) Social and Cultural: These islands are also inhabited by people with unique cultural diversity (Guan & Koh, 2022). Sustainable development on the outer islands can improve local residents' quality of life and preserve their cultural heritage.

Geographic Conditions and Natural Resources of the Natuna Islands

The Natuna Islands are an integral part of the territory of the Unitary State of the Republic of Indonesia, located in the South China Sea. Natuna is one of Indonesia's 92 outermost islands, essential in maintaining sovereignty and offering enormous economic and ecological potential (Redaksi, n.d.). The Natuna Islands are between Peninsular Malaysia and Kalimantan and directly border with neighboring countries such as Vietnam and Malaysia (Wibisono, 2014). Administratively, Natuna is part of the Riau Islands Province. The Natuna Islands comprise around 272 islands, of which 27 are inhabited. Natuna Besar Island is the main island and administrative and economic center of the Natuna Islands (Mirmanto, 2014).

The topography of the Natuna Islands varies greatly, from lowlands to mountains. Natuna has a long coastline with coral reefs, lagoons, and white sandy beaches (Bonai et al., 2022). This geographical condition provides attractive natural beauty and great potential for marine tourism. Natuna is located in a tropical climate zone with two main seasons: the rainy and dry seasons (FADILLAH, 2021). The average air temperature in Natuna ranges from 23°C to 30°C, with relatively high rainfall, especially from November to February. This tropical climate supports biodiversity both on land and in sea waters.

Economic Development

Natuna has an immense wealth of natural resources; the following table explains the condition of Natuna's natural resources in the fisheries, oil, and natural gas sectors, ecosystem resources, tourism potential, forestry, agriculture, plantations, and livestock:

Table 2. Natural Resources of the Natuna Islands

No	Natural resources	Information
1	Fishery	Natuna waters are rich in fish resources. Various types of commercial fish, such as tuna, tuna, grouper, and many other species, can be found in this region. The Natuna Islands are also an essential habitat for various types of marine biota, such as squid and shrimp, which have high economic value. Healthy coral reefs are also an essential ecosystem for the sustainability of fisheries resources in Natuna. Minister of Maritime Affairs and Fisheries Susi Pudjiastuti (term of office 27 October 2014 – 20 October 2019) assesses that the Natuna Islands have enormous economic potential. In fact, for the fisheries sector alone, the potential is estimated to reach USD 400 million or around IDR 5.26 trillion (estimated exchange rate IDR 13,166/USD). Data for 2019 shows that marine fish cultivation production in this region reached 203.34 tons. West Bunguran District has become a production center for marine fish cultivation, achieving 70.98 tons.

