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The Strategic Importance of the Sea and the Protection of Its Natural Resources: Challenges and Opportunities in the Global Context from the Perspective of the Brazilian Navy

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Abstract

Brazil is a maritime nation by nature: it is the largest nation in the South Atlantic; it possesses the most extensive coastline and topography conductive to establishing suitable ports; 80% of its population resides in coastal areas; 95% of its foreign trade is carried out by sea; it is situated on the eastern salient of South America -specifically at the narrowest point of the Atlantic, closest to Africa (the Natal-Dakar route)- and possesses an immense economic potential (not yet fully quantified) regarding mineral and energy resources within its Exclusive Economic Zone. According to De Castro (1998: 44), "Brazil was born from the sea and in the sea, and its manifest destiny dictates that it must live from the sea; therefore, it cannot turn its back on it." Thus, the most critical mission of the Brazilian navy remains "sea denial", ensuring control and freedom of navigation, and promoting responsible maritime development (Silva & Moura, 2016). The Brazilian economy has a maritime dimension, if we focus on those sectors directly linked to the sea, as well as a range of activities related to the sea, that is, those indirectly influenced by the Atlantic Ocean. These activities generate economic linkages and multiplier effects, such as the marine manufacturing industry, marine biological and fishery resources, and maritime transport (cf. Carvalho, 2018). This text analyses the state policies supporting the tasks of the Brazilian Navy in protecting natural resources of a marine nature.

Keywords: *geopolitics, Maritime Security, natural resources, Navy, Strategic Region*

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1. Introduction

This research is developed in the fields of geopolitics and international security, starting from the strategic importance of the sea for Brazil, our case study, and the role of the navy in protecting its natural resources, focusing on a highly specific topic within maritime security. Brazil possesses vast coastal zones and enormous maritime expanses; therefore, we aim to ascertain whether any discrepancy exists between this wealth, its use and exploitation -on the one hand- and its protection- on the other. This leads us to the following questions: 1) What is the strategic importance of the sea for Brazil? and 2) What means, resources, and legal faculties does the Brazilian republic possess to protect its natural marine wealth? The answers to these questions will help us understand whether a significant gap exists in understanding the barriers, challenges, and factors that have prevented this South American country from optimizing its maritime potential, both in terms of sustainable economic development through the utilization of maritime wealth and regarding its adequate protection, fundamentally tasked to the Brazilian navy. It is worth emphasizing here that we will not analyze the resources, actions, and powers of civil authorities that also intervene in these tasks; rather, we will focus specifically on the Brazilian navy.

We have chosen Brazil as subject of study, because it is the largest economy in Latin America, its coastline is the most extensive in South America, its navy is the most powerful in Latin America, and it possesses enormous maritime wealth. The choice to investigate the strategic importance of the sea for Brazil and the adequate protection of its natural resources is further justified by the growing relevance of this nation on the contemporary international stage. The vast coastal expanses of our case study, Brazil's water wealth, and the considerable magnitude of its Exclusive Economic Zone grant the sea a prominent role across several aspects, ranging from national security to sustainable economic development. Understanding the interconnection among maritime resources, international relations, and defense and resource-protection policies is crucial not only for the progress of States, but also for the contribution of each to global discussions on marine conservation, sustainable development, and international security. Therefore, this field of study offers a valuable opportunity to explore and analyse the

complex challenges and opportunities that the sea presents for Brazil in particular and for Latin American countries in general.

The general objective we pursue with this research is to contribute to the analysis of the strategic importance that seas hold for our case study, how this importance shapes its position on the global stage in this first quarter of the twenty-first century, and with what naval means Brazil protects its natural resources at sea and along its coasts. To this end, we must examine the contribution of coastlines to the national economy and the geopolitical implications of the coastline that distinguish our case. Having done this, we can examine the maritime security policies and strategies adopted by the Brazilian State through its navy to protect its natural resources along the coast and in the Exclusive Economic Zone (EEZ).[1] These interconnected steps form the backbone of this monograph, providing a systematic and robust approach to the research question.

We begin from an understanding of geopolitics as a discipline situated at the intersections of geography and the social sciences, such as history, public administration, political science, and sociology, which studies the relationship between geographic space and political conditions. It is therefore a science that analyzes the geographic-spatial nature of political processes, considering the State as a geographic organism. This means observing the influence that a State´s geographic conditions exert on its domestic and international policy (cf. Meier et al., 2012: 191).

2. Coastlines, the National Economy of Brazil, and Maritime Security

Brazil is the largest country in Latin America. With an area of 8 547 403.5 km², it comprises nearly half (47.3%) of South America. After the Russian Federation, Canada, China, and the United States, Brazil is the fifth-largest country in the world; its east-west extent (4,319.4 km) is nearly equal to its north-south extent (4,394.7 km). In Europe, this corresponds approximately to the distance from Cape North to Gibraltar or from the westernmost tip of Great Britain to the Urals.

We must highlight the importance that ”maritime security” holds for Brazil, which within its broad spectrum, a wide array of topics is grouped: national security and defense (including ”cybersecurity”), ports security and critical maritime infrastructure, security of vessels and transport systems, surveillance of maritime spaces, measures against illegal fishing, anti-terrorism, anti-piracy, and other forms of organized crime (trafficking of weapons, drugs, and people, etc.), protection of the marine and coastal environment and living fishery resources, protection of trade, navigation, and maritime transit, energy and tourism, as well as combating common crime and the looting (on a small or large scale) of natural resources, among others.

In the planning, organization, and implementation of maritime security measures, civil and military institutions, as well as local and national authorities, participate according to the specific operating conditions and structural layout of each State. This is due to the broad range of elements covered by ”maritime security,” as noted above. Our research focuses on the measures applied by the Brazilian State, through its navy, for the protection of its natural resources in seas, oceans, and coasts. Generally, these tasks are assumed in different countries worldwide by the navy or by the corresponding coast guard, under a variety of operational models, administrative affiliations, structures, resources, and mandates.

