

Regional report on

Sustainable Blue Economy

in Latin America
and the Caribbean

Regional report on the Sustainable Blue Economy in Latin America and the Caribbean

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Overview

This report stems from a strategic collaboration between CAF – Development Bank of Latin America and the Caribbean, the World Economic Forum (WEF), and the World Resources Institute (WRI), formalized through the signing of a Memorandum of Understanding in October 2024, during World Oceans Day at COP16 of the Convention on Biological Diversity, held in the city of Cali, Colombia. The purpose of this partnership is to accelerate the transition toward a Sustainable Blue Economy in Latin America and the Caribbean (LAC), in response to global challenges related to sustainability, climate resilience, and social equity.

The three institutions bring together complementary capabilities: CAF contributes its expertise in green and blue finance, technical cooperation, and regional integration; WEF connects the region with global leadership and innovation networks; and WRI provides scientific and public policy expertise, with a particular focus on sustainable ocean plans. This convergence seeks to mobilize knowledge, innovation, and financing in support of an ocean agenda that combines conservation, economic development, and social well-being.

The Sustainable Blue Economy is conceived as a framework that links the sustainable use of the ocean and its resources with the generation of prosperity and environmental conservation. It represents a unique opportunity for LAC, while also requiring the region to address persistent challenges such as overfishing, pollution, habitat degradation, financing gaps, and weaknesses in governance.

Today, the region stands before a historic window of opportunity to consolidate its leadership in the global ocean sustainability agenda. Seizing this opportunity will depend on the ability to align political leadership, inclusive governance, innovation, and ambitious financing that place people and ocean ecosystems at the center of decision-making.

This document represents a strategic contribution to strengthen the knowledge base, advance the regional ocean sustainability agenda, and promote blue finance in LAC.

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Puerto López, Ecuador

Introduction

This report provides a comprehensive analysis of the state of the Sustainable Blue Economy (SBE) in Latin America and the Caribbean (LAC). Its purpose is to offer an updated overview that helps explain how the SBE is currently configured in the region, what its main dynamics are, and how these are expressed across different subregional contexts.

Several broad indicators reflect the scale of the SBE in the region. More than 27% of the population of LAC is estimated to live in coastal areas, where fishing, tourism, maritime transport, and logistics constitute essential sources of livelihoods.¹ Considering that nearly 80% of the region's population lives in cities, many of them coastal, some projections place this figure as high as 60%. In addition, 41 million people live in low-elevation coastal areas with high climate vulnerability.²

According to UNEP's ABC of the Kunming-Montreal Global Biodiversity Framework,³ LAC accounts for approximately 40% of the world's biodiversity, including marine and coastal ecosystems, among which the Mesoamerican Reef stands out as the second largest in the world. Likewise, ecosystems such as mangroves and seagrass beds are highly valued for their significant carbon sequestration capacity.⁴

This vast natural capital constitutes both a pillar of well-being and livelihoods for the population and a strategic foundation for the region's sustainable, resilient, and inclusive development. At the same time, LAC faces critical challenges such as overfishing, marine pollution—to which the region contributes close to 12% of global plastic pollution⁵—ocean acidification, habitat loss, and institutional shortcomings. In this context, the SBE provides a framework for organizing these tensions and a comprehensive approach for understanding how to transform them into opportunities for innovation, prosperity, and social equity.

With this in mind, the structure of this document follows a sequence that moves from a conceptual framing toward progressively greater levels of detail and synthesis. Following this introductory chapter, Chapter 2 establishes the conceptual framework of the SBE and its principles, with the aim of ensuring a common language and consistent criteria throughout the report.

Chapter 3 presents a regional analysis of the SBE in LAC. It begins with an overview that synthesizes the region's shared dynamics and continues with sections dedicated to the Caribbean, Mexico and Central America, Northern South America, and the southernmost part of the continent. The division into subregions reflects the geographic, historical, and institutional diversity of LAC, which is expressed through differentiated trajectories and shared patterns that become more visible at this level than through a purely sectoral approach.

Chapter 4 examines the factors that enable progress in the transition toward an SBE. It includes sections on regional initiatives, the ecoregional perspective, the role of Sustainable Ocean Plans (SOPs), scientific research, innovation, and governance. These components are presented as enabling conditions that help explain the capacity of countries and of the region as a whole to transform diagnosis into sustained action.

Chapter 5 organizes the main challenges, risks, and opportunities identified throughout the report. This section serves as a reference point for understanding the most significant tensions and for identifying the critical areas requiring attention within the framework of the regional blue agenda.

Chapter 6 systematizes the conclusions of the analysis, bringing together the cross-cutting messages that connect the different sections of the document and offering a compendium of strategic findings of value to different audiences. Finally, Chapter 7 closes the report with a high-level message that reinforces the coherence of the narrative and ensures continuity in the document's overarching storyline.

Throughout all its sections, the report incorporates updated data, thematic text boxes, and illustrative examples that enrich understanding of the SBE in LAC. In doing so, it seeks to establish itself as a reference document that combines a broad regional perspective with a differentiated analysis of subregional particularities, offering a shared knowledge base on the evolution of this agenda in the region.

Conceptual framework

In broad terms, Blue Economy refers to the set of economic activities directly or indirectly linked to the ocean and coastal environments. It includes sectors such as fisheries, marine tourism, maritime transport, offshore energy, and marine biotechnology. While this definition has been useful in highlighting the economic importance of the ocean, it is insufficient on its own, as it does not incorporate considerations related to environmental sustainability, social inclusion, or territorial equity.

In response to these limitations, the concept of the Sustainable Blue Economy has emerged, expanding the approach to ensure that the use of marine and coastal resources is carried out under environmental sustainability criteria. In line with the Sustainable Blue Economy Finance Principles promoted by the United Nations Environment Programme Finance Initiative (UNEP FI) since 2018,⁶ CAF has adopted this vision as an operational reference framework, defining the SBE as one that positively impacts the ocean and marine-coastal areas and “provides social and economic benefits for current and future generations; restores, protects, and maintains diverse, productive, and resilient ecosystems; and is based on clean technologies, renewable energy, and circular material flows.” It is an economy grounded in circularity, collaboration, resilience, opportunity, and interdependence. Its growth is driven by investments that reduce carbon emissions and pollution, improve energy efficiency, harness the power of natural capital and the benefits provided by these ecosystems, and halt biodiversity loss. “The Sustainable Blue Economy is an objective of the Blue Economy in its broadest sense, and therefore excludes non-renewable extractive industries (for example, offshore oil and gas exploitation and deep-sea mining), as well as unsustainable practices in other sectors” (UNEP FI, 2021).

In addition, the World Resources Institute emphasizes that a truly sustainable ocean economy must also be equitable, ensuring that coastal communities and historically marginalized groups participate in and benefit fairly from ocean wealth. This social dimension is inseparable from environmental sustainability and reinforces the need to integrate equity criteria into any ocean strategy.

The World Economic Forum has highlighted the need to move toward a regenerative blue economy, underscoring that it is not enough to maintain the ocean’s current condition, but rather that it must be restored and its capacity to sustain life, prosperity, and resilience strengthened.

For the purposes of this report, a common understanding that integrates these perspectives has been adopted: the Sustainable Blue Economy is conceived as a comprehensive framework in which the ocean is recognized as a unique ecosystem and a common good, whose responsible management makes it possible to combine economic prosperity, social equity, and environmental resilience in LAC.



Chubut, Argentina

The Sustainable Blue Economy in Latin America and the Caribbean

The Sustainable Blue Economy in Latin America and the Caribbean is undergoing a process of consolidation characterized by uneven progress, persistent challenges, and opportunities for transformation. In recent years, initiatives aimed at integrating sustainability criteria into marine and coastal sectors have multiplied, while programs, policies, and financial mechanisms have been developed to address the region's social, environmental, and economic challenges. Although these efforts remain fragmented, they are laying the foundation for identifying common trends and differentiated trajectories across the blue agenda.

This chapter provides a structured review of this landscape. The first section presents regional elements that help identify shared dynamics and points of convergence beyond national differences. Rather than serving as an inventory of figures, it seeks to situate how the region as a whole is advancing in the construction of a sustainable blue action framework—from ocean planning to resource mobilization, including the incorporation of conservation and equity objectives into development agendas.

The diversity of LAC requires an approach that goes beyond sectoral descriptions or a country-by-country review. Organizing the analysis around subregions makes it possible to capture the interaction among ecological, socioeconomic, and governance factors that transcend national borders. This approach also highlights the dynamics shared within each geographic grouping, showing how certain challenges and opportunities manifest collectively and require coordinated responses at that level.

With this landscape in mind, the analysis is subsequently organized into four subregions that allow for a clearer understanding of their geographic, institutional, and socioeconomic specificities:

1. The Caribbean, comprising the island countries of the Caribbean basin, as well as Guyana and Suriname on the basin's southeastern edge.

2. Mexico and Central America, encompassing the countries from Panama to Mexico, which share interests in both the Pacific and Caribbean basins.
3. Northern South America, including Peru, Ecuador, Colombia, and Venezuela.
4. Southern South America, comprising the Southern Cone countries—Chile, Argentina, Uruguay, and Brazil.

From this subregional perspective, the chapter examines the progress, challenges, and opportunities shaping the implementation of the SBE in LAC. It does so through an exploration of strategic sectors such as port development, marine renewable energy, innovation, marine and coastal tourism, fisheries, biotechnology, and ecosystem conservation, analyzing how regulatory and financial frameworks, together with emerging productive activities, are shaping an architecture for structural transformation. This exercise provides an integrated and comparative perspective on how both established and emerging economic sectors are evolving toward more sustainable, resilient, and inclusive development models.

In this context, it is important to note that port development and logistics in LAC face a structural challenge: modernizing infrastructure that is critical to both regional and global trade amid investment gaps, climate vulnerabilities, and growing sustainability requirements. With more than 1.2 billion metric tons of cargo handled in 2022⁷ and freight valued at nearly USD 1.7 trillion, the region's ports have strengthened their position within global logistics chains. In fact, container traffic increased by 11.8% through September 2023, the highest growth rate worldwide.⁸ However, the sector also generates significant environmental impacts, including greenhouse gas emissions, spills, and the degradation of marine habitats, and accounts for approximately 3% of global greenhouse gas (GHG) emissions.⁹ This situation is compounded by the climate exposure of port infrastructure. In 2023, the Port of San Antonio¹⁰ [Chile] operated only 87% of the time due to anomalous swells, underscoring the urgency of adopting resilient and adaptive solutions. In response,

the sector is advancing practices such as the use of alternative fuels, electrification, digitalization, and the optimization of maritime routes. According to the OECD (2025),¹¹ decarbonizing maritime transport requires policies that promote low-emission technologies, energy efficiency, and coherent regulatory frameworks. Investment in sustainable port infrastructure therefore not only enhances the region’s competitiveness but is also essential for advancing the effective implementation of the SBE while maintaining a balance between the protection of marine and coastal ecosystems and resilience to climate change.

With regard to marine renewable energy, LAC possesses exceptional technical potential, particularly for offshore wind energy development. According to official estimates from the World Bank’s Energy Sector Management Assistance Program (ESMAP),¹² the region has approximately 6,343 gigawatts (GW), or 6.3 terawatts (TW), of technical potential in marine waters, including both fixed-bottom and floating technologies within 200 kilometers of the coastline. This resource far exceeds the current electricity demand of all countries in the region and represents a strategic opportunity to diversify energy matrices, substantially reduce dependence on fossil fuels, and position LAC as a key player in the global energy transition. However, development remains at an early stage, requiring long-term public policies, clear regulatory frameworks, marine spatial planning, consultations and agreements with Indigenous Peoples and local communities, and regional cooperation to mobilize investment and technological innovation.

The implementation of the SBE in LAC requires harnessing innovation and advanced technologies as drivers of change. These tools make it possible to modernize ocean and marine resource management, improve the efficiency and traceability of marine and coastal activities, and reduce negative impacts. At the same time, they create opportunities for economic diversification and the generation of environmental and social benefits that strengthen the region’s resilience.

Tools such as remote sensing, artificial intelligence (AI), and big data analytics are redefining ocean

management by enabling process optimization in critical sectors such as fisheries, conservation, and environmental monitoring. As the WEF notes,¹³ a growing number of ventures around the world demonstrate that it is possible to generate positive impact through investment. Initiatives such as Sway, which develops seaweed-based bioplastics; Bureo, which transforms discarded fishing nets into high-value recyclable materials; and Blue Ocean Gear, which uses smart buoys to track fishing equipment and reduce pollution from ghost gear, provide concrete examples of how technology can promote circularity, protect biodiversity, and generate economic value. In the area of sustainable production, companies such as Coast 4C, which promotes sustainable seaweed value chains, and nextProtein, which produces aquaculture inputs from insects, are helping to reduce pressure on marine ecosystems while strengthening inclusive coastal economies.