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		On the other hand, brackish water fish cultivation is still minimal, with production only reaching 0.22 tonnes concentrated in North Bunguran District. Seaweed commodities also show good potential in Natuna Regency. Total production of seaweed cultivation in 2019 reached 27.1 tons. Pulau Tiga District was the leading producer, contributing 26.6 tons, while Serasan District recorded a production of 0.5 tons. Freshwater fish cultivation is also developing in several sub-districts. Freshwater fish cultivation production reached 36.2 tons, with production distribution concentrated in the districts of Bunguran Batubi (18 tons), East Bunguran (15.64 tons), and Bunguran Tengah (2.56 tons).
2	Oil and Natural Gas	Natuna is famous for its abundant oil and natural gas reserves, especially in the Natuna D-Alpha Block. The Natuna D Alpha Block is around 250 km from the Natuna Islands—estimated 46 trillion cubic feet of gas reserves. However, developing the Natuna Block is problematic because 70% of its gas reserves contain CO ₂ . This potential makes Natuna a focal point in the oil and gas extractive industry. The exploitation of these resources has made a significant contribution to the national economy. However, sustainable management is needed to reduce environmental impacts and ensure local communities enjoy economic benefits.
3	Ecosystem Resources	Apart from fisheries and hydrocarbons, Natuna has various ecosystem resources that are no less important. The mangrove forest area on the Natuna coast plays a vital role in protecting the coastline from erosion and is a habitat for various species of birds and marine biota. Mangroves also have the potential to be developed into an educational and sustainable ecotourism destination. Based on the 2023 National Mangrove Map, the area of mangrove forests in Natuna Regency consists of 397 hectares of sparse mangroves, 72 hectares of medium mangroves, and 4,404 hectares of dense mangroves, for a total of 4,873 hectares.
4	Natural Tourism Potential	Natuna's natural beauty, such as white sandy beaches and stunning coral and mountain panoramas, provides excellent opportunities for the tourism sector. Destinations such as Sisi Beach, Senoa Island, and Senubing Hill are the main attractions for tourists. Apart from that, the rich local culture and friendliness of the local people are also a significant added value. The development of the tourism sector in Natuna must be carried out by paying attention to the principles of sustainability so as not to damage the beauty and balance of the existing natural ecosystem.
5	Forestry and Agriculture	Although smaller than the fisheries and oil and gas sectors, the forestry and agricultural sectors contribute to Natuna's economy. The tropical forests in Natuna are rich in diverse flora and fauna and provide wood and non-wood that local communities can utilize. In addition, agricultural land in Natuna is planted with various types of food and horticultural crops, which support local food security. Natuna Regency had 419.5 hectares of rice fields in 2019. This data shows that most rice fields in Natuna do not have an irrigation system. It was recorded that only 156 hectares of rice fields were equipped with an irrigation system, while the remaining 263.5 hectares were non-irrigated rice fields, with 257.5 hectares of them being rain-fed rice fields. Even though the irrigation system is still limited, farmers in Natuna still use existing rice fields for rice cultivation. Of the 312 rice fields planted with rice, the majority, 246 hectares, are rice fields without an irrigation system. This indicates that the rice farming system in Natuna is still very dependent on natural rainfall.
6	Plantation	The plantation sector is dominated by coconut and clove plants, which occupy 12,405 hectares and 12,132.5 hectares of land, respectively. Among these plantation commodities, coconut shows significant potential as a leading trade commodity, with production figures reaching 11,365.80 tons, surpassing other commodities.
7	Farm	The livestock sector in Natuna is dominated by the business of raising beef cattle, goats, and chickens. Data shows a positive trend in livestock production in the region. Beef cattle production 2019 reached 78,912 kg, an increase from 76,704 kg in the previous year. A significant increase was seen in goat production, which jumped from just 75 kg in 2018 to 375 kg in 2019. The poultry sector also showed a similar trend. Broiler chicken production increased from 609,804 kg to 633,295 kg, while free-range chicken increased from 17,312 kg to 19,772 kg in the same period. Apart from meat, poultry egg production, especially free-range chicken eggs, increased in 2019, reaching 8,660 kg.

Source: Data processed from various sources

Infrastructure Development

Development in the Natuna Islands has become an essential focus for the Indonesian government, considering its strategic role in maintaining its sovereignty and economic potential. The following are several aspects of development that have been carried out in the Natuna Islands:

1. Infrastructure, Ports, and Airports: The development and improvement of sea ports and airports have been carried out to improve connectivity and accessibility (Yudha & Dina, 2020). For example, Ranai Airport has been renovated and expanded to serve

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commercial and military flights. Roads and Bridges: Construction and repair of roads and bridges are carried out to increase mobility and connectivity between islands and support local economic activities.

2. Defense and Security, Military Bases: Construction and strengthening of military bases, including TNI Navy and TNI Air Force bases, to maintain the sovereignty and security of border areas (Rusydi, n.d.). Maritime Surveillance: Patrol boats and maritime surveillance devices should be added to prevent illegal activities such as fishing and smuggling.

3. Economy, Fisheries: Development of fisheries facilities, such as fish auctions and seafood processing factories, to support a sustainable fishing industry (Nurani et al., 2020). Tourism: Develop tourist destinations by building supporting infrastructure such as accommodations, restaurants, and recreational facilities to attract local and international tourists.

4. Social and Welfare, construction of health facilities such as community health centers and hospitals to improve health services for the Natuna community (Sucipta, 2022). In the education sector, facilities such as schools and libraries should be developed and improved to improve the quality of education for children and youth in Natuna. The Social Welfare Program includes the implementation of social welfare programs, such as assistance for agriculture, fisheries, and skills training programs to improve the standard of living of local communities (Pratama et al., 2022).

5. Communication and Information Technology, Telecommunication Networks: Developing and improving telecommunications and internet networks to improve communication and access to information in the Natuna Islands (Hasmiza & Romelah, 2022).

6. Energy and Environment, Renewable Energy: Development of renewable energy projects such as solar and wind power plants to meet local energy needs and reduce dependence on fossil fuels (Uksan, n.d.). Environmental Management involves implementing environmental conservation programs and sustainable management of natural resources to maintain the ecosystem and biodiversity in Natuna.