Brazil does not possess an independent coast guard, unlike other countries such as the United States (U.S. Coast Guard, USCG) or Argentina (Prefectura Naval Argentina, PNA). Consequently, these functions fall under the exclusive responsibility of the Brazilian Navy (Marinha do Brasil, MB). This means that, as part of the armed forces, the MB must fulfill coast guard and maritime authority functions in addition to its military duties. These include, among others: search and rescue; surveillance of jurisdictional waters and the exclusive economic zone; protection of marine resources and offshore oil and gas deposits; maritime domain awareness and fisheries control (https://www.gov.br/defesa/pt-br/assuntos/marinha).[2]

Maritime security, in the sense of ”good order at sea,” as expressed by Geoffrey Till in 2009 (cited in Bruns et al., 2013: 9), encompasses defense against a vast array of threats, such as those directed against a territory, against a State's sphere of influence, or against its interests by another State. This includes, for example, securing the free transit of goods and maritime transport in crisis regions, as well as the capacity to project power. Therefore, this complex domain of state prevention exists within a field of tension between international agreements, norms, and “*Realpolitik*”.[3] On the other hand, the concept of maritime security in a broader sense encompasses, beyond military expansion, the dimensions of political, economic, social, and ecological security. This implies that security risks grow not only through the action or omission of States, but also through the activities of private actors, such as terrorists and organized crime. All of this significantly heightens the already existing transnationality and, consequently, the degree of difficulty that these challenges represent in seas and oceans (Bruns et al., 2013: 9).

Numerous aspects of maritime security are handled by each country's navy or war fleet and by the coast guard or its functional equivalent (”maritime police,” ”naval prefecture,” etc.). The distribution of tasks and powers depends on the administrative, institutional, political, and military architecture of each specific State. There are even numerous countries that lack a coast guard, so other entities assume its functions. On many occasions, as in Brazil, coast guard tasks are carried out by the national navy, thereby merging both functions: the military defense duties (inherent to a navy) and the law-enforcement duties in national waters (inherent to a coast guard) (Sánchez de la Barquera, 2024: 249–250).[4]

[1]The maritime zones recognized under international law are: the “territorial sea,” which extends 12 nautical miles (nm) from the baseline; the respective State enjoys sovereign rights here, including over the corresponding airspace; other States, however, enjoy the right of “innocent passage” through this territorial sea. Next is the 12 nm “contiguous zone,” which in turn gives way to the “Exclusive Economic Zone” (200 nm from the baseline), where the respective State has sovereignty over the exploration and exploitation of natural resources of all kinds (see Sánchez de la Barquera 2024: 42 ff.).

[2]In the case of Argentina, a neighboring country to our case study and very similar in terms of its economic and cultural characteristics, there is a type of coast guard known as the “Prefectura Naval Argentina” (PNA). It is a federal agency under the Ministry of Security, responsible for tasks such as border protection, search and rescue at sea, and the protection of natural resources within the EEZ. This agency, the functional equivalent of a coast guard, has gained international recognition primarily for its determined fight against illegal fishing in the South Atlantic, repeatedly intercepting fishing vessels from foreign fleets that are illegally operating in waters under Argentine national jurisdiction. (vid. https://www.argentina.gob.ar/prefecturanaval).

[3]The term “*Realpolitik*” emerged in the 19th century, when European states were primarily concerned with asserting their political interests and power. In Realpolitik, political action must be based primarily on given facts; therefore, it is less important to follow certain ideas or theoretical considerations, values, principles, or abstract programs, but rather to ask what is actually possible and what is not. The focus was on achieving a goal rather than on an idea or an ideal. That is why it is also referred to as “political pragmatism” (see Schneider / Toyka-Seid 2025).

[4]Coast guard duties may be carried out by a single authority (as is the case in the United States of America, for example) or by a group of them (as is the case in Germany), generally at the national level, which must cover a range of law enforcement activities such as maritime traffic control, customs matters, coordination of search and rescue operations, safety of shipping lanes, monitoring of fishing

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Latin America is a region in which 23 of its 33 constituent countries possess more maritime territory than land area; it contains 47 of the world's 258 marine ecoregions, and more than 27% of its population resides in coastal areas, meaning that approximately 2.3 million people are directly or indirectly involved in fishing activities (Government of Mexico, 2021: 26). Nevertheless, no seaport in Latin America ranks among the top 30 ports in the world (cf. El Mercantil, 2024; iContainers, 2024). Countries in the region do not possess a major merchant fleet, either as owners or as flag states, with the sole exception of Panama, which is the world's leading flag of registration by number of vessels.[5] By tonnage (gross tonnage), the leading nation worldwide is Liberia, followed by Panama.[6] If we review the global merchant fleet by owner nationality, Greece controls the largest fleet in terms of deadweight tonnage (ANAVE, 2024: 16).[7] Brazil, the Latin American titan, does not even appear among the top 10 shipowning nations internationally, despite the vast extent of its coasts, maritime surface area, and the rich resources contained within its waters. However, it is the largest shipowning country in South America, ranking 29th worldwide with 382 vessels representing 14.28 million deadweight tons. This accounts for only 1.45% of the global fleet (UNCTAD, 2023).

It is necessary to point out that when we speak of the merchant navy, we refer not only to the existence of a given number of vessels; we must also consider that an enormous volume of activities with considerable economic, social, cultural, and technological weight is generated around them: shipyards and suppliers of various types, shipping agencies, crew training and recruitment, nautical schools, insurance and provisioning companies, certification bodies, cultural expressions linked to the sea, critical infrastructure, and more. This broad array of activities, enterprises, facilities, and institutions creates direct and indirect qualified jobs, promotes scientific and technological research as well as its practical application, and contributes to the development of the areas in which they operate (cf. Merodio, 2022).

As indicated above, Brazil is the largest economy in Latin America and the Caribbean, followed by Mexico. According to 2024 data, Brazil's Gross Domestic Product (GDP) reached USD 2,188,042,000,000 (Statista, 2024). However, in terms of per capita income, Panama, Chile, Uruguay, Costa Rica, the Dominican Republic, and Argentina, in that order, rank above Mexico and Brazil. This means that although these two Latin American giants have the largest economies on the subcontinent in absolute terms, the size of their respective populations and the magnitude of their socioeconomic inequalities are unfavorable when evaluating income per inhabitant (Muñoz, 2024).