For its part, sustainable marine and coastal tourism continues to establish itself as a strategic emerging sector in LAC, supported by a robust post-pandemic recovery and growing economic impact. In 2023, the travel and tourism sector generated more than 110,000 new jobs in the region, surpassing pre-pandemic levels and reaching a total of 17.3 million jobs, according to the World Travel & Tourism Council (WTTC).¹⁴ In 2024, the sector’s economic contribution is estimated at USD 714 billion, equivalent to 10% of regional GDP, reflecting the growing importance of sustainable tourism models based on the responsible use of coastal natural and cultural capital.¹⁵

Fisheries are a strategic component of food security and economic development in the region. Among the challenges they face are overexploitation, the need to adopt sustainable practices, habitat loss and degradation, pollution, and the impacts of climate change, as well as unequal access to markets and the limited incorporation of technology and innovation. These challenges underscore the urgent need to implement sustainable fisheries policies, strengthen ocean governance, and promote responsible fishing practices to protect marine ecosystems and the communities that depend on them. In addition, greater

regional cooperation is critical to combat illegal, unreported, and unregulated (IUU) fishing.

The exploration of marine genetic resources for pharmaceutical and biotechnological applications is a growing field. The bioeconomy in LAC highlights the potential of marine biodiversity resources to drive economic diversification and sustainable development.¹⁶ Globally, the marine biotechnology market is expected to grow at a compound annual growth rate of between 7.8% and 10.5% between 2024 and 2029, reflecting increasing interest and investment in the sector.¹⁷ However, fully realizing this potential will

The Caribbean

The Caribbean is composed primarily of Small Island Developing States (SIDS) and Large Ocean States,¹⁹ whose Exclusive Economic Zones (EEZs) are, on average, 28 times larger than their land area.²⁰ Although their combined population accounts for less than 1% of the world’s population, these countries depend heavily on the ocean as an essential source of natural resources and as the foundation of strategic productive sectors such as fisheries and tourism, which are critical not only for their economic and scenic value, but also for their role in climate change mitigation. At the same time, the region faces growing structural and environmental pressures arising from global warming, climate variability, and the unregulated exploitation of marine and coastal ecosystems. These pressures increase the vulnerability of Caribbean territories—particularly the smaller islands—by threatening critical infrastructure, undermining traditional livelihoods, and weakening the ecosystems that underpin their physical, food, and economic security.

The countries of the Caribbean are integrated through the Caribbean Community (CARICOM), and through this organization have strengthened their governance frameworks and commitment to the Sustainable Blue Economy through coordinated action that combines

require overcoming challenges such as biopiracy and the lack of investment in research and development. According to experts, the region invests only about 0.6% of its GDP in R&D, limiting its capacity to develop and commercialize innovations based on marine biodiversity.¹⁸

With respect to regulatory and financial frameworks, countries are progressing at different speeds. Nevertheless, the region offers noteworthy examples of good practices and models to follow, which are examined throughout the discussion of each subregion.

regional governance, catalytic financing, and strategic sectoral investment. In 2024–2025, the CARICOM Secretariat, with support from the Government of the United Kingdom, began developing a Caribbean Blue Economy Policy²¹ as part of a regional framework for sustainable ocean management aimed at harmonizing efforts among member states. At the same time, an Ocean Coordination Mechanism was implemented under the CLME+/ProCaribe+ project,²² focused on marine spatial planning, ecological restoration, and shared governance.

In the fisheries sector, the Ministerial Council of the Caribbean Regional Fisheries Mechanism (CRFM)²³ adopted resolutions promoting sustainable fisheries, sargassum management, and maritime planning. In line with this vision, CAF²⁴ has expanded its presence in the region through a new financing facility for CARICOM, providing funding for projects related to coral reef restoration, coastal sanitation, invasive species control, and small-scale fisheries, primarily within the framework of the Caribbean Large Marine Ecosystem (CLME).²⁵ In addition, with financing from the Global Environment Facility (GEF) and under the implementation of CAF and the Food and Agriculture Organization of the United Nations (FAO), the CRFM is implementing the BE-CLME

project, which promotes the development of the blue economy within the CLME through marine spatial planning and marine protected areas, ecosystem-based fisheries management, and sustainable seafood value chains.

The region possesses valuable natural assets, extensive experience in marine conservation, innovative human capital, and a growing framework of public policies and international partnerships that position it as a global laboratory for the Sustainable Blue Economy. Barbados, the Dominican Republic, Jamaica, The Bahamas, and Trinidad and Tobago have already made progress in regulatory frameworks, innovative financing mechanisms (such as blue bonds), the establishment of Marine Protected Areas (MPAs), studies on the development of marine renewable energy, and local capacity-building efforts. Regional initiatives such as the Centre of Excellence in Oceanography and the Blue Economy²⁶ (COBE) in Antigua and Barbuda, as well as the implementation of natural capital accounting in The Bahamas, provide tangible examples of commitment to the blue agenda. Along the same lines, Guyana has incorporated its Maritime Economy Plan (2021)²⁷ as a pillar of its Sustainable Blue Economy strategy, closely aligned with the Low Carbon Development Strategy 2030, thereby establishing a framework for the responsible management of marine and coastal resources and the strengthening of climate resilience.

In the area of port development, the Caribbean plays a strategic role in the logistics architecture of both regional and global maritime trade through a network that reflects varying levels of modernization, operational capacity, and functional specialization. Within the framework of the Sustainable Blue Economy, this infrastructure not only ensures maritime connectivity but also serves as a catalyst for the transition toward more resilient and diversified productive models. Alongside established hubs such as Kingston (Jamaica) and Freeport (The Bahamas), Guyana and Suriname are becoming increasingly important as economic transformation in sectors such as offshore energy, agribusiness, and river-maritime logistics strengthens new connectivity corridors and emerging value chains.^{28,29} The strategic location of these two countries

on the southeastern edge of the Caribbean gives them a more prominent profile that expands the regional and global reach of the Caribbean port network, reinforcing their role in logistics competitiveness and the sustainability of supply chains.

The ten most significant ports in the region, located in Jamaica, The Bahamas, Puerto Rico, the Dominican Republic, Barbados, Curaçao, Guadeloupe, Aruba, and Haiti, range from third- to fifth-generation ports in terms of development. Kingston and Freeport are the most advanced in automation, digitalization, and their role as transshipment hubs serving global shipping routes. Their classification is based primarily on container throughput, measured in twenty-foot equivalent units (TEUs),³⁰ together with functional specialization and strategic importance within logistics chains. Kingston handled 2,137,500 TEUs in 2022, consolidating its position as a transshipment hub for routes linking North America, the Caribbean, and the Atlantic coast of South America.³¹ Freeport handled 1,724,000 TEUs in the same year, underscoring its role as a global-scale logistics hub, supported by its operational depth and geostrategic location.³² By contrast, official data for 2022–2024 are not available for the remaining ports assessed, limiting further comparisons and underscoring the need to strengthen port statistical information systems across the region.

From a sustainability perspective, challenges vary considerably across ports. Some, such as Bridgetown (Barbados) and Jarry (Guadeloupe), have launched initiatives focused on the energy transition, operational digitalization, and terminal modernization.^{33,34} Others, such as Port-au-Prince (Haiti), continue to face structural barriers related to basic infrastructure, port security, and essential services. In this context, the principles of smart ports—which integrate energy efficiency, electrification, emissions control, and environmental management—are being progressively incorporated into planning frameworks through 2030.^{35,36}

The social dimension of port infrastructure is also critical. Ports generate direct and indirect employment, facilitate access to essential goods, and ensure energy connectivity for islands with limited domestic

Caroni Swamp, Trinidad and Tobago



Table 1.
Logistics and port infrastructure in the insular Caribbean,
classified by annual TEU throughput

No.	Port	Country	Annual TEU* throughput (2023–2024)	Significance (specialization, strategic location)	Port type	Generation	Outlook to 2030
1	Kingston	Jamaica	2,137,500 TEUs	Leading Caribbean transshipment hub with a modern operating concession Capacity of 3.2 million TEUs, supported by IDB investment	Containers / Transshipment Hub	5G	Digital expansion and port automation
2	Freeport Container Port	The Bahamas	1,724,000 TEUs	Mega transshipment port (“Hub of the Americas”) Deepwater facilities capable of accommodating ultralarge vessels Global logistics hub	Containers / International Transshipment Hub	5G	Terminal modernization and digitalization
3	San Juan	Puerto Rico	No official data since 2022 (estimated at ~700,000 TEUs)	Container and cruise terminal Planned modernization and channel deepening	Multipurpose: Containers and Cruise Traffic	4G	Modernization and energy efficiency projects
4	Santo Domingo (SDDQ-OD)	Dominican Republic	No official data since 2022 (estimated at ~800,000 TEUs)	Supports local industrial and commercial exports Logistics and transport infrastructure plans in place through 2030	Multipurpose: Containers, General Cargo, and Refrigerated Cargo	4G	2030 Port Infrastructure Master Plan
5	Bridgetown (Deep Water)	Barbados	No official data since 2022 (estimated at 97,000 TEUs)	Key multipurpose port in the southern Caribbean Serves cruise traffic and regional agricultural and industrial cargo	Multipurpose: General Cargo, Agricultural Cargo, and Cruise Traffic	3G	Partial modernization plan (2025–2030)
6	Port of the Americas (Ponce)	Puerto Rico	Projected 250,000 TEUs	Megaport project under construction (USD 750 million) Designed for postPanamax traffic and intercontinental transshipment	Containers / Intercontinental Megahub (Under Development)	5G (project)	Phase 1 construction through 2030 (USD 750 million)
7	Willemstad (Curaçao)	Curaçao	No official data since 2022 (estimated at ~300,000 TEUs)	Specialized terminal for hydrocarbons and containers Expansion includes an LNG terminal Modernization planned	Multipurpose: Hydrocarbons and Containers	4G	Terminal upgrades and LNG expansion

No.	Port	Country	Annual TEU* throughput (2023–2024)	Significance (specialization, strategic location)	Port type	Generation	Outlook to 2030
8	Pointe-à-Pitre / Jarry	Guadelupe	No official data since 2022 (estimated at ~247,000 TEUs/year)	Smart Port under development (“Port Nouvelle Génération”) Focus on sustainability and digitalization	Containers / General Cargo	4G	Completion of the Port Nouvelle Génération digitalization project and energy transition of the auxiliary fleet
9	Aruba (Oranjestad)	Aruba	No official data since 2022 (estimated at 57,062 TEUs in 2021)	Energy export and multi-purpose port functions Government plans for LNG infrastructure and clean energy through 2030	Multipurpose: LNG, Energy, and Cruise Traffic	4G	Development of an LNG terminal and modernization of port infrastructure to support clean energy
10	Port-au-Prince	Haiti	No official data	Country's principal port Essential cargo and provisioning Limited infrastructure prioritized for future development	General Cargo / Coastal Shipping	3G	Prefeasibility study for comprehensive modernization underway, with multilateral support

Conventions and interpretation of criteria

TEU (Twenty-foot Equivalent Unit): Standard unit used to measure container throughput in maritime transport.

Specialized CT (Specialized Container Terminal): Port terminal dedicated primarily to container handling operations.

Generation: Refers to the level of modernization and investment in port infrastructure (e.g., 3G = basic infrastructure; 4G = modern container-handling facilities; 5G = highly automated infrastructure and transshipment hub functions).

TEU Throughput: Key metric used to position ports within the region, based on ECLAC/IDB data.

Specialization: Assesses whether ports operate primarily as transshipment terminals, multipurpose facilities, or ports focused on agricultural or industrial cargo.

Geostrategic Position: Evaluates the role of ports as key corridors or nodes for regional and global trade.

Handling Capacity: Expressed in millions of TEUs; some ports also handle significant volumes of general cargo measured in metric tons.

Source: Authors based on official data.

generation capacity. However, the limited integration of many of these systems with multimodal logistics networks and regional value chains constrains their ability to distribute benefits equitably.

Looking ahead to 2030, the Caribbean presents a mixed outlook. Some ports, such as Ponce (Puerto Rico), are moving forward with expansion projects worth more than USD 750 million, aimed at becoming world-class megaterminals.³⁷ Others, such as Willemstad (Curaçao) and Aruba, are planning upgrades focused on energy efficiency, alternative fuels, and progressive digitalization. Support from multilateral institutions will be critical to ensuring that these developments align with SBE principles, particularly with regard to resilient infrastructure, the energy transition, and the protection of marine and coastal ecosystems.

In terms of energy generation, Caribbean countries face the dual challenge of ensuring energy security while advancing the decarbonization of their economies, in a context marked by high vulnerability to climate change and a strong dependence on imported fossil fuels. Against this backdrop, marine renewable energy—particularly offshore wind energy—has emerged as a strategic alternative with significant technical potential, aligned with energy transition objectives, climate resilience, and the sustainable use of marine and coastal natural capital.

Recent studies supported by multilateral institutions have highlighted the region’s considerable potential. Through ESMAP, the World Bank has estimated that Caribbean countries collectively possess approximately 751 GW of technical offshore wind potential, of which 238 GW corresponds to fixed-bottom technology and 513 GW to floating solutions adapted to the region’s bathymetric conditions.³⁸ This capacity is several times greater than the region’s current electricity demand, positioning the Caribbean as a natural candidate for the development of this energy source.