The development that has been carried out shows the Indonesian government's commitment to promoting Natuna as a strategic area that significantly contributes to sovereignty and the national economy. Natuna will become a strong fortress and an advanced and sustainable economic center through these various development programs.

Social Development

Social development in the Natuna Islands is the main focus in creating sustainable prosperity. One crucial element is increasing access to education. Data from the Ministry of Education shows that the government has been active in establishing new schools and improving the quality of education in this area (Giri et al., 2024). This can be seen from the various scholarship programs given to outstanding students and intensive teacher training. These measures are designed to ensure that children in Natuna receive an education on par with other regions in Indonesia to better contribute to their region's future.

Apart from education, the government also pays great attention to the health sector. Through the Ministry of Health, the health service infrastructure in Natuna has been improved by increasing the number of health centers and hospitals and providing adequate medical personnel and medicines. A mobile health service program was also implemented to reach remote areas difficult to access (Giri et al., 2024). This effort is essential to ensure that all Natuna people have equal access to health services, ultimately improving their quality of life.

Skills training for local communities is no less important. The government and various institutions have held various trainings to increase the capacity of human resources in Natuna. This training covers fisheries, agriculture, seafood processing, and tourism. With honed skills in these fields, local communities are expected to be able to utilize Natuna's economic potential more effectively and sustainably. This capacity building supports the economic independence of the community and opens up new opportunities that can improve their standard of living.

Sustainable Development and Sovereignty

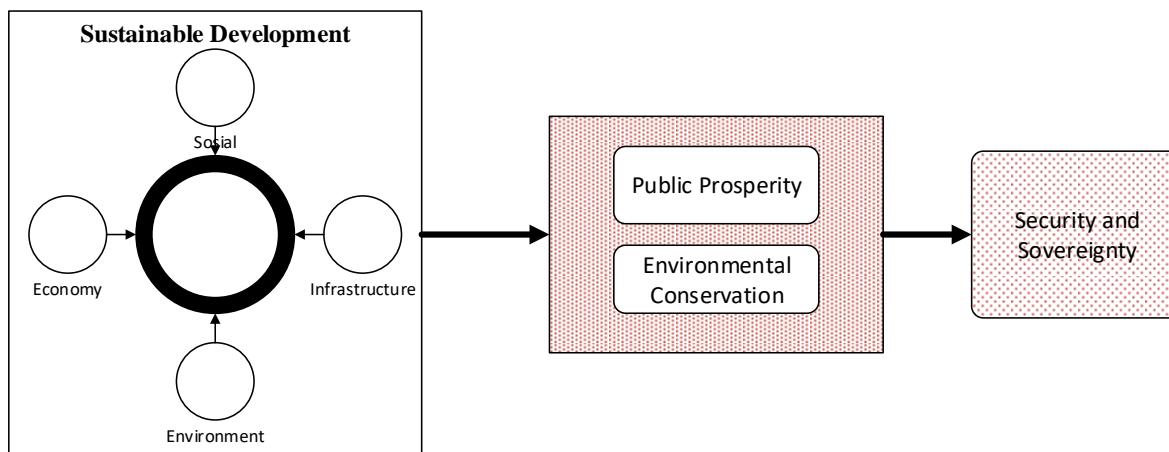
Sustainable development is a strategic concept that seeks to integrate economic growth, social Welfare, infrastructure development, and environmental preservation as a complementary and mutually supportive unit. Implementing this concept in Indonesia's outer islands is essential not only to improve the welfare of local communities but also to strengthen national sovereignty. From a social perspective, sustainable development focuses on improving the quality of life and community participation (De Guimarães et al., 2020). The establishment of schools and health centers will improve the education and health of residents, which in turn strengthens human resource potential. Empowerment programs such as skills training and increasing local capacity will make communities more independent and able to contribute productively to economic activities. Thus, social integration through good education and health, as well as community empowerment, is the basis for sustainable social Welfare.

The economic aspects of sustainable development on the outer islands are fundamental to pay attention to. Economic diversification through using existing natural resources, such as fisheries, agriculture, and natural tourism, can drive the local economy (Lashitew et al., 2021). Government support in the form of access to microcredit, SME programs, and supportive fiscal policies such as light taxes and incentives for investment are also critical. By building a diverse and sustainable economy (Gibson-Graham & Dombroski, 2020), people on outer islands will not only have many sources of income but will also be more resistant to global economic fluctuations. This creates a strong and independent local economy, supporting economic sovereignty and national resilience.

