

The Spratly Archipelago of Vietnam in Maritime Economic Development and Global Trade

Tran Trung

The Institute for Economic Strategy Studies, Vietnam

Abstract

This study examines the role of the Spratly Archipelago in Vietnam's maritime economic development amid global transformation toward digitalization and sustainability. It evaluates the region's geographical characteristics, marine ecosystems, and connectivity to international trade routes, highlighting its potential in maritime logistics, offshore renewable energy, fisheries, and ocean data infrastructure.

The study further assesses the legal and historical foundations of Vietnam's sovereignty as an institutional basis for sustainable marine governance. Based on these findings, it proposes a development framework positioning the archipelago as a new growth pole in Vietnam's maritime economic strategy.

Keywords: Spratly Archipelago; maritime economy; maritime logistics; renewable energy; maritime governance; green economy.

1. Introduction

Amid global economic transformation driven by digitalization and decarbonization, the marine economy is increasingly becoming a crucial growth driver for many countries. As a coastal nation, Vietnam has identified sustainable marine economic development as one of its strategic pillars. This orientation is affirmed in Resolution No. 36-NQ/TW, dated October 22, 2018, of the Central Committee of the Communist Party of Vietnam on the Strategy for Sustainable Development of Vietnam's Marine Economy to 2030, with a vision to 2045, which emphasizes the sea as a vital economic space and a driving force for national development. The documents of the 14th National Congress of the Communist Party of Vietnam further emphasize the requirement for marine economic development linked to innovation in growth models, a green economy, and deep international integration.

Within that structure, the Spratly Archipelago, located in the center of the South China Sea, not only holds territorial significance but also represents a unique economic space capable of directly participating in the global value chain. Therefore, studying the economic role of the Spratly Archipelago is crucial for formulating Vietnam's maritime development policies.

2. Advantages of geographical location and the spatial structure of the maritime economy

The Spratly Archipelago is located in the southern South China Sea, spanning an area of approximately 180,000 km² and comprising over 100 geographical features including islands, rocks, shoals, and reefs. This location places the islands at the intersection of important international shipping routes, providing natural

connectivity to major economic centers in the Asia-Pacific region.

From an economic perspective, the Spratly Archipelago can be seen as a system of interconnected functional clusters. The Song Tu cluster, located at the northernmost point of the archipelago, includes Song Tu Dong and Song Tu Tay islands and serves as a link to shipping routes from Northeast Asia. The Nam Yet cluster comprises Nam Yet island and surrounding features, where coral reefs thrive and water depths vary greatly, providing suitable anchorage for medium-tonnage vessels seeking shelter from storms. The Sinh Ton cluster, located in the center, contains several key features for fisheries logistics and maritime rescue. Finally, the Truong Sa cluster, with Truong Sa Lon island as its core, has favorable conditions for developing integrated services such as energy supply, freshwater provision, and technical infrastructure.

One of the region's most striking features is its coral reef geology. The coral reefs in the Spratly Archipelago were formed over millions of years, creating a unique topographical structure capable of absorbing and dispersing wave energy, minimizing the impact of large waves, acting as a natural shield protecting the islands, and facilitating stable economic activities. Compared to man-made engineering solutions, the coral reef ecosystem offers long-term benefits with significantly lower maintenance costs.

Furthermore, the coral reef ecosystem in the Spratly Archipelago boasts a high level of biodiversity, serving as a habitat for many economically valuable aquatic species. Coral reefs, seagrass beds, and shallow waters form a continuous ecosystem, acting as a marine biological reservoir. This ecosystem not only supports fisheries but also provides significant potential for the development of marine biotechnology industries, particularly in the pharmaceutical and biomaterial sectors.

3. Legal basis for Vietnam's sovereignty over the Spratly Archipelago

3.1. International legal comparison: The rule of law and arbitration awards

Vietnam consistently resolves issues in the East Sea on the basis of international law, particularly the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which is considered the comprehensive legal framework governing the rights and obligations of states at sea. In this context, the Permanent Court of Arbitration (PCA) ruling in the Philippines-China case on July 12, 2016, is of particular importance. It rejected the "nine-dash line" claim and arguments about "historical rights" that are inconsistent with UNCLOS, while affirming that maritime rights must be established based on the provisions of this convention. The ruling also clarified that the legal status of entities must be determined based on their natural characteristics, and that artificial reclamation or construction activities do not alter this legal nature. This contributes to strengthening the transparency, stability, and predictability of the legal order at sea, limiting unfounded expansionist claims, and minimizing the risk of conflict.