Complementing these findings, a regional study conducted by the Inter-American Development Bank (IDB) and the Caribbean Development Bank (CDB) examined offshore wind resources and other ocean energy technologies across the Wider Caribbean,³⁹ concluding that resource availability is sufficient to

meet—and exceed—projected national electricity demand through 2050⁴⁰ (Table 2). The results point to a high availability of technically suitable areas, particularly within the territorial waters of countries such as Trinidad and Tobago, Barbados, Jamaica, and Antigua and Barbuda, where the combination of wind speeds, water depths, coastal infrastructure, and proximity to grid interconnection points makes the development of commercial-scale projects feasible.

Trinidad and Tobago has been at the forefront of national pre-investment studies in this area. Using advanced modeling based on Wind Atlas and WRF tools, researchers identified five priority zones with simulated installed capacities ranging from 300 MW to 30 GW per site and estimated annual electricity generation of up to 2,150 GWh, with average capacity factors ranging from 34% to 42%.⁴¹ These findings position the country as a leading regional example, with a strong technical foundation for developing a roadmap to deploy offshore wind energy over the coming decades.

At the same time, continental Caribbean countries such as Suriname and Guyana are increasingly being incorporated into regional assessments because of their strategic location on the southeastern flank of the Caribbean and their emerging role in the energy transition. In Suriname, World Bank studies⁴² identify offshore wind technical potential that could complement a national energy matrix currently dependent on hydrocarbons and hydropower generation. Guyana, meanwhile, has begun assessing offshore wind resources as part of its energy diversification strategy. Within this framework, marine renewable energy is viewed as a complement to the expansion of the country’s offshore hydrocarbon sector, consistent with the commitments set out in its Nationally Determined Contribution (NDC).⁴³

La Romana, Dominican Republic



Table 2.
Offshore wind potential in the Caribbean subregion (GW)

Country	Estimated technical potential (GW)	Current status of development	Ongoing initiatives	Approximate total electricity demand (GWh)
Antigua and Barbuda	18.2	Regional technical studies	Despite the identification of suitable development areas and substantial technical potential, no offshore wind farms had been developed in any island country as of 2024. Pilot projects are expected to begin around 2030, followed by gradual scaling through 2040–2050.	0.04
The Bahamas	34.2			0.22
Barbados	7.3			1.04
Granada	10.4			25
Jamaica	12.9			0.6
St. Kitts & Nevis	9.7			24
St. Lucia	4.4			46
St. Vincent & the Grenadines	6.7			17
Trinidad & Tobago	34			1.06
Suriname	Not officially available			1,896 (2023)
Guyana	Not officially available			1,070 (2023)

Source: Authors based on estimated data from official sources.

Despite this potential, no operational offshore wind farms had been identified in any Caribbean country as of 2024. Nevertheless, studies financed by the IDB, CDB, and international agencies have established a solid knowledge base to support medium- and long-term energy planning. These analyses have been incorporated into national and regional energy transition plans and are consistent with the climate commitments reflected in countries’ NDCs. Current projections point to the development of pilot projects beginning around 2030, followed by progressive deployment through 2040 and 2050, depending on access to concessional financing, stronger regulatory capacities, and the adoption of regional cooperation frameworks.

In addition, several complementary initiatives have begun exploring the integration of offshore wind energy with green hydrogen production projects as a means of diversifying energy exports and enhancing the resilience of island energy systems. This is particularly relevant for islands with surplus technical potential, where the production of green energy carriers could create opportunities for regional and international energy cooperation,⁴⁴ improving the economic viability of offshore wind development.

In summary, the Caribbean has a promising technical foundation, supported by robust and verifiable studies that point to a strategic opportunity to position offshore wind energy as a cornerstone of structural energy transformation. The region remains at an early stage of development, with no projects yet in operation, but it possesses the natural conditions, preliminary technical knowledge, and institutional support needed to advance toward a resilient and sustainable energy matrix fully aligned with Sustainable Blue Economy principles.

With regard to the regulatory and financing dimensions of the SBE, Barbados has emerged as a regional pioneer. Since 2021, the country has had a National Blue Economy Strategy and Action Plan.⁴⁵ In 2022, it became the first Caribbean country to issue Blue Bonds through an innovative financial transaction that mobilized approximately USD 50 million to finance marine conservation projects. These resources have played a key role in supporting the protection of up to 30% of its

Exclusive Economic Zone (EEZ) and territorial waters, in line with international biodiversity commitments. Barbados has also established the Barbados Blue Economy Partnership,⁴⁶ a multi-stakeholder platform that brings together government, the private sector, academia, and civil society to design and implement coordinated SBE strategies.

From a productive development perspective, emerging SBE models are taking shape across the Caribbean, linking innovative value chains with fisheries, aquaculture, and technology-based enterprises supported by public institutions. In the Dominican Republic, the FISH4ACP program,⁴⁷ led by the Organisation of African, Caribbean and Pacific States (OACPS) and financed by the European Union, focuses on strengthening artisanal mahi-mahi (*Coryphaena hippurus*) fishing businesses. Its strategy includes improvements in cold-chain infrastructure, product diversification, access to finance, social protection, and technical training, with the goal of promoting social inclusion and increasing the value added of sustainable fisheries.^{48,49}

Barbados, meanwhile, has developed a National Blue Economy Strategy, with support from the IDB and UNDP, that includes a Blue Business Incubation Programme. The initiative supports ventures in emerging sectors such as responsible fisheries, sustainable aquaculture, marine biotechnology, and clean coastal technologies. The program has identified more than a dozen startups and small and medium-sized enterprises (SMEs) with scaling potential through incubation services, technical assistance, and international networking opportunities.⁵⁰ In the area of marine innovation and technological development, the Marine Innovation Centre⁵¹ in the Dominican Republic, which focuses on coral reef restoration, has become a regional benchmark. The center supports ecological restoration projects, scientific tourism initiatives, and marine monitoring technologies, aligning applied science with sustainable productive opportunities.

At the same time, business and financing models based on blue carbon are beginning to emerge. In the Dominican Republic, a project led by Conservation International has restored more than 500 hectares of

Table 3.
Productive approaches and collaborative models
for Sustainable Blue Economy development in the Caribbean

Country/Region	Productive approach	Institutional framework / collaborative instruments	SBE models / entrepreneurship / collaborative arrangements
Dominican Republic	Strengthened artisanal fisheries (mahi-mahi) and coral reef restoration	FISH4ACP Programme (OACPS–European Union); Marine Innovation Center (Ministry of Environment and universities)	Inclusion of SMEs in value chains Technology-based and restoration-focused enterprises
Barbados	Incubation of fisheries, aquaculture, and marine biotechnology enterprises	National Blue Economy Strategy (UNDP & IDB) Incubation Program	Networks of innovative blue SMEs linked to international technical cooperation
Trinidad & Tobago	Blue carbon and mangroves	Institute of Marine Affairs and IDB (blue carbon MRV system)	Pilot initiative for carbon credits linked to mangroves
The Bahamas	Marine conservation and blue carbon	Debt for nature swap (IDB, TNC, Standard Chartered, Builders Vision, AXA XL)	Conservation trust fund Implementation of national coastal plans
Granada	Sargassumbased bioeconomy (energy, fertilizers, and biotechnology)	Government–EU–Seafields partnership for the marine industrial bioeconomy	Public-private model for the valorization of marine waste
OECS (Eastern Caribbean region)	Marine governance Regional blue investment	UBEC Project (OECS–World Bank)	Regional investment platforms and marine spatial planning

Source: Authors

Table 4.
Integrated marine and coastal tourism management:
Success stories from the Caribbean

Country	Initiative/Program	Type of intervention	Link to MPA
Granada	Conversion of sargassum into biogas, fertilizers, and bioplastics	Innovative public-private project supported by international cooperation	Indirect (improves coastal environmental conditions)
Dominican Republic	Floating barrier system, mechanized collection, and local hotel-sector management	National intervention with public-private investment	Indirect (protects beaches and is linked to reef areas)
CARICOM - CRFM*	Regional monitoring, early warning, and research system on sargassum impacts	Regional governance and technical cooperation platform	Indirect (focused on fisheries, tourism, and ecosystems)

*CRFM: Caribbean Regional Fisheries Mechanism (CARICOM).
Source: Authors.

mangroves, generating carbon credits for voluntary markets and reinvesting 92% of the resulting revenues in coastal communities.⁵² Trinidad and Tobago is advancing the design of a national blue carbon measurement, reporting, and verification (MRV) system, as well as methodologies for blue carbon projects, with support from the IDB.⁵³

Other Caribbean countries are also deploying innovative financing mechanisms. The Bahamas and Belize have signed debt-for-nature agreements totaling more than USD 300 million, channeling resources toward the conservation of mangroves and seagrass beds through long-term trust funds.⁵⁴ At the regional level, the Organisation of Eastern Caribbean States (OECS), together with the World Bank, is implementing the UBEC program, which promotes blue investment, marine spatial planning, and the strengthening of coastal value chains in countries such as Saint Lucia, Saint Vincent and the Grenadines, and Grenada.⁵⁵

These experiences reflect a Caribbean ecosystem in transition, where ecological restoration, business innovation, and climate finance are increasingly converging. Although many initiatives remain at the pilot stage, their multisectoral approach—combining community participation with tailored financial instruments—provides a strong foundation for scaling resilient, competitive, and sustainable SBE models across the region.

The Caribbean’s geographic, socioeconomic, and ecological characteristics place it at a historic crossroads. On the one hand, the region faces unprecedented pressures; on the other, it has a unique strategic opportunity to become a global benchmark for the SBE.

At the same time, sustainable marine and coastal tourism in the Caribbean faces growing structural and environmental challenges that threaten its sustainability in the short and medium term. One of the most disruptive is the large-scale proliferation of sargassum, a phenomenon that has increased significantly in both magnitude and frequency over the past decade, with major impacts on coastal ecosystems, public health, and the regional tourism economy. In May 2025, an

unprecedented volume of approximately 38 million metric tons of this seaweed was reported across the tropical Atlantic, the Caribbean Sea, and the Gulf of Mexico, exceeding the previous record set in 2022 by more than 70%.^{56,57}

This massive accumulation has direct adverse effects on beaches, coral reef systems, and seagrass beds, diminishing both their ecological value and their attractiveness as tourism assets. Sargassum blooms severely affect perceptions of destination quality, hinder access to the sea, lead to the cancellation of recreational activities, and release toxic compounds such as hydrogen sulfide during decomposition, posing health risks to local communities.⁵⁸ In addition, the presence of sargassum limits the operation of tourism vessels and creates hypoxic conditions that affect marine biodiversity.

The economic consequences have been widely documented. According to the Economic Commission for Latin America and the Caribbean (ECLAC) and the United Nations Office for Disaster Risk Reduction (UNDRR), CARICOM member states incurred estimated losses exceeding USD 102 million in 2022, while beach-cleaning costs could surpass USD 210 million annually.⁵⁹

In response, the Dominican Republic and Grenada have implemented strategies for the containment, valorization, and productive use of this biomass. In the Dominican Republic, the deployment of anti-sargassum barriers and mechanical collection systems has helped partially mitigate the arrival of sargassum in tourism areas, although maintenance costs range from USD 800,000 to USD 1.5 million annually per kilometer of coastline.⁶⁰ Grenada, meanwhile, has established strategic partnerships with the European Union and the private sector to transform sargassum into value-added products such as biogas, fertilizers, and bioplastics, representing a step toward circular environmental management models.⁶¹

CAF supports Caribbean countries through a non-reimbursable technical cooperation initiative aimed at promoting the integrated and sustainable management of sargassum across the Wider Caribbean. The initiative seeks to address the challenges and impacts

associated with the phenomenon throughout the region while developing a portfolio of projects and innovative solutions, including potential financing strategies. In addition, in its capacity as an implementing agency, CAF is managing a USD 10 million GEF grant for the SargMarine project, which will establish a multilevel regional governance framework for integrated sargassum management to reduce its impacts on marine ecosystems, community livelihoods, and local industries such as tourism and fisheries.

These impacts occur within a context of high structural vulnerability. The region, particularly its island states, is heavily dependent on tourism, which directly generated 928,000 jobs in 2022 and is projected to reach 1.19 million by 2033, accounting for more than 6% of total employment in the Caribbean.⁶² However, this economic concentration exposes these countries to greater risks from external shocks, including those associated with climate change. In 2023, the warmest year ever recorded in the region, sea-level rise exceeded the global average, affecting critical infrastructure, livelihoods, and the viability of coastal communities.⁶³ Additional environmental threats include coral reef degradation, the spread of invasive species such as lionfish, and the intensification of extreme events—including hurricanes, droughts, and floods—whose frequency and severity have increased in recent years.^{64,65,66}

Meanwhile, the countries on the southeastern flank of the Caribbean—Suriname and Guyana—are advancing marine and coastal development models grounded in sustainability, although they remain at an early stage and are pursuing distinct approaches. In Guyana, the Maritime Economy Plan (2021), which complements the country's Low Carbon Development Strategy,⁶⁷ incorporates tourism as part of its SBE agenda. The plan strengthens environmental monitoring and maritime surveillance capacities and supports the creation of a national coastal and marine data repository, with assistance from WWF and international partners, to underpin ocean governance and the management of activities such as conservation, tourism, and scientific research. Suriname, for its part, is implementing an adaptive ecosystem-based approach in partnership with Conservation International,⁶⁸ with a particular

focus on mangrove protection and restoration through Building with Nature techniques. These efforts enhance the resilience of coastal communities to sea-level rise. Although Suriname does not yet have a dedicated tourism policy, it recognizes sustainable tourism as a strategic priority, particularly in connection with protected natural areas such as the Central Suriname Nature Reserve and the UNESCO-recognized cultural heritage of Paramaribo. These assets are being integrated into conservation initiatives and MPAs designed to generate employment, community income, and added value from the country's natural capital.