3. Coastlines and Geopolitics

Brazil borders ten countries: to the north, the French overseas department of French Guiana, as well as Suriname, Guyana, Venezuela, and Colombia; to the south, Uruguay and Argentina; and to the west, Paraguay, Bolivia, and Peru. Ecuador and Chile are the only South American countries that do not share a land border with Brazil. The Brazilian coastline along the Atlantic Ocean measures 7,367 km and is the longest among South American nations. Brazil shares a 15,700 km border with its immediate neighbors.[8] The Brazilian coastline is the longest in South America and the second-longest in Latin America, surpassed only by Mexico's coastline (approx. 11,200 km or slightly more, depending on measurement methodology or whether lagoons and islands are included).[9] Brazil also possesses the longest Atlantic coastline in the world.[10]

In the South Atlantic Ocean (SA), which Brazil regards as a sort of *Mare Nostrum*, the *Marinha* is undoubtedly the strongest naval force in the region, whether considering the American littoral states (Brazil, Uruguay, and Argentina, all peaceful and stable) or the African ones (Senegal, Guinea, Guinea-Bissau, Liberia, Côte d'Ivoire, and Sierra Leone, with fewer economic resources and a degree of political instability). Among all these countries, Brazil has demonstrated the greatest desire and capacity to exercise leadership in terms of maritime projection, while also being best positioned to enhance maritime security in riverine waters (Sánchez de la Barquera, 2021; Vázquez, 2023).

The South Atlantic connects Brazil with Africa and Antarctica, explaining its close naval cooperation with Angola, Cabo Verde, Namibia, and São Tomé and Príncipe. Additionally, several of these nations belong to the Community of Portuguese Language Countries (CPLP). Consequently, the proximity between Brazil and West African countries carries significant geopolitical weight of a strategic nature, emphasizing joint defense policies, development cooperation, and shared historical and cultural bonds.

activities, combating both organized and common crime, prevention of crimes at sea, environmental protection, etc. The physical area in which a coast guard has the authority to intervene depends on each nation's legal framework, although we generally assume it includes coastlines and shorelines, territorial waters, and the EEZ. To carry out its duties, a coast guard requires various types of vessels, fixed-wing and rotary-wing aircraft, as well as land-based support vehicles. Some coast guards are civilian in nature, while others are attached to their respective navies; in some cases, their administrative affiliation changes in times of war, shifting from civilian to military authority. To gain a better understanding of the nature, powers, and duties of some of the different models of coast guards around the world, we recommend: Sánchez de la Barquera 2024: 249-264.

[5]Ships, like people, have their own nationality, as indicated by the national flag or stern flag they fly. This means that the laws of the state represented by that flag govern on board the vessel. A "Ship Registry" records the respective nationality, so it lists vessels and platforms according to their country of origin and the activities they perform, provided they are at least two meters and fifty centimeters in length (the vessel's length). In Spain, for example, a vessel can simply be registered, but it cannot leave Spanish jurisdictional waters; if, on the other hand, it is registered, it is entered in the Spanish Ship Registry and may thereby sail in international waters or the waters of other countries. In Argentina, to cite another example, the procedure is carried out through the National Ship Registry (RNBU) of the Argentine Naval Prefecture. Thus, while just over 100 merchant ships are registered in Spain, in Panama, due to the tax incentives it offers, there are more than 8,000, representing 7.8% of the world's merchant fleet. That is why, as we noted above, this Latin American country is the world leader in flagging and registering merchant ships.

[6]According to Fernández (2014: 13), tonnage defines a ship's volume capacity. There are two types of tonnage: gross tonnage, which measures the ship's total volume, and net tonnage, which measures the volume of the cargo and passenger spaces, that is, all spaces suitable for the ship's operation and use.

[7]A shipowner may or may not be the owner and/or captain of a vessel. What distinguishes a shipowner are their responsibilities: they must equip the vessel (navigation instruments, technological support, food, etc.); they must hire the captain and crew; they also manage clients, contracts, and rates; ensures compliance with legal obligations in every country where the vessel docks; and must keep the vessel operational and safe (Grupo Moldtrans 2022). As for deadweight tonnage (DWT), it is the total weight a ship can carry, expressed in metric tons, that is, the weight of the cargo plus fuel, fresh water, and ballast water, general supplies, and the crew and passengers. It is known as T.P.M. (Deadweight Tons). We can also say that it is the difference between the weight of the ship when completely empty and when fully loaded and fully provisioned. Deadweight tonnage is essential in logistics, as it determines a ship's cargo capacity; it helps carriers calculate how much cargo can be transported efficiently, ensuring that the ship operates within safe limits (see Super International Shipping 2023; Reyes 2007).

[8]Deutsch-Brasilianische Gesellschaft: https://deutschland-brasilien.org/veranstaltungen/sprachkurse/ueber-brasilien/geografie/

[9]The continent's longest coastlines are in North America, in the following order from longest to shortest: Canada, the United States, and Mexico.

[10]Although they are often used interchangeably, "coast" and "littoral" are not synonyms: the coast is a portion of land bordering the sea, while the littoral is the broader transitional region or zone that encompasses both the land's edge and the area near the seashore. In short, we can say that the littoral is the entire system, while the coast is the boundary of the mainland within that system. (vid. https://education.nationalgeographic.org/resource/coast/).

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Although Brazil is a country with a consciousness and history closer to the sea than what is found in other Latin American nations, a certain ”sea blindness” remains observable among the general population, a lack of awareness regarding the strategic importance of the sea for the South American colossus. Therefore, the ”Blue Amazon” project, analyzed below, also aims to alter this situation, which is perceived as a strategic vulnerability (cf. Sánchez de la Barquera & De Oliveira, 2023).

4. The South Atlantic as a Strategic Region

The term ”strategic importance” describes the crucial character that a decision, measure, project, or resource holds for the long-term success and survival of an organization, State, institution, enterprise, or initiative.[11] Unlike day-to-day operational activities, this concept focuses on the overall, long-term vision. The term encompasses several key dimensions: 1) Long-term orientation: which holds strategic importance, looks toward the future and is designed with a time horizon dependent on the character, nature, and functions of an institution. In a corporate setting, this typically spans three to ten years to secure vital goals, whereas for national defense tasks and objectives, horizons may extend up to 30 or 50 years. 2) Relative advantage linked to core competencies: unique action proposals in institutional or corporate activities, and essential resources to stand out from competitors over the long run. 3) Origin: the term derives from the Greek word *strategos*, meaning military leadership; while tactics involve executing specific actions, strategy determines the overall direction. Typical examples of strategic matters include investments in new markets, securing a State's influence in geostrategic regions, patents, mergers, or establishing key alliances.