On that basis, Vietnam consistently affirms its sovereignty in accordance with international law, while supporting the PCA ruling as an important legal precedent in the interpretation and application of UNCLOS. Respecting and implementing the

rulings of international judicial bodies not only strengthens the legitimacy of Vietnam's legal position but also contributes to promoting a stable, rules-based, transparent, and predictable cooperative environment.

In the context of increasing regional and international emphasis on the role of common legal norms, Vietnam's consistent approach demonstrates a connection between protecting national interests and contributing to maintaining legal order at sea. This also serves as an important basis for promoting regional cooperation mechanisms, aiming for a stable, safe, and favorable maritime environment for economic, trade, and sustainable development activities.

3.2. *Historical evidence and legal basis for Vietnam's sovereignty*

Vietnam possesses ample historical evidence and legal grounds to assert its sovereignty over the Spratly Archipelago continuously, peacefully, and in accordance with international law.

From the 17th century onwards, the feudal states of Vietnam exercised sovereignty through the Hoang Sa and Bac Hai fleets, conducting maritime surveys, exploiting resources, and managing the sea areas. These activities are clearly documented in official historical records such as *Phu Bien Tap Luc*, *Dai Nam Thuc Luc*, and the Nguyen Dynasty's Chau Ban system, reflecting the practical, continuous, and organized exercise of state power.

At the same time, Western sources from the 17th-19th centuries, such as the writings of Bishop Jean-Louis Taberd in his book *Dictionarium Anamitico-Latinum* (1838) or the map of An Nam Dai Quoc Hoa Do, clearly identified the "Paracel" archipelago (including Hoang Sa and Truong Sa) as belonging to the territory of An Nam. The fact that independent historical sources from outside completely coincided with the Nguyen Dynasty's imperial archives created a multi-dimensional network of evidence, eliminating any doubt about the authenticity of Vietnam's sovereignty.

During the protectorate period, France, acting on behalf of Vietnam, continued to maintain administration of the archipelago through survey and garrison activities. Following the 1954 Geneva Accords, the government of the Republic of Vietnam took over and exercised sovereignty, including erecting sovereignty markers and establishing administrative units.

The period from the 1930s to 1975 was not only a military continuation but also the integration of the Spratly Archipelago into the global administrative system. When France, acting on behalf of Vietnam, participated in international conferences or registered meteorological and hydrological stations in the archipelago with the International Meteorological Organization (IMO - the predecessor of the WMO), France established an extremely convincing "civil sovereignty record." The regular dissemination of storm forecasts and maritime safety information to international ships by these stations transformed the Spratly Archipelago from remote entities into a responsible part of Vietnam's maritime community.

A new, dialectical perspective lies in the tacit recognition by the international community at the 1951 San Francisco Conference. There, the Vietnamese national

delegation, led by Prime Minister Tran Van Huu, solemnly declared sovereignty over the Hoang Sa and Truong Sa archipelagos in the presence of 51 member states. The most important aspect was not just the declaration itself, but the lack of objection from the participating nations, including major maritime powers. In international law, a nation's public declaration of sovereignty without rejection by other nations at a crucial multilateral forum is considered irrefutable evidence of international recognition of that entity's legal status.

Furthermore, the continuity of sovereignty was reinforced through "resource management and in-depth scientific research" activities. Under the Republic of Vietnam, the licensing of guano mining and seabed geological surveys were not only for economic purposes, but also constituted the exercise of sovereign rights over the continental shelf and surrounding waters. The issuance of administrative decrees such as Decree No. 143-NV in 1956, which incorporated the archipelago into Phuoc Tuy province, created a hierarchical management structure from the central to the local level.

Overall, the combination of historical evidence, practical administrative activities, and records from independent sources shows that Vietnam's sovereignty over the Spratly Archipelago was established early, has been continuously maintained, and is consistent with the norms of international law.

4. Potential for economic development in energy and marine resources.

4.1. International maritime trade and logistics

According to the International Maritime Organization's Global Maritime Trade Report 2026, the South China Sea is one of the world's most important shipping corridors, with approximately one-third of global trade goods transported through the region. Within this structure, the Spratly Archipelago is located near vital shipping lanes connecting East Asia with Europe, the Middle East, and Africa, and lies along key energy transport routes, particularly for oil and liquefied natural gas (LNG) from the Middle East through the Malacca Strait to major economies such as Japan and South Korea. Any disruption in this region could have ripple effects on global transportation costs and energy prices.

From a logistics economics perspective, the location of the islands facilitates the development of maritime support services such as fuel supply, logistics resupply, ship repair, and maritime rescue. In the context of rising global logistics costs and supply chain optimization demands, the establishment of intermediate service points along shipping routes can contribute to reducing transit times, operating costs, and supply chain disruption risks.