Addressing these challenges will require stronger environmental and tourism governance frameworks, investment in resilient infrastructure, and greater deployment of Nature-based Solutions (NbS). Transforming the sargassum crisis into an opportunity for innovation and territorial integration could mark a turning point in the transition toward a truly regenerative blue economy model.

The region also faces significant ocean governance and management challenges. Institutional fragmentation, overlapping maritime zones under national jurisdiction, and limited capacity to fully exercise rights and obligations under international law hinder the effective management of marine resources.⁶⁹ Pollution from plastics, wastewater, and vessel waste continues to place critical pressure on coastal ecosystems.⁷⁰

Although the potential of living marine resources and ecosystem services—including carbon storage and marine genetic resources—provides a strong foundation for economic diversification, major constraints remain. These include a lack of sector-specific data, cost assessments, and technical capacities needed to access sustainable financing at scale.^{71,72}

Against this backdrop, there is an urgent need to strengthen information systems, regional cooperation, and evidence-based governance mechanisms as enabling conditions for designing transformative interventions and scaling NbS. Building an inclusive SBE in the Caribbean requires integrating conservation and climate resilience with productive development, thereby

forging a new regional compact that places marine natural capital at the center of the region's long-term development strategy.

In the area of conservation, the Caribbean has made progress but still has considerable ground to cover. As of 2023, only 7.85% of its marine area was under formal protection, well short of the global target of 30% by 2030.⁷³ The region also faces interconnected challenges such as food insecurity—which affected 13.8 million people in 2023 as a result of droughts and extreme events⁷⁴ and the urgent need to mobilize more than USD 100 billion in climate adaptation investments, equivalent to roughly one-third of its annual economic output.⁷⁵

The region's persistent structural challenges include:

- High climate vulnerability, particularly among SIDS, affecting critical infrastructure, coastal ecosystems, and livelihoods.
- A high concentration of GDP in traditional tourism activities, limiting economic resilience and adaptive capacity.
- Disparities in institutional and technical capacities to manage sustainable transitions.
- The need to expand MPA coverage to meet the global 30% target.
- Limited effective regional integration for the exchange of technology, knowledge, and financing solutions.
- Weak integration of climate resilience criteria into spatial planning and coastal infrastructure development.

In light of these challenges, advancing the Sustainable Blue Economy will require coordinated strategic actions, including:

- Expanding and effectively managing MPAs, with priority given to critical ecosystems and ecological connectivity.

- Establishing regional mechanisms for technical and financial cooperation while promoting innovative financing arrangements, public-private partnerships, and access to international climate funds, among others.
- Promoting scientific and technological innovation in areas such as sustainable aquaculture, marine biotechnology, digital ocean monitoring, and marine renewable energy, as well as other emerging development opportunities across the region.
- Strengthening multi-stakeholder platforms that support inclusive governance and the active participation of local communities, academia, the private sector, and governments.
- Developing common regional indicators to monitor the SBE based on evidence, results, and transparency.
- Integrating NbS and climate resilience approaches into coastal planning, while modernizing infrastructure and prioritizing vulnerable territories.
- Mobilizing capital flows toward emerging sectors through innovative financial instruments and enabling regulatory frameworks.
- Diversifying local economic drivers by reducing over-dependence on conventional tourism and investing in sustainable value chains, including artisanal fisheries, sustainable tourism, the bioeconomy, and blue innovation.

The transition to an SBE is not merely an environmental imperative—it is a transformative development strategy for the Caribbean. It offers the region an opportunity to diversify its economy, strengthen climate resilience, conserve its extraordinary natural heritage, and position itself as a global leader in ocean innovation. The Caribbean has all the ingredients needed to become a global beacon for the blue future the planet requires.



Nassau, The Bahamas

Mexico and Central America

Mexico and Central America comprise a coastal corridor stretching approximately 15,883 kilometers along the Pacific Ocean, the Caribbean Sea, and the Gulf of Mexico. This strategic geographic position makes the subregion a key hub of interoceanic connectivity, serving as a bridge between the Atlantic and Pacific oceans. Its role in linking global maritime routes drives international trade and strengthens regional logistics and port development. At the same time, the richness and diversity of its marine and coastal ecosystems constitute a strategic asset for advancing the SBE, integrating environmental conservation, economic dynamism, and territorial equity.

In this context, regional port and logistics development is critical. Mexico and Central America have consolidated their position as a key node for commercial integration across oceans and continents, connecting Latin America with Asia, Europe, and North America. This role extends beyond cargo volumes. Major ports such as Manzanillo on Mexico's Pacific coast and Balboa and Cristóbal (Colón) on the Panama Canal operate as specialized logistics platforms, transshipment hubs, and gateways for intercontinental trade.

Connectivity between the Pacific and Caribbean coasts has been strengthened by the Interoceanic Corridor of the Isthmus of Tehuantepec (CIIT)⁷⁶ in Mexico, which promotes multimodal connectivity through the integration of port, energy, rail, and industrial infrastructure under a sustainable development vision extending to 2030. Cargo patterns reveal increasing specialization in containerized cargo, bulk commodities, clean energy, and agricultural exports, with a combined capacity exceeding 10 million TEUs in Mexico and Panama alone.⁷⁷ Manzanillo and Lázaro Cárdenas lead activity on the Pacific coast, while Puerto Cortés has positioned itself as Central America's principal logistics hub serving the U.S. market. In the Caribbean, Limón-Moín in Costa Rica and Guatemala's ports play a key role in agricultural and industrial trade.

The Panama Canal, with more than 13,000 vessels transiting annually between its Pacific terminus at

Balboa and its Caribbean terminus at Cristóbal, remains one of the hemisphere's most strategic logistics assets, linking energy routes, global supply chains, and worldwide flows of consumer goods.⁷⁸

Looking ahead to 2030, the region's port expansion and logistics modernization plans contemplate investments worth several billion dollars. Mexico projects more than USD 6 billion⁷⁹ in projects across Manzanillo, Veracruz, Altamira, Progreso, Ensenada, and Lázaro Cárdenas. The CIIT alone includes more than USD 3.77 billion in investments to consolidate logistics, energy, and industrial infrastructure, including green hydrogen corridors and sustainable intermodal transport.⁸⁰ In Panama, the Energy Strategy 2030⁸¹ and the RENPOWER program⁸² establish a roadmap for integrating renewable energy into logistics platforms. Honduras, meanwhile, is advancing the energy transition at Puerto Cortés through hybrid microgrids, solar power plants, and new logistics platforms aligned with its National Logistics Plan and the Sustainable Development Goals (SDGs).⁸³ Guatemala, for its part, has oriented its strategy toward improving the efficiency of its maritime infrastructure, promoting an integrated approach to port development and coastal conservation that is consistent with a more structured vision of territorial planning.

Within this logistics network, the Panama Canal continues to play a central role as one of the most important pillars of international maritime trade and a strategic asset for LAC. Connecting more than 140 maritime routes and 1,700 ports worldwide, the Canal handles more than 511 million CP/SUAB tons annually.^{84,85} Since its inauguration in 1914, and following its expansion in 2016 with the Neopanamax locks, it has accommodated more than 12,000 vessel transits per year, accounting for nearly 3.5% of global maritime trade.⁸⁶ Its operations are supported by the ports of Balboa (Pacific) and Cristóbal (Caribbean), which are equipped with intermodal infrastructure and free-trade zones currently being expanded through public-private partnership arrangements, including the investment led by BlackRock in 2024.⁸⁷



Table 5.
Logistics and port infrastructure in Mexico and Central America, classified by annual TEU throughput

No. Port	Country	Annual TEU* throughput (2023–2024)	Significance (specialization, strategic location)	Port type	Generation	2030 outlook
1	Manzanillo Mexico (Pacific)	4M (2024) Projected at 10M (2030)	Mexico's principal Pacific port High container throughput Key gateway for Asia–Americas trade and a cornerstone of the CIIT	Specialized CT** / Multipurpose	4G (be-ing up-graded toward 5G)	Included in investment plans for the modernization of this port and five others
2	Balboa Panama (Pacific)	~2.3 – 2.5 M TEUs (2024) capacity ~5 M	Pacific gateway to the Panama Canal Major global transshipment terminal linking ocean routes	Specialized CT / Transshipment / Multipurpose	5G	Included in the Panama Vision 2030 National Strategy, with multilateral financing for port and energy infrastructure upgrades through 2030
3	Cristobal (Colón) Panama (Caribbean)	~1.58 M TEUs (2024)	The Panama Canal's principal Caribbean hub Highly specialized in container transshipment	Specialized CT / Transshipment / Multipurpose	4G - 5G	Included in the Panama Vision 2030 National Strategy as part of the national energy transition plan, with investments in infrastructure and renewable energy through 2030
4	Lázaro Cárdenas Mexico (Pacific)	~2.2 M TEUs	Modern terminal on Mexico's Pacific coast Part of the Interoceanic Corridor Growing investment in logistics and industrial infrastructure	Specialized CT / Multipurpose	4G - 5G	* Included in investment plans for the modernization of this port and five others * Additional infrastructure invest-ment planned through 2030 un-der the CIIT frame-work
5	Puerto Cortés Honduras (Caribbean)	~600,000 TEUs	Central America's leading container terminal Key gateway to the United States Mixed publicprivate ownership structure	Specialized CT / Multipurpose	4G	The National Freight Logistics Plan (PNLOG, 2018) includes port and logistics infrastructure upgrades through 2030, although no portspecific investment figure has been disclosed

No. Port	Country	Annual TEU* throughput (2023–2024)	Significance (specialization, strategic location)	Port type	Generation	2030 outlook
6	LimónMoín Costa Rica (Caribbean)	300,000 TEUs (2020)	Specialized container terminal Caribbean gateway and export corridor for agricultural and industrial goods	Specialized CT / Containers	4G	Included in ECLACIDB studies on logistics needs and investment requirements through 2030; no portspecific investment figure is available
7	Santo Tomás de Castilla Guatemala (Caribbean)	Significant general cargo throughput; TEU figures not disclosed	Critical port in Guatemala's Caribbean region Handles diverse cargo and serves as a logistics corridor for regional trade	Multipurpose	3G	Identified in the ECLACIDB report as part of the regional port infrastructure investments required through 2030
8	Puerto Quetzal Guatemala (Pacific)	TEU figures not officially reported	Multipurpose Pacific port Logistics base for general cargo and container traffic on Guatemala's Pacific coast	Multipurpose	3G	Like Santo Tomás, identified by ECLACIDB as a key port for logistics investment through 2030
9	Veracruz Mexico (Caribbean/ Gulf)	1.65M metric tons Containers (TEU not specified)	Leading Gulf of Mexico port by cargo volume, with specialization in bulk and container cargo Extensive inland rail connections	Multipurpose	4G	Part of the national modernization package valued at MXN 296 billion Focus on cargo diversification, electrification, and energy efficiency
10	Altamira Mexico (Caribbean/ Gulf)	397,000 TEUs (2021)	Diversified Gulf terminal focused on containers and bulk cargo Mexico's secondlargest port complex by cargo volume	Multipurpose / Containers	4G	Port Development Master Program 2021–2025 (Altamira PMDP)

*TEU (Twenty-foot Equivalent Unit): Standard unit used to measure container throughput in maritime transport.

**Specialized CT (Specialized Container Terminal): Port terminal dedicated primarily to container handling operations.

Source: Authors based on official data.