Regarding the strategic importance of oceans, it lies primarily in their role as engines of the global economy, climate regulators, and central arenas of geopolitical power. Since oceans cover approximately 71% of the Earth's surface, they are essential to global economics and trade: they constitute the main transport arteries, as roughly 90% of global freight transport travels by sea. Hence the existence of critical chokepoints, narrow passages such as the Suez Canal, the Strait of Hormuz, the Panama Canal, or the Strait of Malacca, which act as bottlenecks essential to international commerce, better known as *“Chokepoints”*. Their control or blockage can severely disrupt global supply chains, energy prices, and numerous other commodities. For international geopolitics and security, seas and oceans represent the ideal arena for power projection: aircraft carrier strike groups and submarines enable States to project global influence. Regions such as the South China Sea, the Indian Ocean, the Baltic Sea, and the Arctic are focal points of modern power politics.

Furthermore, undersea infrastructure is of paramount importance for information exchange, as more than 95% of global data traffic travels through intercontinental submarine cables; protecting them is vital for national security. Another element underpinning the strategic importance of seas is the existence of diverse resources: beyond oil and natural gas, seabed mineral resources (deep-sea mining) are acquiring growing economic and technological significance. Oceans are a vital source of protein for billions of people and host modern offshore wind farms for energy generation. Finally, one must not overlook the climate and ecological importance of seas: through phytoplankton, oceans produce more than half of the world's oxygen. They also act as massive carbon sinks and climate buffers, absorbing the majority of heat generated by climate change as well as a large proportion of human-induced CO_2 emissions (cf. Sánchez de la Barquera, 2024: Ch. I, passim).

The South Atlantic is a strategic region for Brazil. A ”strategic region” can be defined as a geographic area of central and long-term importance for the overarching political, economic, or military goals of a State or an alliance of States. Whichever entity controls or influences such a region secures or seeks to secure crucial advantages in trade, security, and power. Its importance can be defined across several contexts: 1) Geopolitical and military: areas of great importance for global security, such as the Indo-Pacific or the South Atlantic for Brazil. Control over these regions secures transport routes and commercial corridors, or serves as a deterrent. 2) Economy and resources: regions that serve as key supply chains, provide access to critical raw materials (such as energy, food, or minerals), or act as major sales markets and production hubs. 3) Spatial planning and development: at the national level, regions are classified as ”strategic” when specifically strengthened through infrastructure projects, subsidies, or geographical marketing to enhance regional or global competitiveness.[12]

Montironi (2024: 33) understands ”strategic environment” as any geographic space in which a State possesses the capability to immediately exercise political, economic, and military influence over other countries sharing the region. Consequently, foreign policy and defense policy seek to coordinate efforts to increase their weight within this environment in order to advance their integration into international arenas.

The strategic maritime areas of highest importance for the deployment of Brazilian naval power, in descending order of priority, are as follows (cf. Pesce, 2010: 74):

- **Vital Area:** encompasses the territorial sea, the contiguous zone, the EEZ, and the continental shelf (CS), extending 200 to 350 nautical miles from the baseline;
- **Primary Area:** encompasses the South Atlantic, bounded by the 16th parallel North, the western coast of Africa, Antarctica, the eastern coast of South America, and the east of the Lesser Antilles, excluding the Caribbean Sea;
- **Secondary Area:** encompasses the Caribbean Sea and the South Pacific, bounded by the Beagle Channel, the coast of South America, the 85th meridian West, and the parallel of the Panama Canal;
- **Other areas of the globe:** all remaining oceanic and maritime domains worldwide.

Brazilian naval power is focused on controlling maritime spaces; given its size and capabilities, the Brazilian Navy is already classified as a ”blue-water navy” (Sánchez de la Barquera, 2021: 593 ff.; Sánchez de la Barquera, 2024: 40 ff.). Guidelines in this regard can be found in the 2012 National Defense Policy (PND), embedded in the Defense Ministry's ”White Paper” of that same year (Brazil, 2012: passim). The focus is placed on the centrality and strategic importance of the South Atlantic as a scenario and object of interest for national defense, while simultaneously considering it a maneuver platform to achieve greater relevance in international

[11] See: https://www.planview.com/de/resources/articles/understanding-the-importance-of-strategic-alignment/

[12] Vid.: “Strategisch wichtige Region”, Federal Ministry of Defense (Germany, March 13, 2024), available at https://www.bmvg.de/de/themen/strategisch-wichtige-region-5087890.

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decision-making processes. This implies that the South Atlantic serves as a central hub of Brazil's strategic environment in its pursuit of international leadership. Hence, the objectives pursued by the PND within our scope of interest include:

- Describing the geopolitical space comprising the South Atlantic region;
- Analyzing the concept of the "Blue Amazon" (see below) and its importance for Brazil;
- Describing the Navy's strategic projects; and
- Analyzing representative instances of Brazilian naval diplomacy regarding countries in its strategic environment.

National objectives can be defined as those ends that a nation seeks to achieve based on identifying its needs, interests, and aspirations. Fundamental objectives provide the overarching vision or horizon to follow, aimed at conquering and preserving the supreme interests of the nation and its identity. State objectives are long-term in nature, geared toward satisfying highly relevant needs and interests to fulfill fundamental objectives. Government objectives are medium-term and influenced by political and economic contingencies that impose constraints on achieving State goals. The vital interest pursued by national security is the survival of the State as a sovereign, independent political unit. Acquiring and preserving power remains the immediate objective in both domestic and foreign policy.

The concept of "national interest" is fundamental to political analysis, both domestic and international, and consequently to the military and naval domains. In public policy research, this term helps capture and communicate the breadth and complexity of political reality. In international relations, "... (if) power is not exercised blindly, but directed toward a goal, the content in international policy analysis is generally understood as 'Interest.' The policy of a nation-state is attributed with pursuing the 'national interest'" (Albrecht, 1992, cited in Massing, 2006: 742). Numerous viewpoints surround the term "national interest"; indeed, some deny its analytical utility. However, in practical politics, it is widely employed, and in state defense and naval policies, the concept is fundamental.