Besides the flow of goods and energy, the Spratly Archipelago is also located near vital international undersea fiber optic cables. These cables handle the majority of transcontinental data traffic, serving financial activities, e-commerce, and digital services. Ensuring the safety and stability of these "data corridors" is not only of technical importance but also creates significant economic value, opening up the possibility of participating in the global data value chain.

4.2. *Offshore Renewable Energy: Wind Power and Green Hydrogen*

According to the International Energy Agency (IEA) report "Offshore Renewable Energy Outlook 2025," the Spratly Archipelago region is considered a high-potential renewable energy zone, with average wind speeds exceeding 9 m/s, favorable for the development of offshore wind power linked to green hydrogen production. This hydrogen source not only serves local energy needs but also has the potential to provide clean fuel for international ships, contributing to emission reductions in accordance with global climate commitments.

Notably, the advantages of the islands lie not only in their energy exploitation potential but also in their ability to develop large-scale energy storage and conversion systems. Converting wind power into green hydrogen or ammonia overcomes geographical distance limitations, allowing for long-term storage and flexible transportation, gradually forming self-sufficient energy centers at sea.

Against the backdrop of increasingly stringent emission reduction standards from the International Maritime Organization (IMO), developing green hydrogen infrastructure in the Spratly Archipelago could create carbon-neutral refueling stations on international shipping routes. This would not only increase economic value but also contribute to promoting the clean energy transition, while affirming Vietnam's role in sustainable marine economic development and achieving the Net Zero goal.

4.3. *Fisheries economics and marine biology*

The Spratly Archipelago is one of Vietnam's key fishing grounds, characterized by abundant and diverse marine resources, particularly pelagic fish, high-value seafood, and biological resources associated with coral reef ecosystems. However, in the context of declining global fisheries resources and increasing exploitation pressure, the fisheries sector in the Spratly region needs to transition from a natural exploitation model to a sustainable management model, combining rational exploitation with high-tech aquaculture. Offshore aquaculture models, applying automation technology and digital data, can help improve productivity, reduce pressure on the ecosystem, and increase the added value of seafood products.

Furthermore, the marine ecosystem in the islands, especially coral reefs and seagrass beds, has great potential for the development of marine biotechnology. Many marine organisms in this area contain highly valuable bioactive compounds that can be applied in pharmaceuticals, functional foods, and biomaterials. Exploiting these biological resources through research and development (R&D) will contribute to the formation of knowledge-based marine economic sectors, creating significantly higher added value compared to traditional exploitation.

4.4. *Ocean Data Ecosystem*

Amidst the ongoing digital transformation, the Spratly Archipelago is emerging as a space with exceptional potential for developing an Ocean Data Ecosystem. Vietnam has been gradually deploying a network of marine sensors, satellite systems, and big data technologies to collect, process, and analyze

information on the environment, currents, biological resources, and maritime activities in real time.

Notably, the Spratly Archipelago not only serves as a data collection point but also has the potential to become a regional-scale integrated ocean data analysis center. Data obtained from underwater sensor systems, monitoring equipment, and satellites can be used to build climate forecasting models, manage resources, and support decision-making in the marine economy. In a context where data is increasingly becoming a crucial factor in production, mastering and effectively utilizing this data source can create a significant competitive advantage, contributing to improved marine governance and sustainable marine economic development.

Furthermore, the ocean data system in the Spratly Archipelago enables the development of new data-driven economic sectors, such as marine remote sensing, maritime information services, and offshore marine scientific research. The connection between marine data infrastructure and inland economic and urban centers will contribute to the formation of a digital marine economy network, with the archipelago playing a crucial role as a data node.

5. Development orientation of the marine economy in the Spratly Archipelago

Given its strategic location, resource endowment, and technological potential, the Spratly Archipelago can be developed as an integrated maritime economy model with three main pillars.

Firstly, develop offshore maritime logistics and supply chain services, leveraging its proximity to international shipping routes to provide transshipment, refueling, and technical support services.

Secondly, develop offshore renewable energy centers, combining wind power and green hydrogen production, contributing to the energy transition and emissions reduction.

Third, the marine economy should be developed based on knowledge and technology, including ocean data, marine biotechnology, and related digital services.

These strategies should be implemented on the basis of environmental protection, ecosystem conservation, and adaptation to climate change, in order to ensure long-term sustainability.

6. Conclusion

The Spratly Archipelago represents a maritime economic space with significant potential, characterized by strategic location, resource endowment, and strong connectivity to global trade networks. In the context of shifting growth models, the region has the capacity to serve as a new growth pole in Vietnam's maritime economy.

Its development requires an integrated approach that combines economic utilization, technological advancement, and environmental sustainability, grounded in a solid legal and sovereignty framework. This will enable Vietnam to effectively

leverage marine resources while strengthening its position within global value chains./.

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