Sonora, Mexico

Sustainability has become a core pillar of the strategy of the Panama Canal Authority (ACP), which has defined a roadmap based on three priorities: water management, energy efficiency, and emissions reduction. The urgency of this agenda became evident between 2023 and 2024, when severe droughts reduced water levels in Gatun Lake, forcing restrictions on both the number of daily transits and allowable vessel draft.⁸⁸ These constraints were equivalent to 32 days of operational inactivity and resulted in significant losses associated with congestion and route diversions.⁸⁹

Water scarcity also threatens the supply of drinking water for more than 50% of Panama's population, prompting structural initiatives such as the construction of the Río Indio reservoir, with an estimated investment of USD 1.6 billion.⁹⁰ This project forms part of a master plan exceeding USD 8.5 billion through 2030, of which at least USD 2 billion is allocated to sustainability and technological innovation.⁹¹

On the energy front, the Canal has advanced the optimization of locks and auxiliary fleets, while incorporating recirculation technologies to reduce water consumption. In line with its regional leadership in maritime sustainability, Panama is spearheading the development of a national roadmap for the production and use of green hydrogen in port logistics, targeting 500,000 tons annually by 2030.⁹² This strategy is linked to the development of new interoceanic energy corridors, including a pipeline for clean fuels.⁹³

Nevertheless, the Canal faces growing challenges arising from the intensification of extreme climate phenomena such as El Niño, which exacerbate water instability, increase operating costs, and affect the reliability of global shipping routes. These pressures are compounded by challenges related to environmental governance and ongoing debates regarding operational sovereignty.⁹⁴

Looking toward 2030 and 2050, the ACP has defined a long-term vision centered on five priorities:

- Climate and water resilience
- Energy efficiency
- Digitalization of operations
- Green fuels
- Intermodal expansion

The objective is to position the Canal as a carbon-neutral logistics hub, fully integrated into green bioceanic corridors and resilient to climate change. This approach not only ensures operational continuity but also positions the Canal as a benchmark for sustainable blue governance and a driver of structural transformation in regional logistics.

Particularly noteworthy is the Strategic Maritime and Port Development Plan of the Republic of Panama – Vision 2040, prepared by the Panama Maritime Authority with CAF technical cooperation. The plan establishes a comprehensive roadmap to strengthen the competitiveness, sustainability, and governance of Panama's maritime-port sector, with the goal of consolidating the country as a world-class logistics and maritime hub. It incorporates environmental protection, the sustainable management of coastal and marine resources, emissions mitigation, and the adoption of environmental best practices in ports. The implementation horizon extends through 2040 and contemplates an estimated investment of USD 270 billion.⁹⁵

At the same time, Mexico is advancing the development of the Interoceanic Corridor of the Isthmus of Tehuantepec (CIIT), one of the most ambitious logistics initiatives in Latin America. This multimodal platform, which links the Pacific and Atlantic oceans through the Caribbean, combines 1,200 kilometers of rail infrastructure, modernized ports, strategic industrial zones, pipelines, fiber-optic networks, and integrated logistics services. Its objective is to position southern-southeastern Mexico as a strategic hub for global trade, with the capacity to handle 1% of global maritime trade.⁹⁶

The CIIT represents a complementary alternative to the Panama Canal, offering key operational advantages because it does not depend on locks or water resources. It also has the potential to generate productive linkages that support the transition to a



low-carbon economy and promote greater territorial equity. The corridor is projected to reach a capacity of up to 13 million TEUs annually, consolidating its role as a resilient alternative to growing global logistical, climate, and geopolitical challenges. Its development is expected to ease congestion on saturated routes, diversify logistics chains, and generate more than 500,000 formal jobs in historically underserved territories. Benefits are expected to extend to strategic sectors such as agribusiness, advanced manufacturing, logistics, renewable energy, semiconductors, automotive production, and technology services.

Within this framework, port modernization is advancing in Salina Cruz (Pacific) and Coatzacoalcos (Gulf of Mexico), with capacity to handle up to 1.5 million TEUs and 5,000 vehicles per week by 2030.⁹⁷ These upgrades include clean industrial zones, sustainable energy corridors, and innovation platforms. Estimated investment in the first phase of the CIIT exceeds USD 1.1 billion, while additional rounds of public and private investment are planned to consolidate its logistics, energy, and technology components during a second phase.⁹⁸

The CIIT is fully aligned with SBE principles by creating tangible opportunities for the productive transformation of Mexico's southern coastline through investments in green infrastructure, clean industrial zones, sustainable logistics, technical education, local innovation, energy security, and environmental protection. The project's management under the Ministry of the Navy reinforces governance and its long-term vision as a state-led initiative. Ultimately, the CIIT does more than connect the global ocean: it transforms regions, links value chains, and repositions Mexico as a key logistics actor through a framework of equity, sustainability, and global competitiveness.

In line with efforts to advance toward a low-carbon economy, marine renewable energy is beginning to emerge as a strategic dimension in Mexico and Central America, although it remains at an early stage of development. Offshore wind energy, in particular, represents a key opportunity to diversify energy matrices, reduce emissions, and promote sustainable economic growth in coastal regions.

Mexico stands out for its extraordinary technical potential. According to World Bank estimates, the country has a theoretical offshore wind capacity of up to 1,600 GW (1.6 TW), placing it among the eight regions with the highest technical potential worldwide.⁹⁹ Sectoral and academic studies have identified priority areas in the Gulf of Mexico, the Gulf of Tehuantepec, the Yucatán Peninsula, and the Baja California coast based on favorable wind conditions and water depths.¹⁰⁰ Nevertheless, Mexico does not yet have any installed offshore wind farms and continues to face institutional and regulatory challenges to advance its development. Even so, within the framework of the National Energy Plan¹⁰¹ and the country's carbon-neutrality goals, interest is growing among both public and private actors in incorporating this technology into energy planning for 2030 and 2050.¹⁰²

Costa Rica leads the regional agenda in Central America. Since 2022, it has been working with the Central American Bank for Economic Integration (CABEI) and the Republic of Korea on a technical, economic, and environmental feasibility study for offshore wind farms on the Northern Pacific coast. Aligned with the country's National Decarbonization Plan, this initiative has identified a preliminary potential of up to 14.4 GW in areas with favorable wind conditions, bathymetry, and connectivity.¹⁰³ Costa Rica aims to achieve a 100% renewable energy matrix by mid-century, and offshore wind forms part of that vision.

By contrast, Panama, Honduras, El Salvador, and Guatemala still lack robust technical studies on the potential of this energy source. In Panama, the National Energy Plan 2015–2050¹⁰⁴ explicitly recognizes the lack of information regarding offshore wind potential and identifies resource characterization as a priority. A preliminary study by the Technological University of Panama identified favorable conditions in the Costa Arriba de Colón region, with wind speeds ranging from 5.1 to 7.8 m/s, although without quantitative estimates of installable capacity in GW.¹⁰⁵

The technical, regulatory, and planning gaps that persist across most Central American countries represent both a challenge and an opportunity. The region possesses favorable conditions to advance regional cooperation, develop enabling regulatory frameworks, and mobilize climate investments aimed at incorporating this clean, secure, and resilient energy source into blue development agendas through 2050.

Progress toward a Sustainable Blue Economy is also reflected in the strengthening of institutional and regulatory frameworks. In recent years, several countries have initiated key processes to integrate environmental, productive, and ocean policies, aligned with international commitments and a vision of territorial sustainability. These instruments not only lay the foundations for ocean governance but also mark important milestones in the transition toward resilient, inclusive, and regenerative economic models.

Panama, Costa Rica, and Mexico are leading this process through the formulation and adoption of specific national Sustainable Blue Economy strategies. Panama approved its National Oceans Policy (2021),¹⁰⁶ which provides an overarching framework for the sustainable use of marine resources. In 2020, Costa Rica adopted its Blue Recovery Strategy in Response to COVID-19,¹⁰⁷ one of the first initiatives of its kind in the Americas, directly linking economic recovery with conservation and inclusive coastal development. Mexico, for its part, has formalized its Sustainable Ocean Plan¹⁰⁸ aligned with the commitments of the High-Level Panel for a Sustainable Ocean Economy (Ocean Panel). This framework is complemented by two key instruments: the National Marine Biodiversity Strategy,¹⁰⁹ aligned with the Kunming-Montreal Global Biodiversity Framework, and the Strategy for Implementing a Sustainable Ocean Economy,¹¹⁰ which proposes an intersectoral approach centered on conservation, production, and ocean prosperity.

This Mexican strategy brings together priority areas such as the conservation and sustainable use of marine biodiversity, including areas beyond national jurisdiction; the strengthening of scientific and statistical information systems; interinstitutional and

cross-sector coordination; and the promotion of key sectors such as sustainable tourism and fisheries, understood as drivers of development compatible with environmental protection.

Guatemala, El Salvador, and Honduras, meanwhile, have made significant progress in updating sector-specific regulatory frameworks, particularly in areas such as artisanal fisheries, coastal planning, mangrove restoration, environmental monitoring, and marine waste management.¹¹¹ Although these countries do not yet have comprehensive national SBE strategies, there is clear evidence of a growing political commitment to advancing more sustainable productive models.

At the regional level, all three countries actively participate in the Regional Blue Growth Strategy (ERCA) of the Central American Integration System (SICA),¹¹² which seeks to strengthen ocean governance, promote regional innovation, and improve living conditions in coastal communities through technical cooperation, regional planning, and multisectoral coordination. In this context, specialized bodies such as the Central American Fisheries and Aquaculture Organization (OSPESCA) and the Central American Maritime Transport Commission (COCATRAM), both affiliated with SICA, play a key role in institutionalizing the Sustainable Blue Economy across the region.

These platforms have promoted integrated marine and coastal spatial planning processes, strengthened logistics and port connectivity, encouraged responsible fisheries, and supported the development of shared governance arrangements for common ocean resources. Taken together, these efforts lay the groundwork for an orderly transition toward a regionally focused Sustainable Blue Economy capable of mobilizing investment, closing institutional gaps, and strengthening technical capacities in a coordinated manner across Mesoamerica.

Table 6.
Offshore wind potential in Mexico and Central America (GW)

Country	Estimated technical potential (GW)	Current status of development	Ongoing initiatives	Approximate total electricity demand (GWh) (2020–2022)
Mexico	1,600 within the EEZ	No installed offshore wind farms; advanced technical studies completed; significant potential identified	Identification of potential development zones in the Gulf of Mexico, Tehuantepec, Yucatán, and Baja California	340,000
Costa Rica	14.4	Studies underway with support from CABI and Korea; priority development zones identified	Offshore wind feasibility project in the North Pacific (Phase 2)	11,600
Panama	Not available	Preliminary studies; favorable wind speeds identified; potential not quantified in GW	Preliminary study in Costa Arriba de Colón conducted by UTP	10,800
Honduras	Not available	No official studies available	No data	8,300
El Salvador	Not available	No official studies available	No data	6,400
Guatemala	Not available	No official studies available	No data	12,300

Source: Authors based on estimated official data.

Table 7.
Institutional frameworks for the Sustainable Blue Economy (SBE) in Mexico and Central America

Country/Region	Instruments / strategies	Key components
Panama	National Ocean Policy (2021)	Sustainable use of marine resources
Costa Rica	PostCOVID19 Blue Recovery Strategy (2020)	Economic recovery, conservation, and inclusive coastal development
Mexico	Sustainable Ocean Plan	Conservation, production, ocean prosperity, information systems, and crosssectoral coordination
	National Marine Biodiversity Strategy	
	Sustainable Ocean Economy Implementation Strategy	
El Salvador	Updated sectoral regulatory frameworks	Artisanal fisheries, environmental monitoring, waste management, and community participation
	National Marine Litter Action Plan	
Guatemala	Updated regulatory frameworks Local Sustainable Use Plans (PLAS)	Coastal planning, mangrove restoration, and sustainable resource use
Honduras	Updated regulatory frameworks Conservation initiatives	Coastal ecosystems, coral reefs, marine fauna
Central America (regional)	Regional Blue Growth Strategy (ERCA) Central American Fisheries and Aquaculture Organization (OSPECA) Central American Commission for Maritime Transport (COCATRAM)	Marine governance, technical cooperation, regional planning, and logistics connectivity

Source: Authors.

In El Salvador, the implementation of Local Sustainable Use Plans (PLAS) stands out. These plans regulate the responsible use of marine and coastal resources, particularly mangroves, in areas such as the Jaltepeque Estuary and Jiquilisco Bay.¹¹³ Guatemala is advancing the formulation of its National Marine Litter Action Plan,¹¹⁴ focused on reducing coastal waste, strengthening regulatory and institutional frameworks, and promoting community participation in preventing marine pollution. Honduras, for its part, has launched conservation initiatives in key areas such as Cayos Cochinos and the Bay Islands,¹¹⁵ focused on protecting coral reefs, marine fauna, and sensitive coastal ecosystems.¹¹⁶ The region's commitment to marine conservation and sustainability is also reflected in the expansion of its MPAs (Table 8) and in the strengthening of ecosystem-based management instruments. Mexico, Costa Rica, and Panama have made significant progress through the consolidation of fishing closure and licensing frameworks, the development of community-based blue tourism projects, and local capacity building in aquaculture, environmental monitoring, and traceability. These efforts are complemented by emerging initiatives in biotechnology and blue carbon, such as those being promoted by Guatemala¹¹⁷ and Mexico,¹¹⁸ which are opening new pathways for the sustainable valorization of marine natural capital.