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Infrastructure is also one of the main pillars of sustainable development (Khoshnava et al., 2020). Facilities such as ports, airports, roads, and good communications networks are vital to connecting outer islands with other economic centers and facilitating the movement of goods and people. Adequate infrastructure supports education by making it easier to access schools, health by accessing health centers, and the economy by making it easier to transport local products to broader markets. Apart from that, good water treatment and sanitation facilities can better maintain public health. Stable electricity infrastructure also enables the development of the home industry, which overall increases the productivity and Welfare of local communities.

Figure 2. The Influence of Sustainable Development on Sovereignty



Source: Research Results, 2024

Environmental preservation is the fourth pillar of sustainable development, and it is crucial, especially on the outer islands where the ecosystem is very fragile. Implementing environmentally friendly practices in various sectors, such as organic farming and sustainable fisheries, can maintain the balance of the local ecosystem. In addition, the importance of nature conservation through developing marine parks, protected conservation areas, and reforestation programs must be addressed. The government and various institutions need to educate the public about the importance of protecting the environment so that they can be at the forefront of conservation. With good environmental preservation, biodiversity and natural resources on the outer islands will not only be maintained for future generations but will also become valuable assets that support sustainable development.

Collaboration between social, economic, infrastructure, and environmental aspects in sustainable development improves community welfare and strengthens sovereignty on the outer islands. With quality human resources, a competitive economy, adequate infrastructure, and a sustainable environment, these islands will become economically and socially independent and robust regions. Central and regional governments must ensure that the policies and programs align with local conditions and needs so that the benefits can be felt optimally.

Ultimately, implementing sustainable development on the outer islands is to meet short-term goals and build a strong foundation for the future. With all their potential and challenges, the outer islands have a strategic role in maintaining Indonesia's territorial sovereignty. By ensuring that development is carried out sustainably, we protect the environment, improve people's Welfare, and strengthen Indonesia's position as an independent and sovereign country. The integration of these four aspects is the key to creating prosperous and competitive outer islands and being at the forefront of maintaining national sovereignty.

Strategic Recommendations

A collaborative strategy involving central and regional governments is needed to achieve sustainable development in Indonesia's outer islands. Here are some strategic suggestions for local and central governments:

Table 3. Strategic Recommendations for Central Government

No	Strategic Recommendations	Follow-up
1	Increased Budget and Investment	Allocate a special and adequate budget for development on the outer islands. This should include education, health, infrastructure, and environmental conservation funding. Encourage investment from the private and public sectors to support various sustainable development initiatives in the region.

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2	Supporting Regulations and Policies	Create and implement supportive fiscal policies, such as tax incentives for investment in strategic sectors. Revise regulations to facilitate the business licensing process on the outer islands while maintaining environmental sustainability.
3	Technology and Innovation Facilitation	Encourage the application of new environmentally friendly technologies in the agriculture, fisheries, and natural resource management sectors. Provide a digital platform that facilitates access to information, training, and technical assistance for communities on outer islands.
4	International Relations and Partnerships	Build partnerships with neighboring countries and international organizations for sustainable development cooperation programs on the outer islands. Use foreign aid and international grants to support environmental and infrastructure development programs.
5	Defense and security	<p>Increasing security posts by building and improving security post facilities for the TNI, Polri, and Maritime Security Agency (Bakamla) on the outer islands. These facilities must be equipped with sophisticated communication and monitoring equipment. Launching a routine patrol program in the waters and land around the outer islands to prevent various potential threats, such as smuggling, illegal fishing, and other illegal activities.</p> <p>Development of Supporting Infrastructure through investment in constructing and maintaining supporting infrastructure such as emergency airstrips, military ports, and monitoring radars. This will improve early detection and response capabilities to threats. Modernization of the equipment and defense equipment used by the TNI and Polri in outer areas, including patrol boats, surveillance aircraft, and communications systems.</p>

Source: Research Results, 2024

Table 4. Strategic Recommendations for Regional Government

No	Strategic Recommendations	Follow-up
1	Mapping and Identification of Local Potential	Carry out local economic potential mapping to focus development on leading sectors. Potentials such as fisheries, natural tourism, and organic farming need to be identified and developed. Develop a comprehensive database of natural and human resources in the region that can be used as a reference in various development initiatives.
2	Community Empowerment and Participation	Launch ongoing skills training and education programs for local communities. This includes technical and business management skills. Involve the community in the decision-making process regarding development programs to ensure the policies adopted align with local needs.
3	Targeted Infrastructure Development	Prioritize developing and maintaining essential infrastructure such as road access, electricity, clean water, and sanitation. This infrastructure is critical to support economic activities and community welfare. Invest in digital infrastructure, such as internet networks, to improve local communities' access to information and communication.
4	Environmental Preservation and Conservation	Implement programs to preserve the natural environment, such as reforestation and development of conservation areas. Create strict local regulations to control pollution and overfishing. Involve local communities in natural resource management programs to help protect the environment.
5	Defense and security	