For Meier et al. (2012: 224), national interest represents the set of core ideas formulated by a society and/or the government of a State or community of States regarding objective and ideal relationships and values beneficial to their people. Attempts to defend or impose these interests internationally can lead to conflict when they clash with the interests of other States and when neither the willingness to compromise and negotiate nor the goodwill to relinquish certain aspects of one's own national interest exists. Vargas distinguishes between two types of national interests: vital and strategic. Vital interests are those that must be protected and defended against any danger threatening the nation's survival; their defense is non-negotiable and requires subordinating any other interest, as the core constituent elements of the State are at stake: territory (including land and sea accesses), population, constitutional order, sovereignty, and independence. Strategic interests derive from the country's geographic location and maritime condition; their protection contributes to the defense of vital interests (cited in Uribe-Cáceres et al., 2017: 18; cf. Sánchez de la Barquera, 2024: 69).

In the realm where naval power is exercised (the waters of seas, oceans, and rivers), we can assert that only cultures, peoples, and countries that have developed or actively pursue maritime activities can likewise develop maritime interests, as they depend to varying degrees on the resources represented by oceans: fisheries, trade, tourism, security, etc. Thus, "maritime interests" can be defined as the entire set of political, economic, cultural, social, and military benefits that a nation derives from all activities related to the use of the sea (coastlines, sea floors, jurisdictional waters, and high seas) undertaken by both the State and private entities to utilize its facilities, conditions, and resources. Comprehending these interests in their full breadth requires a "maritime consciousness," particularly among decision-makers across all domains (political, business, social, academic, military, etc.). Maritime consciousness is the collective knowledge regarding factors associated with the sea and its proximity, its nature, and possibilities; it provides the intellectual conviction and will to utilize and protect the seas (cf. Armada de Chile, 2009: 36; Sánchez de la Barquera, 2024: 68 ff.).

The South Atlantic is not merely a body of water adjacent to Brazil, but the geometric center of its strategic environment and a vital asset for its survival and projection as a power (Montironi, 2024: 33). Its importance rests upon four fundamental pillars, termed by Brazil as the "qualities" of the South Atlantic (according to Montironi, 2024: 17, 41, 55–56):

1. **Principal Foreign Trade Route:** Over 95% of Brazilian foreign trade (exports and imports) transits through its waters. It is the country's "logistical highway."
2. **Source of Food:** The sea is a critical source of living fishery resources and marine biodiversity, contributing directly to national food security.
3. **Source of Energy:** It houses the vast offshore oil and natural gas reserves of the "Pre-salt" (Pré-sal) layer, which in July 2023 accounted for 97.6% of oil and 83.2% of natural gas produced in Brazil.[13]
4. **Source of Mineral Resources:** The seabed contains polymetallic nodules (cobalt, nickel, manganese, phosphate, platinum, and rare earth elements), particularly in the Rio Grande Rise, a 900,000 km² formation of incalculable strategic value.

Furthermore, the sea is vital for national security. The 2012 PND establishes that Brazil's security is directly tied to the stability of its surrounding region, with the South Atlantic being decisive for that stability. It represents an unavoidable stage for defense, deterrence, and power projection (Montironi, 2024: 9).

5. The Brazilian Navy and Maritime Security Policies and Strategies

Naval defense and the protection of marine resources fall under the responsibility of the Brazilian Navy (MB), a national, permanent, and regular armed institution based on hierarchy and discipline, operating under the supreme authority of the President of the Republic (Brazil, 2012: 56). The MB is the oldest branch of the armed forces in Brazil, an exception compared to most nations, where the army is typically the oldest service. The MB was founded in 1822, the Army (Exército Brasileiro, EB) in 1824, and the Air

[13] The "pre-salt" is an ultra-deep geological zone, located beneath a thick layer of salt, where massive reserves of oil and natural gas are found. These formations, located primarily off the coasts of Brazil and West Africa, contain extremely high-quality crude oil and represent one of the world's largest energy reserves (vid.: https://petrobras.com.br/en/pre-sal#500m).

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Force (Força Aérea Brasileira, FAB) in 1941. Currently, Brazil's total military personnel numbers 344,103, distributed as follows: 205,119 in the Army, 71,454 in the Navy, and 67,530 in the Air Force (RESDAL, 2024: Ch. 4). Brazil is the strongest military power in Latin America.

The core tasks of Brazilian naval power are as follows (according to Montironi, 2024: 100–104; Brazil, 2012: 100; Silva & Moura, 2016):

1. **Sea Denial:** Preventing an adversary from utilizing the sea, primarily through a robust submarine force, including nuclear-powered submarines;

2. **Sea Control:** Ensuring the use of a maritime area for one's own purposes, protecting sea lines of communication, securing the exploitation of natural resources, and establishing conditions for power projection;

3. **Power Projection Ashore:** Using the sea as a platform to influence events on land (capacity to conduct amphibious operations, naval strikes, and logistical support);

4. **Contribution to Deterrence:** Discouraging potential aggressors through credible military capability, avoiding the necessity of war.

Of these points, Item 2 is especially pertinent, as it addresses the protection of natural resources to enable their sustainable exploitation. This law-enforcement role of the MB aligns with the fact that Brazil lacks an independent coast guard or maritime police force; hence, the MB assumes responsibility for environmental protection. This environmental mandate has had formal legal backing since 2002, when relevant tasks were assigned to the Directorate of Ports and Coasts (Montironi, 2024: 108). Regarding natural resource protection, the MB, in collaboration with other government agencies, developed the Blue Amazon Management System (Sistema de Gerenciamento da Amazônia Azul, SisGAAz) as a key strategic project.[14]

The vast dimensions and rich nature of the Brazilian continental shelf mean that these jurisdictional waters represent top-tier economic and ecological potential, holding vital strategic importance for the Brazilian State. The MB is charged with the protection and security of the "Blue Amazon," defined as the region of the South Atlantic over which Brazil holds territorial rights and prerogatives for exploitation, protection, and control. It encompasses Brazil's jurisdictional waters, including the ocean surface, the water column, the seabed, and the subsoil extending from the baseline to the outer limits of the Brazilian continental shelf (Brazil, 2012; Brazil, 2014). Analogous to the "Green Amazon," the Blue (maritime) Amazon is characterized by its vast dimensions, immense wealth, and ecological vulnerability.