Taken together, Mexico and Central America currently protect between 22% and 24% of their marine areas under some form of formal designation, bringing the subregion closer to the global target of protecting 30% by 2030. The region is home to approximately 1.6 million hectares of mangroves and extensive seagrass beds—key ecosystems that store up to 1 billion tons of blue carbon and play a critical role in climate change mitigation.¹¹⁹ More than 3 million people are estimated to depend directly or indirectly on ocean-related activities,¹²⁰ and up to USD 3 billion in blue finance could be mobilized over the next decade if enabling frameworks and innovative financing instruments are successfully consolidated.¹²¹

Costa Rica stands out as a regional leader, having increased its marine protected area coverage from 2.7% in 2020 to 31% in 2021 following the expansion of key areas such as Cocos Island and the Submarine Seamounts.¹²² This significant step forward has positioned the country as

a regional leader in marine conservation and sustainable tourism. Nevertheless, the challenge lies in ensuring the effective management of these areas through sustainable financing, strengthened institutional capacities, and robust monitoring mechanisms.¹²³

Costa Rica also plays a central role in the Eastern Tropical Pacific Marine Corridor (CMAR),¹²⁴ together with Colombia, Ecuador, and Panama. This transboundary initiative promotes ecological connectivity, collaborative monitoring, and new financing mechanisms such as the Project Finance for Permanence (PFP) for the CMAR.¹²⁵ Although its transformative impact is expected to materialize over the medium term, it represents a valuable model of regional cooperation with lessons that extend well beyond the region.

Mexico has expanded its MPA network and advanced the implementation of Marine Ecological Zoning (OEM) as a spatial planning instrument. The country currently has 37 protected marine and coastal areas covering approximately 649,587 km², equivalent to 23.8% of its national maritime area.¹²⁶ Among them is the Revillagigedo National Park,¹²⁷ one of the largest MPAs in the Tropical Eastern Pacific. Panama, meanwhile, has expanded Coiba National Park and established the Cordillera de Coiba Marine Protected Area,¹²⁸ further strengthening its alignment with global marine biodiversity targets.

In the same vein, Mexico recently introduced the Marine Prosperity Strategy, promoted by the Ministry of Environment and Natural Resources (SEMARNAT) as part of the National Environmental Restoration Program 2025–2030 (PNRA). The strategy represents an innovative model that integrates ecological restoration with the social and economic well-being of coastal communities.¹²⁹ Through the creation of Marine Prosperity Areas, it seeks to move beyond traditional conservation approaches by promoting ecosystem recovery processes alongside sustainable productive opportunities, local capacity building, and participatory co-management mechanisms.¹³⁰ Its approach recognizes that the health of marine ecosystems is inseparable from human prosperity, thereby establishing a new paradigm for coastal development in which marine conservation becomes a driver of prosperity and territorial resilience.¹³¹



Nicoya Gulf, Costa Rica

These conservation efforts are closely linked to the development of sustainable marine and coastal tourism, which has emerged as a key driver of economic dynamism, social inclusion, and the valorization of natural capital in Mexico and Central America. Conservation and sustainable tourism converge within the principles of the Sustainable Blue Economy insofar as they help mobilize investment, generate local employment, and strengthen the resilience of coastal communities to the impacts of climate change.

Mexico has taken significant steps toward this integration through the 2023–2030 Strategy for Sustainable Ocean-Based Tourism Activities (EATSBO), promoted by the Ministry of Tourism,¹³² which incorporates actions related to spatial planning, technical training, and the conservation of marine ecosystems. Through the Interministerial Commission for the Sustainable Management of Seas and Coasts (CIMARES), Mexico is also promoting cross-sectoral plans in which sustainable tourism serves as a catalyst for coastal development, in synergy with the protection of MPAs and ecological restoration.¹³³

Notable examples such as the Cancun Underwater Museum of Art (MUSA) and the community-based ecotourism model implemented in Cabo Pulmo National Park illustrate how the active conservation of protected marine areas can foster new forms of responsible tourism.¹³⁴ Initiatives such as the Shark Project in the Gulf of California, led by women fishers who have transitioned into marine tourism guides, further reinforce this synergy by combining economic empowerment with the protection of emblematic species.¹³⁵

In Central America, the link between sustainable tourism and marine conservation has translated into local management models and subregional integration initiatives. The GEM-PACA Project,¹³⁶ with support from UNDP, has enabled the implementation of community-based sustainable marine and coastal tourism pilots in Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama, linking territorial planning, social resilience, and MPA governance.

Through its Surf City strategy,¹³⁷ El Salvador has generated employment in vulnerable areas by

promoting surf tourism and investing in tourism services and environmental protection. Honduras has advanced destinations such as Tela¹³⁸ and Roatán,¹³⁹ where marine tourism is combined with coral reef conservation and coastal wildlife restoration initiatives.

In parallel, the Mesoamerican Reef Fund (MAR Fund) has channeled resources to strengthen nature-based tourism and the community co-management of MPAs in Belize, Guatemala, Honduras, and southern Mexico, reinforcing positive impacts on biodiversity and livelihoods.¹⁴⁰

At the regional governance level, policies such as Mexico's National Policy for Seas and Coasts¹⁴¹ and multilateral mechanisms such as the commitments adopted under the Sustainable Pacific Alliance are helping consolidate an integrated vision in which sustainable marine and coastal tourism and MPAs are understood as complementary pillars of the blue development strategy. This convergence of conservation, tourism, social inclusion, and climate finance represents a concrete opportunity for Mexico and Central America to advance toward more resilient, productive, and sustainable models by 2030.

However, several risks threaten the sustainability of tourism development. These include climate change, with extreme events such as coastal erosion and mass coral bleaching directly affecting tourism infrastructure and essential ecosystem services. In April 2025, the fourth marine heatwave caused widespread damage to the Mesoamerican Reef System, compromising the livelihoods of local communities and the natural foundation of tourism in Mexico, Belize, Guatemala, and Honduras. This is compounded by growing beach contamination from bacteria and wastewater, as evidenced by health alerts issued for six Mexican beaches during the same year.¹⁴² Likewise, recent analyses conducted in the state of Quintana Roo show an 11.6% contraction in gross local product associated with coastal tourism, attributed to the impacts of sargassum, particularly in highly dependent sectors such as accommodation, trade, and transportation services.¹⁴³ This situation degrades environmental quality, increases public health risks, and reduces the competitiveness of tourism destinations.¹⁴⁴

Table 8.
Marine Protected Areas (MPAs) in Mesoamerica

Country	MPA coverage (%)	Hectáreas protegidas marinas (estimadas)	Avances clave / participación regional
Mexico	23.8%	649,587 km²	Marine spatial planning Revillagigedo National Park Biotechnology and blue carbon
Costa Rica	31%	≈160,000 km²	Expansion of Cocos Island and the Seamounts Leadership in sustainable tourism CMAR and PFP
Panama	≈30%	≈98,000 km²	Expansion of Coiba National Park Creation of the Cordillera de Coiba Marine Protected Area Participation in CMAR
Guatemala	No data	No data	National Marine Litter Action Plan Emerging blue biotechnology
El Salvador	No data	No data	Local Sustainable Use Plans (PLAS) Mangrove conservation in Jaltepeque and Jiquilisco
Honduras	No data	No data	Initiatives in Cayos Cochinos (Hog Islands) and the Bay Islands Protection of coral reefs and marine fauna

Source: Authors.

Table 9.
Integrated marine and coastal tourism management and MPAs in Mexico and Central America

Country	Initiative/program	Type of intervention	Link to MPA
Mexico	Ocean-Based Sustainable Tourism Activities Strategy 2023–2030	National public policy	Yes, in priority coastal destinations
	Cancún Underwater Museum of Art (MUSA)	Underwater cultural tourism	Yes, reduces pressure on natural reefs
	Cabo Pulmo National Park	Community-based ecotourism	Yes, supports coral conservation
	Sea of Cortez Shark Project	Economic diversification and ecotourism	Yes, supports the protection of marine species
El Salvador	Surf City	Sustainable surf tourism	Yes, supports the protection of coastal ecosystems
Guatemala	Integration of port development and coastal sustainability	Integrated port-coast management	Yes, supports coastal conservation
Honduras	Sustainable tourism in Tela and Roatán	Marine conservation tourism	Yes, supports the conservation of coral reefs and marine fauna
Central America (regional)	GEM-PACA Project (UNDP)	Subregional pilot models	Yes, integrated with marine spatial planning
Mesoamerica (regional)	MAR Fund – Nature-based tourism and co-management of MPAs	Community strengthening and co-management	Yes, through MPA co-management

Source: Authors.

Fragmented governance and institutional weaknesses in the management of tourism and marine-coastal territories hinder the effective implementation of sustainable public policies, particularly in contexts characterized by strong sectoral competition or limited local technical capacity.¹⁴⁵

In response to these challenges, organizations such as the Ocean Panel emphasize the urgency of adopting comprehensive measures that include NbS, adequate sanitation systems, regulation of mass tourism, and participatory governance mechanisms that integrate local and Indigenous communities. Only through such measures will it be possible to consolidate truly regenerative, resilient, and equitable marine and coastal tourism across the region.¹⁴⁶

From a productive development perspective, the Sustainable Blue Economy is driving the emergence and consolidation of innovative models, community-based business initiatives, and enterprises linked to the responsible use of marine and coastal natural capital. This dynamism stems largely from the impetus provided by regional public policies such as SICA's Regional Blue Growth Strategy and from growing collaboration among governments, multilateral organizations, research centers, and private-sector actors.¹⁴⁷

Costa Rica has positioned itself as a regional benchmark in the design and implementation of comprehensive initiatives that combine environmental sustainability with inclusive economic development. The Transforma-Innova program,¹⁴⁸ led by the Ministry of Agriculture and Livestock and the Ministry of Environment and Energy and implemented with support from UNDP, GIZ, CRUSA, and other partners, promotes the strengthening of sustainable fisheries and aquaculture value chains through a climate resilience and marine ecosystem conservation approach. The initiative has contributed to marine spatial planning, mangrove protection, and the creation of decent livelihoods in traditionally marginalized coastal communities.^{149,150} Complementing these efforts, the Costa Rican Sportfishing Federation (FECOP) has successfully promoted a responsible sportfishing tourism model that accounts for more than 13% of the country's tourism revenue and generates

formal employment for more than 30,000 people, linking the conservation of pelagic species with local development.¹⁵¹

Mexico, meanwhile, has made notable progress in the marine bioeconomy, particularly through the use of macroalgae for the production of biofertilizers, cosmetic additives, and bioplastics. Marine biotechnology projects using cyanobacteria and ocean resources for biofuel production have also been developed, integrating technological innovation, environmental sustainability, and the generation of domestic value added.¹⁵² These developments are supported by emerging regulatory instruments such as the Agricultural Bioeconomy Sector Strategy (2023), which promotes the use of biological resources to develop sustainable and inclusive value chains.¹⁵³

In Panama, the approval of the National Oceans Policy (2023) represents an important institutional milestone for structuring the Sustainable Blue Economy. The policy establishes a multisectoral roadmap through 2030 that integrates responsible artisanal fisheries, sustainable marine tourism, biotechnology, sustainable port logistics, and the conservation of key ecosystems. The participatory approach adopted in its design incorporates the voices of coastal communities, Indigenous peoples, women, and youth, strengthening the pillars of governance, equity, and sustainability.¹⁵⁴

Elsewhere in Central America, progress is evident primarily in community-based aquaculture, artisanal fisheries, and coastal ecotourism, with particular emphasis on technical capacity building, cooperative organization, and integration into value chains. In Guatemala and El Salvador, support programs for small-scale shrimp producers have been implemented through public technical assistance and access to regional financing. Honduras, meanwhile, has consolidated its leadership in intensive shrimp farming in the Gulf of Fonseca, combining industrial models with community-based collaborative arrangements.¹⁵⁵



With regard to the development of blue carbon markets, the region's mangrove and seagrass ecosystems represent a strategic opportunity. Their carbon sequestration capacity exceeds that of many terrestrial forests, positioning them as key assets for financing coastal restoration, generating community income, and meeting climate targets.¹⁵⁶

Panama is leading institutional progress through its Roadmap for a National Carbon Market, which includes blue carbon as an eligible sector and is advancing the development of MRV standards specifically for mangroves and seagrass beds.^{157,158} In parallel, the PROCARIBE+ project is conducting carbon stock assessments in pilot areas of the Panamanian Caribbean, laying the groundwork for future financing mechanisms.¹⁵⁹

In Mexico and Belize, pilot initiatives led by The Nature Conservancy and the International Finance Corporation (IFC) are exploring mangrove-based carbon credits, incorporating the concept of coastal resilience as an additional value component within emerging voluntary markets.¹⁶⁰ In Honduras and El Salvador, mangrove restoration programs are being implemented with support from international cooperation agencies, although formal carbon credit commercialization schemes have yet to be established.¹⁶¹

At the same time, Ocean Conservancy has been promoting, at both the programmatic and regulatory levels, the integration of ocean-based solutions into NDCs and the adoption of high-quality principles for blue carbon markets encompassing mangroves, salt marshes, and seagrass beds. These efforts are helping create the enabling conditions for the development of future carbon credit projects across the region.^{162,163,164}

Despite their considerable potential, blue carbon markets in the region remain at an early stage of development. The primary challenge is moving from technical pilots to scalable, financially viable models with the effective participation of local communities. As noted by the Ocean Panel (2023), their consolidation can strengthen Sustainable Blue Economy models by diversifying income sources and promoting the active conservation of strategic marine and coastal ecosystems.