Source: Research Results, 2024

Table 5. Synchronization and Collaboration Between Central and Regional Governments

No	Strategic Recommendations	Follow-up
1	Integrated Coordination and Cooperation	Form a coordination team consisting of central and regional government representatives to facilitate the implementation of sustainable development programs. This team will monitor progress, evaluate results, and resolve existing obstacles. We are also building an integrated reporting system to monitor and evaluate the effectiveness of implemented programs.
2	Integrated Assistance and Grants Program	Provide technical assistance and grant programs specifically for development on the outer islands, focusing on social, economic, infrastructure, and environmental aspects. Promote inter-sector and inter-ministerial synergy to optimize existing resources and accelerate development.
3	Capacity of Regional Government	Provide training and assistance to local governments to increase their capacity in planning, implementing, and evaluating sustainable development programs. Ensure the

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	transfer of knowledge and technology from the central government to the regions so local governments can manage resources better and more efficiently.
4	Defense and security

The integrated command and control system is a form of integrated command and control center that integrates communications between the central government, regional governments, and security forces. The center will serve as a coordination platform for rapid response to threats. Implement standard operational protocols for communication and joint actions between central and regional security forces.

Joint Training Program: Organize joint training between the TNI, Polri, Bakamla, and village security task forces on a regular basis to increase preparedness and coordination in facing various potential threats. Hold crisis management simulations involving various stakeholders to test and improve integrated emergency responses.

Capacity Building and Technical Training: Provide technical training and coaching for regional security apparatus, including training in the use of technology and strategies for handling modern threats. Ensure that sufficient budget allocation is made to increase the capacity of security personnel from both the central and regional levels.

Source: Research Results, 2024

With the above strategies, central and regional governments can work together effectively to implement a holistic concept of sustainable development. The successful implementation of this will improve the Welfare of the people on the outer islands, ensure environmental sustainability, and strengthen Indonesia's sovereignty. Governments must prioritize collaboration, openness, and innovation to achieve these goals for a better future for all.

Strengthening security and defense on Indonesia's outer islands is crucial in ensuring sustainable development. Through collaboration between the central government, regional governments, and local communities, these strategies will not only support the physical security of the region but also create the sense of security needed to encourage economic, social, and infrastructure development. All of these elements will contribute significantly to Indonesia's sovereignty, both in the local and national context. Implementing a planned, effective, and inclusive strategy will ensure that the outer islands can develop into a prosperous, safe, and highly competitive area and be the foremost guardians of state sovereignty.

CONCLUSION

Sustainable development in Indonesia's outer islands is a strategic step involving integrating social, economic, infrastructure, and environmental conservation aspects. The findings show that by improving the quality of education and health, as well as community empowerment programs, residents' quality of life can be significantly improved. Economic diversification that utilizes local potential, such as fishing, agriculture, and natural tourism, can create a stable and sustainable source of income. In addition, the development of basic infrastructure such as roads, electricity, clean water, and sanitation not only facilitates economic growth but also improves the overall Welfare of society.

Environmental preservation as an integral part of sustainable development also receives special attention. Implementing environmentally friendly practices, nature conservation, and educating the public about the importance of protecting local ecosystems is the key to protecting biodiversity and natural resources on the outer islands. Strengthening supporting infrastructure such as security posts, monitoring radars, and state border markers will strengthen security and maintain physical territorial sovereignty. Thus, the combination of social, economic, infrastructure, and environmental conservation development will create outer islands that are prosperous and competitive, as well as become strong bastions of homeland sovereignty.

This overall strategy requires close collaboration between central and regional governments. The programs must be inclusive and responsive to local needs, with full support from the community. Community involvement in security and development programs, as well as synergy between various institutions, both national and international, will ensure effective and sustainable implementation. Thus, sustainable development on the outer islands will improve local communities' quality of life and strengthen Indonesia's position as a sovereign and independent country, with the outer islands being the front line of national defense and prosperity.

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