Thus, the Green Amazon and the Blue Amazon represent the two strategic pillars of Brazil's sovereignty and wealth: one safeguards the planet's largest terrestrial ecosystem and biodiversity, while the other protects an immense maritime coastline and its oceanic resources.

- **Green Amazon (Amazon Rainforest):** The continental heartland and largest tropical rainforest on Earth, covering approximately 5.2 million km². Its global climate and environmental regulation function is irreplaceable, housing the world's largest freshwater reserves and biodiversity.

- **Blue Amazon (Territorial Sea / EEZ):** A term coined by the MB to define its EEZ and continental shelf, covering over 5.7 million km² of ocean (total area varies depending on source criteria). It is vital to the economy, yielding 95% of crude oil, carrying nearly all foreign trade, and hosting invaluable fishery and mineral resources.

The MB defines the Blue Amazon as the region of the AS over which Brazil has territorial rights and other prerogatives of exploitation and control; it corresponds to jurisdictional waters and comprises the sea surface, the waters overlying the seabed, the seabed, and the subsoil within the portion of the Atlantic Ocean extending from the coast to the outer limits of the Brazilian continental shelf (see Brazil 2012; Brazil 2014).

Strategies and key projects to achieve these goals include (following Montironi, 2024: 114–116 ff.):

- **Navy Nuclear Program (PNM):** The strategic plan to build Brazil's first nuclear-powered attack submarine (SN-BR, named Álvaro Alberto), currently under construction with an expected launch around 2033.[15] It will be nuclear-powered but equipped with conventional armaments, in other words, it will not carry nuclear weapons (i.e., non-nuclear weaponry).

- **Construction of the Core Naval Power:** Includes PROSUB (4 conventional Scorpène-class submarines, the last delivered in 2024), the Tamandaré-class frigates (4 escort vessels, first commissioning in 2026), and the PROSUPER program (5 ocean patrol vessels, 5 escorts, and 1 logistical support vessel).

- **Blue Amazon Management System (SisGAAz):** A multi-billion-dollar command and control network fusing radar, satellite, and vessel identification data to monitor jurisdictional waters in real time and support decision-making.[16]

- **Creation of the 2nd Fleet and 2nd Marine Infantry Force:** Designed to strategically safeguard the mouth of the Amazon River, near the Alcântara Space Center (*Centro de Lançamento de Alcântara*), and offset low population density in that vital area.

Brazil utilizes the sea in three fundamental ways to advance its national interests:

- **As a "Territorial Multiplier":** The "Blue Amazon" represents a sovereign addition to Brazil's continental territory (8.5 million km²) (Montironi, 2024: 33; Brazil, 2012: 47).

- **As a "Shield and Deterrent":** The capability to deny sea use to potential adversaries (especially through nuclear submarines) serves as a strategic insurance policy. The MB maintains that defense must be "proactive," intercepting threats "beyond the outer limits of Brazilian maritime space" (Montironi, 2024: 96).

[14]Vid. https://ezute.org.br/es/sistema-de-gerenciamento-da-amazonia-azul-sisgaaz/; Brasil 2012: 73; Montironi 2024: 108).

[15]For more information on the technical characteristics and background of this program, interested readers may consult Sánchez de la Barquera 2021, Silva / Moura 2016, as well as https://www.unav.edu/web/global-affairs/brasil-comienza-la-construccion-de-su-submarino-de-propulsion-nuclear

[16]This system will integrate a network of land- and sea-based sensors, command and control centers, and aerial and environmental monitoring to provide the capability to monitor strategic mobility in these areas and respond in the event of a threat, emergency, environmental disaster, aggression, or illegal acts. Technical services are provided by the "Fundación Ezute" which acts as a consultant to the Brazilian Navy; these services facilitate the preparation and dissemination of a public request for proposals (RFP) for an open-architecture defense system, defining the necessary missions and capabilities, with participants in the process responsible for proposing technological solutions. (vid. https://ezute.org.br/es/sistema-de-gerenciamento-da-amazonia-azul-sisgaaz/).

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- **As an "Avenue of Diplomacy":** "Naval diplomacy" (Booth, 1975) is a core instrument.[17] Warships act as "floating ambassadors" that project influence and political power without firing a shot; their versatility, mobility, symbolic value, and gradualism allow them to show the flag, conduct port visits, execute combined exercises, undertake peacekeeping missions, and deliver humanitarian aid (cf. Montironi, 2024: 24–26).

It is essential for Brazil to maintain maritime security in its waters to guarantee its Sea Lines of Communication (SLOCs), the legal exploitation of natural resources, and the efficient operation of its ports and maritime infrastructure. The MB is fully engaged in all these dimensions.

Through its navy, Brazil exercises what can be termed "hybrid" military power, according to the White Paper (Brazil, 2012: 33): on one hand, the MB develops first-tier military capabilities backed by its submarine fleet (including future nuclear submarines), modern Tamandaré-class frigates, and the helicopter carrier NAM Atlântico (formerly HMS Ocean, a Landing Platform Helicopter acquired from the United Kingdom in 2018).[18] On the other hand, Brazil actively promotes regional cooperation through the South Atlantic Peace and Cooperation Zone (ZPACAS, created on Brazil's initiative in 1986), the South American Defense Council (CDS) of UNASUR, and combined naval exercises such as ATLASUR or FRATERNO with Argentina, South Africa, and India.

Consequently, the MB is the most formidable navy in Latin America, the only one with the capability to build submarines (including nuclear-powered ones) and operating a helicopter carrier. It also constructs other surface combatants, such as frigates and corvettes.[19] Furthermore, Brazil not only maintains the largest and best-equipped armed forces in Latin America, but also leads the region in defense expenditure (cf. RESDAL, 2024: 110 ff.). Additionally, Brazil is the sole Latin American participant in the Combined Maritime Forces (CMF), has commanded the Maritime Task Force of UNIFIL in Lebanon, and leads counter-piracy exercises in the Gulf of Guinea, demonstrating that its naval power extends beyond its immediate neighborhood into a recognized "medium naval power" in the South Atlantic.