In conclusion, Mexico and Central America have made notable progress in policy formulation, the implementation of flagship projects, and regional cooperation. However, structural challenges continue to limit the subregion's transformative potential. Bottlenecks persist in institutional coordination, regulatory harmonization, and the availability of specialized financing, alongside critical gaps in technical capacities, participatory governance, and coastal infrastructure, particularly in fisheries logistics, port connectivity, and cold-chain systems. These challenges are compounded by growing pressures on marine and coastal ecosystems arising from pollution, overexploitation, and unplanned urban development.

At the same time, these challenges not only underscore the urgency of present needs but also clearly define the strategic opportunities of the future. The subregion possesses a unique combination of natural, cultural, and institutional assets that can be mobilized to support a regenerative, resilient, and inclusive development model. Emerging sectors such as marine biotechnology, sustainable aquaculture, blue carbon markets, conservation tourism, marine renewable energy, and decarbonized maritime transport stand out in particular. At the same time, critical infrastructure such as the Panama Canal and CIIT positions Mesoamerica as a global logistics hub capable of linking trade flows, industrial zones, and innovation corridors around a shared vision of ocean sustainability.

Table 10.
Productive approaches for Sustainable Blue Economy development in Mexico and Central America

Country	Productive approach	Institutional framework / collaborative instruments	SBE models / entrepreneurship / collaborative arrangements
Costa Rica	Sustainable fisheries and aquaculture Marine spatial planning	Ministry of Environment and Energy (MINAIE), Ministry of Agriculture and Livestock (MAG), INCOPESCA, and TRANSFORMA-INNOVA	Organized coastal communities strengthened through sustainable aquaculture technologies Certification Spatial planning to conserve mangroves and marine ecosystems
México	Marine bioeconomy: macroalgae and microalgae biotechnology	Federal government (MAGRAMA/CMISA), with support from the Bio-inputs Platform Applied research centers	Enterprises processing cyanobacteria into biofuels and fertilizers Entrepreneurial models using macroalgae as agricultural bio-inputs, supported by public institutions
Panamá	Integrated blue economy: responsible fisheries, tourism, biotechnology, and logistics	Ministry of Environment (MiAmbiente) and the National Ocean Policy Commission National Ocean Policy Framework 2023–2030 (PNO)	Participatory projects in sustainable marine tourism, connectivity corridors, blue carbon pilots, and community enterprises with an inclusion and gender focus
Guatemala	Artisanal fisheries	Technical assistance from the Ministry of Agriculture	Artisanal fisheries
Honduras	Industrial shrimp farming and artisanal fisheries	PRONAPAC, SAG	Mixed enterprises and local cooperatives in the Gulf of Fonseca
El Salvador	Cooperative value chains	Technical assistance from FAO and SICA	Producer networks and local marketing channels

Source: Authors.

South America: North Hub

The northern subregion of South America, comprising Colombia, Venezuela, Ecuador, and Peru, encompasses within its marine and coastal areas one of the most strategic spaces in Latin America for advancing the Sustainable Blue Economy. Its importance stems from a unique combination of geographic, ecological, demographic, and economic factors that position it as a key hub of biodiversity, productivity, and ocean governance. Its more than 10,600 kilometers of coastline are home to high-value ecosystems, including mangroves, coral reefs, upwelling zones, coastal deserts, and dry forests, shaped by currents such as the Humboldt Current and climate phenomena such as El Niño.¹⁶⁵ The coastal population represents a substantial share of the total population: in Peru, nearly 59% of the population lives along the coast;¹⁶⁶ in Ecuador, more than 50%;¹⁶⁷ and in Venezuela, 73% live within 100 km of the coastline¹⁶⁸. Colombia, with coastlines on both the Pacific Ocean and the Caribbean Sea, possesses one of the continent's greatest levels of marine diversity.¹⁶⁹ These areas concentrate strategic sectors such as fisheries, maritime trade, export-oriented agribusiness, coastal tourism, and port infrastructure. At the same time, they face structural challenges, including high territorial inequality, pressure on ecosystems, limited coverage of basic services, and growing vulnerability to climate change.

The subregion shows varying levels of progress in the adoption and implementation of the Sustainable Blue Economy. Differences in institutional maturity, sectoral infrastructure, and levels of cross-sector coordination largely explain the observed heterogeneity. Nevertheless, there is growing convergence around the valorization of marine and coastal natural capital as a strategic pillar for inclusive, resilient, and territorially balanced development.

Ecuador and Peru have a well-established track record in maritime sectors such as industrial and artisanal fisheries, maritime transport, port development, coastal tourism, the designation of MPAs, and marine-coastal

spatial planning. Both countries stand out for their experience in marine-coastal spatial planning through instruments such as the National Oceanic and Coastal Policies (PNOC)¹⁷⁰ and the National Aquaculture Policy to 2030,¹⁷¹ respectively. However, while these advances are significant, they are not always embedded within robust institutional structures, limiting their alignment with an integrated vision of sustainable ocean management.¹⁷²

In Ecuador, the mainstreaming of the SBE into sectoral policies has fostered sustainable models for artisanal fisheries, blue tourism, and marine biotechnology exploration. Peru, meanwhile, maintains its regional leadership in fisheries exports, has strengthened its aquaculture regulations, and has begun channeling investments into marine conservation projects. In 2024, Peru reinforced its position as the regional leader in fisheries exports, reaching a record USD 3.587 billion, driven primarily by increases of 78.4% in fishmeal exports and 184% in fish oil exports.¹⁷³

In 2023, Ecuador implemented an innovative debt-for-nature swap that is expected to generate approximately USD 800 million in fiscal savings through 2035, of which USD 400 million will be allocated to the sustainable management of marine and coastal areas.¹⁷⁴

Colombia and Venezuela have increased their participation in debates and processes related to the Sustainable Blue Economy over the past decade. This shift has been driven by academia, science, and public policy. In Colombia, notable developments include marine spatial planning tools developed within CMAR's framework and efforts to integrate marine and coastal ecosystem services into climate policy and territorial development instruments.¹⁷⁵

Colombia is also advancing the development of an integrated model based on a bioceanic SBE strategy that leverages its dual connectivity to the Caribbean and Pacific basins. Initiatives such as the Blue Manifesto 2030,¹⁷⁶ the formulation of the National Ocean Policy,¹⁷⁷

and the Bioceanic Forum¹⁷⁸ incorporate sustainability criteria for the development of resilient coastal infrastructure, integrated management of marine and coastal areas, and the creation of blue jobs.

Although still at an early stage, Venezuela has begun laying the technical and institutional foundations for the development of the Sustainable Blue Economy through advances in coastal spatial planning, fisheries sector recovery, and the assessment of emerging sectors such as mariculture and biotechnology. The central instrument guiding this strategy is the Coastal Zone Planning and Management Plan (POGIZC).¹⁷⁹ In the fisheries sector, Venezuela has shown signs of recovery according to official data: in 2023, total production from capture fisheries and aquaculture reached 244,170 tons, representing growth of 13% compared to the previous year.¹⁸⁰

In the area of subregional cooperation, Colombia and Ecuador share the Eastern Equatorial Pacific basin, giving them advantages in developing joint initiatives related to sustainable maritime transport, resilient port infrastructure, low-emission maritime trade, and sustainable tourism based on whale watching and the protection of endemic species. Realizing the full value of these shared assets requires investments in tourism infrastructure that incorporates sustainability criteria, the strengthening of value chains in coastal communities, and access to innovative financing mechanisms such as blue bonds and debt-for-nature swaps—tools that CAF¹⁸¹ has already begun structuring in Ecuador.

Port development in the northern subregion of South America constitutes a critical pillar of regional and global connectivity. The region's logistical dynamism is reflected in the combination of operational capacity, technological modernization, and expansion plans through 2030, including emerging ports such as Chancay in Peru, Posorja and Manta in Ecuador, and Puerto Antioquia in Colombia.

In Peru, the Port of Callao stands out, handling approximately 2.65 million TEUs in 2023 and serving as the dominant port hub of the southern Andean Pacific. It is currently being transformed into a Smart Port through advanced automation.¹⁸² Recently inaugurated, the Port of Chancay, with investments ranging from USD 1.3 billion to USD 3.5 billion, incorporates fifth-generation infrastructure and has the potential to become an intercontinental mega-port with an industrial and ecological zone.^{183, 184} On a smaller but strategically important scale, the Port of Paita remains the country's second-largest container port (approximately 333,000 TEUs in 2022) and is projected to benefit from expanded intermodal connectivity.

In Ecuador, investments have been prioritized in the ports of Posorja and Manta to improve logistics efficiency, integrate clean technologies, and comply with international sustainability standards. Posorja, which handled more than 955,000 TEUs in 2024, leads the country in logistics efficiency and development, with expansion plans that include high-capacity berths and sustainable logistics zones. Manta, meanwhile, continues to strengthen its profile as a multipurpose port through a second phase of expansion focused on dredging improvements, digitalization, and increased berthing capacity.¹⁸⁵

Colombia has key port infrastructure in Cartagena, Buenaventura, and Tumaco. Cartagena handled more than 3 million TEUs in 2023, consolidating its position as one of the most important hubs in the Colombian Caribbean. Buenaventura, with more than 1 million TEUs annually, is pursuing rail integration and cargo optimization projects. Tumaco, although smaller in volume, remains regionally important because of its role in supplying the southern Pacific. Energy efficiency, digitalization, waste management, and the integration of sustainable practices are essential conditions for reducing the environmental footprint of maritime trade and improving port competitiveness in line with the frameworks promoted by the WEF and OECD.¹⁸⁶



Santa Marta, Colombia

Table 11.
Logistics and port infrastructure in Northern South America,
classified by annual TEU throughput

No.	Port	Country	Annual TEU* throughput (2022)	Significance (specialization, strategic location)	Port type	Generation	2030 outlook
1	Callao	Peru	≈2.6M TEUs (2023)	Leading port on the southern Andean Pacific coast	Containers / Multipurpose	4G–5G	Smart port with automation and expansion plans
2	Cartagena	Colombia	≈3M TEUs (2023)	<i>Colombia's principal Caribbean hub</i>	Multipurpose	4G	Free trade zone and logistics digitalization
3	Buenaventura	Colombia	≈1M TEUs (2023)	Key port on Colombia's Pacific coast	Multipurpose	4G	Concession and rail integration
4	Guayaquil	Ecuador	≈900,000 TEUs (2023)	Handles nearly 50% of Ecuador's TEU throughput	Containers / Multipurpose	4G	Modernization through concession-backed investment
5	Posorja	Ecuador	955,728 TEUs (2024)	The country's most efficient port (among the top three in LAC)	Containers / Transshipment	5G	Expansion to 700 m of berth length, with capacity reaching 1.4 M TEUs
6	Manta	Ecuador	Not available	Leading regional terminal	Multipurpose / fishing	3G–4G	Phase II: dredging, new berth, and RTG cranes
7	Chancay	Peru	Not available	Deep-water port backed by China–Peru investment	Containers / Megahub	5G	Smart terminal with logistics and industrial zones
8	Puerto Antioquia	Colombia	Not in operation	New multipurpose port in Urabá	Multipurpose	5G (projected)	USD 725 M investment; Phase I scheduled to open in 2025
9	Puerto Cabello	Venezuela	Not available	Historic port on Venezuela's Caribbean coast	Multipurpose	3G–4G	No active projects
10	La Guaira	Venezuela	Not available	Key port near Caracas	Multipurpose	3G	No recent initiatives identified
11	Paita	Peru	≈333,000 TEUs (2022)	The country's second-largest container port	Multipurpose	4G	Expansion and intermodal integration
12	Bolívar	Ecuador	≈187,000 TEUs (2022)	Important secondary port	Multipurpose	3G–4G	Infrastructure upgrades currently underway

Source: Authors based on official data.



Venezuela, meanwhile, presents a more heterogeneous picture. Although the ports of Puerto Cabello and La Guaira have significant historical infrastructure, they face structural and operational challenges, with limited publicly available information on short- and medium-term port modernization or sustainability projects. Their current logistics role remains constrained by macroeconomic and regulatory limitations.

Taken together, the region exhibits uneven progress. While some ports are advancing toward automation and the energy transition through investments in clean energy, shore power, environmental management, and process digitalization, others require structural recovery plans. Alignment with Sustainable Blue Economy policies will be critical to achieving resilient, competitive, and low-carbon port development by 2030.

In terms of offshore wind energy, the northern subregion of South America has outstanding technical potential for development, with estimated capacities in countries such as Colombia, Peru, and Venezuela far exceeding their current electricity demand. This positions them as potential net exporters of energy and green energy carriers by 2030 and 2050. However, the level of institutional, regulatory, and investment progress varies significantly across countries, revealing a gap between theoretical potential and its translation into operational infrastructure.