Thus, Brazil has internalized a foundational lesson of classical geopolitics (following Mahan and Corbett; cf. Sánchez de la Barquera, 2024: 67 ff.): national power is inextricably linked to maritime power. However, Brazil does not merely copy historical models; it adapts theory to its identity as a "peaceful power" with aspirations extending beyond its borders.

Deterrence is central to the 2012 PND; indeed, it functions as a blueprint for deterrence. Brazil does not seek an offensive navy, but rather one capable of preventing aggression or incursions by foreign States or non-state actors. Prioritizing "sea denial" over sea control or power projection is telling: it first ensures no adversary can approach its vital ports and installations before projecting power if required. This reflects defensive yet highly effective strategic thinking. The Navy Nuclear Program (PROSUB) represents the apex of this deterrence strategy, as a nuclear submarine is the ultimate expression of sea denial: operating stealthily for months thousands of kilometers from the coast, deterring any major power from attempting a blockade or hostile entry into the "Blue Amazon" and the South Atlantic.

This structure creates a strategic "triad" composed of monitoring, mobility, and presence. Monitoring is conducted by SisGAAz, which detects threats early; mobility relies on naval vessels and aircraft; and presence, maintained through naval bases, patrols, and military exercises, demonstrates response readiness. Nevertheless, official documents acknowledge remaining vulnerabilities: despite this strategy, the heavy concentration of population and economic output (GDP) along the coastline constitutes a structural weakness. A military or terrorist attack on port facilities or offshore oil platforms would inflict severe damage on the nation.

The MB is recognized as a "blue-water navy," with growing capabilities for power projection into the South Atlantic and South American river systems (cf. Sánchez de la Barquera, 2021: 593; Vázquez, 2023).[20] The 2018 acquisition of the amphibious assault ship NAM Atlântico, with its capacity to operate diverse helicopters and drones, enhances not only surveillance in territorial waters but also humanitarian operations and military power projection. These capabilities are further augmented by the commissioning of modern surface combatants and submarines.

Furthermore, the MB does not confine its scope to the ocean; it plays a critical role in riverine operations across Brazil's dense hydrological network, which includes the Amazon River, the world's largest by discharge, exceeding the combined volume of the next five largest rivers. With over 1,000 rivers, Brazil holds the world's largest freshwater reserve and hydrological potential (Aquae Fundación, 2021).

The MB's role in this complex river system involves not only guarding borders against external threats, but also combating internal organized crime, notably drug trafficking syndicates and illegal resource extraction groups (poachers, illegal loggers, and wildcat miners).

To counter these illicit activities, regional navies conduct joint exercises, recognizing resource protection as a shared transnational imperative. Annually, Brazil, Colombia, and Peru conduct the "Bracolper" riverine exercise (named after the three participant nations). Its core objective is strengthening trilateral naval ties to combat drug trafficking, fauna/flora smuggling, and illegal mining in the shared Amazon basin. The focus lies in enhancing interoperability, technical exchange, patrolling techniques, and emergency response capabilities. In 2025, these manoeuvres took place in late July, symbolizing ongoing commitment to peace and security in a vital strategic area.[21]

[17] According to Ken Booth's theory (2015: passim), naval diplomacy is one of the three fundamental roles of naval power: military defense, law enforcement (coast guard), and naval diplomacy (the exercise of political influence).

[18] In Brazil, NAM stands for "Navío-Aeródromo Multipropósito" (Amphibious Assault Ship or Multipurpose Aircraft Carrier). Its significance and primary importance to the Brazilian Navy stem from the fact that it is the flagship and the largest and most powerful warship in Latin America. It is 203 meters long and has the capacity to carry up to 18 helicopters and 800 marines. This ship is vital for the protection of the "Blue Amazon" and is used for defense, amphibious assault, and humanitarian aid missions.

[19] The Latin American countries with proven capabilities to build certain types of warships (frigates, corvettes, patrol vessels of various ranges, and auxiliary ships) to meet their maritime aspirations and needs are: Brazil, Chile, Colombia, Peru, and Mexico. But let us emphasize once again that the only country with the capability to build submarines is Brazil.

[20] A "blue-water navy" is a naval force capable of operating on a global scale, or at least far from its own shores, primarily in the deep waters of the open oceans. While definitions of exactly what constitutes such a force vary, it requires the ability to exercise control of the seas over long distances. This term contrasts with the concepts of a "brown-water navy" (which operates in coastal waters and areas near the coast) and a "green-water navy" (active in areas near the coast and the open oceans). For a more detailed explanation, see Sánchez de la Barquera 2024: 40 ff. It is important to note that many sources, such as "Global Fire Power 2025," consider the Colombian Navy to be superior to the Brazilian Navy. These differences in assessment are based on the various criteria used, such as the number of vessels, firepower, the age of the ships, the presence or absence of submarines and helicopter carriers, etc.

[21] For more details on these tri-national riverine exercises, which were conducted in Peru that year, vid. https://www.infobae.com/peru/2025/07/01/personal-militar-extranjero-ingresara-con-armamento-de-guerra-al-territorio-de-peru-detalles-de-las-resoluciones/. For the 2026 edition, senior naval officials from the three countries met in Bogotá in April of this year for the Final Planning Conference (FPC), reaffirming their commitment to regional security (vid.: https:

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Similarly, the "Acrux" military exercise is conducted to practice riverine traffic control, joint day/night contingency responses, anti-trafficking tactics, and riverine combat operations to protect member states' national interests.[22]

Brazil's naval strategy constitutes an original synthesis, combining classical and modern theoretical concepts tailored to its geopolitical and cultural reality:

- **Classical Concepts:** From Alfred Thayer Mahan, it adopts the principle that "control of the sea implies a predominant influence in the world." From Julian Corbett, it adopts the view that the sea's value lies in its function as a line of communication, and that command of the sea is relative rather than absolute (cf. Montironi, 2024: 12–15);

- **Modern Concepts:** From Geoffrey Till and Ken Booth, it adapts "maritime power" as an integrated matrix of national resources and capabilities (cf. Montironi, 2024: 16, 22).

Distinctive and Original Features of Brazil's Strategy:

- **The "Blue Amazon" Concept:** Conceived by the Navy Commander in 2004, it equates the strategic weight of maritime domains (approx. 4.5 to 5.7 million km^2) to the Green Amazon, instilling public and political awareness of its strategic value, a conceptual innovation unique to Brazil (cf. Sánchez de la Barquera & De Oliveira, 2023);

- **Prioritizing "Sea Denial":** Whereas classical theorists (Mahan y Corbett) emphasized command and projection, Brazil prioritizes denying enemy sea use before projecting power. This reflects a defensive, deterrent posture suited to a peaceful power with vital assets to safeguard (Silva & Moura, 2016);

- **The "Monitoring – Mobility – Presence" Triad:** Brazil has developed it to address its specific challenges: A tailored doctrine designed for continental distances, an extensive coastline, and remote maritime frontiers. It is an original solution to a unique geographical problem (Montironi, 2024: 66);

- **Integration with CPLP Nations:** Close cooperation with Angola, Namibia, Cabo Verde, and São Tomé and Príncipe (vessel donations, training, naval missions) represents a soft power strategy rooted in linguistic, historical, and cultural ties, not only in military capabilities (Montironi, 2024: 135–137);

- **Focus on the Rio Grande Rise:** Claiming this seabed geological formation before the UN Commission on the Limits of the Continental Shelf (CLCS) and the International Seabed Authority (ISA) exemplifies a masterstroke of international law to expand sovereign rights over deep-sea mineral wealth (Montironi, 2024: 56–57).

Thus, Brazilian strategy is far from being a mere copy; rather, it represents a creative adaptation of classical theories to its specific reality, introducing original innovations that reflect its history, geography, culture, needs, and strategic aspirations.

6. Challenges in Protecting Marine Resources

According to current operational evaluations, the MB possesses the capability to deny foreign navies access to its national waters and engage in combat within its EEZ if required. The Navy (*La Marinha*) can protect approximately 70% of maritime resources against lawbreakers and defend approximately 50% of these resources in the event of an attack by a foreign State (cf. Cuervo & Moloeznik, 2017: 306–307; Sánchez de la Barquera, 2021: 593).

Safeguarding the vast "Blue Amazon" (5 million km^2) presents major structural challenges:

- **Geographic Asymmetry:** Roughly 70% of naval personnel are concentrated in the Southeast to protect lucrative offshore oil fields, leaving Northern/Northeastern coasts and equatorial regions with sparse surveillance and response times spanning weeks;

- **Illegal, Unreported, and Unregulated (IUU) Fishing:** Distant-water fishing fleets routinely encroach upon Brazil's EEZ; tracking these vessels across vast ocean spaces with limited patrol assets is extremely difficult, due to the vastness of the ocean and the limited number of patrol vessels;

- **Critical Infrastructure Protection:** Securing submarine cables and offshore oil/gas platforms, vital to national energy and data communications, demands continuous, costly patrols;

- **Environmental Degradation and Biodiversity Loss:** Beyond responding to oil spills, the MB must enforce compliance in Marine Protected Areas (MPAs) that often exist only on paper;

- **Resource Constraints and Modernization Demands:** Despite major defense projects, such as the construction of new "Tamandaré"-class frigates and the development of a nuclear-powered submarine, the Brazilian Navy continues to suffer from a chronic lack of funding. The modernization and acquisition of advanced surveillance technologies, which are necessary for such a vast maritime territory, continue to pose a huge financial obstacle.

7. Conclusions

Brazil's maritime nature, contrasting with the more land-oriented focus of other Latin American nations (such as Mexico), highlights that the sea, specifically the South Atlantic, is Brazil's gateway to consolidating its position as an emerging global power across geopolitical, economic, and naval spheres (cf. Albrecht, 2011; Sánchez de la Barquera, 2021).

We could conclude, stating that Brazil conceives its naval strategy as a long-term State policy crafted at the highest political and military levels, transcending short-term electoral cycles and party changes. State policies, unlike temporary government programs, carry the weight of national imperatives necessary to address complex geopolitical challenges. We can also conclude that Brazil views its naval strategy as a state project, that is, as a public policy of the state, formulated at the highest political and military levels with long-term objectives to address the needs of the country as a whole. These objectives are of great magnitude and long-term in nature, thus transcending the terms of federal governments and any potential changes in the ruling party. State policies, rather than policies specific to a single administration, are national in nature and essential for resolving highly complex problems and

//www.gob.pe/institucion/marina/noticias/1383879-marina-de-guerra-del-peru-reafirma-su-compromiso-con-la-seguridad-y-cooperacion-regional-en-bracolper-naval-2026).

[22]The 2026 "ACRUX XII" joint exercise was the largest multinational riverine operation in South America. It took place from April 20 to 26 on the so-called "Paraguay-Paraná Waterway" (in Brazilian waters), with more than 700 personnel and 18 riverine vessels from the navies of Argentina, Brazil, Bolivia, Paraguay, and Uruguay. The main activity was the simulation of a mission commissioned by the UN (vid.: https://www.argentina.gob.ar/noticias/despliegue-fluvial-multinacional-y-fortalecimiento-de-la-interoperabilidad-regional).

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situations (cf. Sánchez de la Barquera, 2017: 10). The primary hurdle remains political and financial: maintaining steady funding and defense investments across changing federal administrations amid competing social and economic demands. Internationally, Brazil prioritizes diplomacy and multilateral cooperation without relinquishing robust defense capabilities.

Inter-agency alignment remains critical. Divergent perspectives between the Ministry of Environment (MMA) and the Ministry of Fisheries and Agriculture (MPA) exemplify internal tension: the MMA views marine fauna as biodiversity requiring cautious conservation, whereas the MPA adopts an economic approach focused on fishery exploitation. Without unified regulations and binding legal frameworks, enforcement efficacy risks lagging behind international standards. Thus, although Brazil is making efforts to promote the protection of ocean resources, the effectiveness of these measures, combined with the lack of specific and binding regulations, results in a situation that lags behind the progress made at the international level.

Finally, the economic, environmental, military, cultural, and diplomatic opportunities offered by the maritime domain represent immense potential for Brazil. Through active, responsible governance, Brazil can maximize the benefits of sustainable ocean utilization, strengthening its leadership in international relations and contributing to a more equitable global maritime order. Future research should examine marine resource governance, foster regional/international cooperation, and reinforce environmental conservation mechanisms to fully realize the strategic promise of the sea.

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