In Colombia, the technical potential identified in the Offshore Wind Energy Roadmap, developed by the Ministry of Mines and Energy, the Mining and Energy Planning Unit (UPME), and the World Bank's ESMAP,¹⁸⁷ reaches 109 GW in the Caribbean region. This potential is equivalent to more than ten times the country's electricity demand in 2024 (82,084.9 GWh).¹⁸⁸ The National Strategy has been translated into a pioneering regulatory framework in Latin America, including a competitive process for allocating maritime areas for offshore wind development, led by the General Maritime Directorate (DIMAR) and the National Hydrocarbons Agency (ANH).¹⁸⁹

Under the first allocation round, strategically located areas have been proposed on the Colombian Caribbean continental shelf, prioritizing zones with high average wind speeds (>9 m/s), limited conflict with existing uses, and proximity to grid interconnection points. Among the most prominent are the areas north of La Guajira, Cartagena, and the Gulf of Morrosquillo, which, in addition to their technical viability, have access to existing ports and offshore logistics infrastructure. This approach responds not only to energy efficiency considerations but also to the geopolitical objective of positioning Colombia as a regional hub for marine renewable energy and an emerging player in the production and export of green hydrogen.

Peru, meanwhile, has an estimated technical potential of 347 GW (of which 315 GW corresponds to floating technology and 32–33 GW to fixed-bottom technology), according to ESMAP/World Bank estimates.¹⁹⁰ However, the country does not yet have a roadmap or a specific regulatory framework for offshore wind energy, limiting its ability to attract investment and structure pilot projects. Energy planning remains focused on diversifying the land-based renewable energy mix, although the scale of the offshore resource places Peru in a strategic position for future investment, particularly along its southern coast, where wind speeds exceed 10 m/s.

In Venezuela, technical potential reaches 381 GW (115 GW fixed-bottom and 266 GW floating),¹⁹¹ a capacity that could transform the national energy matrix if harnessed. However, the absence of a regulatory framework and specific public policies for the development of marine renewable energy, combined with structural constraints in the country's electricity system, keeps this potential largely theoretical. The key policy challenge lies in modernizing the electricity sector, strengthening institutions, and creating opportunities for international cooperation to facilitate technology transfer and financing.



Los Roques, Venezuela

Table 12.
Offshore wind potential in Northern South America (GW)

Country	Official estimates of potential capacity (GW)	Current status of development	Ongoing initiatives (policy, regulation and projects)	Total electricity demand (year; GWh)
Colombia	109 GW (Caribbean offshore technical potential)	No operational offshore wind farms First Allocation Round (2025) for shallowwater areas in the Caribbean	Published offshore wind roadmap Competitive offshore area allocation process under public consultation by the Ministry of Energy	82,084.9 (2024)
Ecuador	No official offshore wind estimate published	No offshore wind farms or published offshore roadmap	Sector planning and statistical monitoring	30,389.7 (2023)
Peru	347 GW (32–33 GW fixed-bottom; 315 GW floating) – technical estimate	No operational offshore wind farms No official offshore roadmap published	No dedicated offshore regulatory program	58,348 (2023)
Venezuela	381 GW (115 GW fixed-bottom; 266 GW floating) – technical estimate	No operational offshore wind farms and no published offshore policy or roadmap	No specific offshore guidelines	No official data

Source: Authors based on estimated official data..

Table 13.
Integrated marine and coastal tourism management and MPAs in Northern South America

Country	Initiative/program	Type of intervention	Link to MPA
Colombia	GEF Biodiversity and Tourism Project in Providencia and Santa Catalina (implemented by CORALINA)	National project financed by the GEF and implemented by local institutions; integrates conservation, community-based tourism, and visitor-use management	Direct – within the Seaflower Biosphere Reserve (an MPA recognized by UNESCO)
Ecuador	Tourism management model in Galápagos National Park and the Galápagos Marine Reserve	National policy and local management under a special regulatory regime, with visitor-capacity limits, regulated concessions, and revenues reinvested in conservation	Direct – within two MPAs (Galápagos National Park and the Galápagos Marine Reserve)
Peru	Tourism management in Paracas National Reserve and the Guano Islands, Islets and Capes National Reserve System	National policy administered by SERNANP, with site management plans, visitor-capacity controls, and quality standards	Direct – both are nationally designated protected areas (ANPs)*
Venezuela	Tourism management of Los Roques Archipelago National Park	National management by INPARQUES, including visitor-use management, regulation of recreational activities, and environmental education	Direct – a nationally designated protected area (ANP)*

*ANP = Área Natural Protegida, which is Spanish for Protected Natural Area.
Source: Authors based on official sources.-

In Ecuador, although no official estimate of offshore wind potential has been published, energy planning frameworks developed by the Agency for the Regulation and Control of Energy and Non-Renewable Natural Resources (ARCERNNR) and the National Electricity Operator (CENACE) reflect growing interest in diversifying the country's energy matrix.¹⁹² Ecuador relies heavily on hydropower and has room to expand non-conventional renewable energy sources, but it has not yet taken concrete steps toward developing its offshore resources.

The regional landscape shows that Colombia is the most advanced country in the design of policies and enabling mechanisms for project development, with a privileged position to attract foreign direct investment and lead a marine renewable energy corridor in the Caribbean. Peru and Venezuela possess exceptional technical potential, but its development will depend on their political capacity to design stable regulatory frameworks and financing mechanisms. Ecuador, whose potential has not yet been officially quantified, could benefit from resource characterization studies and public-private partnerships that accelerate the transition toward offshore project development.

Sustainable marine and coastal tourism in Colombia, Ecuador, Peru, and Venezuela is emerging as a strategic driver of economic development, social inclusion, and the international positioning of the coastal Andean region. However, its consolidation faces structural challenges, governance asymmetries, and investment gaps that must be addressed through a long-term vision.

In Colombia, the 2022–2026 Sectoral Tourism Plan¹⁹³ establishes nature-based and marine-coastal tourism as priorities within the country's productive transition strategy, with an emphasis on local employment generation, value chain development, and formalization. This framework is linked to the work carried out by CORALINA in Providencia and Santa Catalina, financed by the GEF, which combines coral reef conservation, community strengthening, and management of public use.¹⁹⁴ However, effective implementation requires overcoming limitations in port infrastructure, sanitation, and connectivity, as well as ensuring institutional

capacity for the planning and management of areas under intense tourism pressure.

Ecuador has institutionalized a globally recognized model in the Galápagos Islands, where tourism is managed through visitor-capacity limits, regulated concessions, and reinvestment in conservation.¹⁹⁵ This model is supported by the 2017–2030 Marine and Coastal Spatial Planning Plan,¹⁹⁶ which reconciles uses and regulates productive activities, and by the Galápagos Blue Economy Strategic Plan 2025–2040, which promotes the decarbonization of maritime transport, sustainability certifications, and the strengthening of local value chains. Ecuador's ability to replicate this model in other destinations will depend on its institutionalization and on the availability of international climate and tourism financing.

In Peru, the National Strategic Tourism Plan (PENTUR) and its alignment with regional tourism plans (PERTUR) establish a roadmap for integrating sustainability, competitiveness, and diversification.¹⁹⁷ Under the management of the National Service of Natural Areas Protected by the State (SERNANP), protected areas such as Paracas and the Guano Islands, Islets and Capes National Reserve System implement site-management plans that include visitor-capacity controls, service quality standards, and reinvestment in conservation.¹⁹⁸ Peru's tourism policy has succeeded in consolidating a narrative that views tourism as a mechanism for conservation and development, but it faces the challenge of scaling this model to other unprotected coastal areas, where governance is weaker.

Venezuela has a regulatory framework for integrated coastal zone management through its Coastal Zone Planning and Integrated Management Plan,¹⁹⁹ which establishes zoning and land-use criteria. In Los Roques Archipelago National Park, INPARQUES regulates public use and promotes recreational activities under controlled conditions, constituting an asset of high ecological and tourism value.²⁰⁰ Nevertheless, the lack of updated public data on investment, tourism flows, and projects limits the country's ability to measure results and position itself within the regional Sustainable Blue Economy agenda.



These countries have advanced policy and spatial planning frameworks that recognize the strategic value of marine and coastal tourism, but their impact depends on implementation capacity, interinstitutional alignment, and the ability to attract sustainable investment. The window of opportunity through 2030 requires prioritizing three areas:

- Ensuring the climate resilience of coastal tourism in the face of erosion, extreme events, and biodiversity loss.
- Consolidating regulatory and financial frameworks that integrate local communities and the private sector into sustainable value chains.
- Positioning the coastal Andean region in international markets through certifications, low-impact infrastructure, and robust ocean governance.

In this context, the Galápagos Islands (Ecuador), Paracas (Peru), and Providencia and Santa Catalina (Colombia) emerge as benchmark cases, demonstrating that effective visitor-capacity management, marine and coastal spatial planning, and reinvestment in conservation are *sine qua non* conditions for consolidating sustainable marine and coastal tourism as an SBE driver. Multilateral cooperation, the mobilization of climate finance, and the strengthening of national technical capacities will be decisive in enabling these countries to transform their natural capital into a sustainable and resilient economic asset.

In terms of conservation, MPAs in Colombia, Ecuador, Peru, and Venezuela constitute a strategic pillar for the consolidation of the SBE in LAC, not only because of their ecological function but also because of their geopolitical and economic value. Although these countries differ in their circumstances and pace of progress, all have undertaken commitments that link them directly to multilateral agendas such as the Convention on Biological Diversity (CBD), Sustainable Development Goal 14 (SDG 14), and the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention, positioning marine conservation as an asset for competitiveness and regional security.

In the Colombian Caribbean, MPA coverage reaches approximately 30% of the national marine area, with more than 23 million hectares under protection. This includes landmark initiatives such as the Beata Ridge Marine Protected Area and the strengthening of the Seaflower Biosphere Reserve. This leadership has enabled Colombia to chair regional alliances and project an active environmental diplomacy in which ocean protection is linked to governance, the sustainable management of resources, and conflict prevention in strategically important maritime spaces.²⁰¹ In the Pacific, the most extensive protected areas include the Yuruparí–Malpelo National Integrated Management District (DNMI), the Malpelo Fauna and Flora Sanctuary, and the Pacific Hills and Knolls National Integrated Management District. In addition, the Tribugá–Cupica–Baudó Biosphere Reserve (Chocó), was established in 2023.

Ecuador, with 19.31% of its marine area under protection and 19.3 million hectares incorporated into the National System of Protected Areas (SNAP), has strengthened its position in the Tropical Eastern Pacific and in regional ecological connectivity through the creation of the Hermandad Marine Reserve. This expansion reflects a conservation approach that extends beyond national borders and contributes to marine corridors at a hemispheric scale, linking the Galápagos Islands with protected areas in Costa Rica, Panama, and Colombia.²⁰²

In Peru, marine protected area coverage reaches 8.06%, encompassing critical areas such as the Nazca Ridge National Reserve and the Grau Tropical Sea National Reserve. Although this progress remains below international benchmarks such as the 30x30 Target, it represents a strategic advance in fisheries governance and the regulation of extractive activities in areas of high ecological value. Nevertheless, the country faces implementation challenges arising from pressure exerted by industrial fisheries and limited enforcement capacity across vast maritime areas.²⁰³

Venezuela maintains an estimated marine protected area coverage of 4.35%, based primarily on Los Roques Archipelago National Park, an area of high ecological

and tourism value in the Caribbean. Its participation under the SPAW Protocol provides a regional platform for conservation cooperation, although gaps remain in data updates and in the incorporation of additional MPAs into the national system.²⁰⁴

Taken together, these four countries demonstrate that marine protection is a tool of foreign policy, national security, and sustainable development. The coverage and management of MPAs not only safeguard biodiversity and ecosystem services but also define areas of effective sovereignty, create opportunities for climate finance, and strengthen international positioning in negotiations related to the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ). However, future effectiveness will depend on the ability to integrate conservation with sustainable productive uses, secure stable financing, and strengthen transboundary cooperation—essential conditions for advancing toward a Blue Economy model that is simultaneously competitive, inclusive, and resilient.

In the area of productive development, Colombia's blue entrepreneurship ecosystem is supported by the scientific and technical capabilities of INVEMAR and by national instruments that prioritize sustainable marine and coastal management.²⁰⁵ The Vida Manglar–Cispatá Bay project stands out as the world's first blue carbon project verified in mangrove ecosystems.²⁰⁶ It channels carbon credit revenues toward restoration efforts and local livelihoods, with the participation of the Ministry of Environment and Sustainable Development, Conservation International Foundation, the Regional Autonomous Corporation of the Sinú and San Jorge River Valleys (CVS), and INVEMAR.²⁰⁷ In the areas of fisheries traceability and monitoring, the National Aquaculture and Fisheries Authority (AUNAP) has strengthened information and surveillance systems for both artisanal and industrial fisheries, enabling higher sanitary and market standards for small and medium-sized enterprises (SMEs).²⁰⁸

Coastal universities and entrepreneurship centers are incubating solutions in coral reef restoration, fisheries traceability, and sargassum valorization, as well as pilot

initiatives in marine biotechnology and ocean energy that remain at an exploratory stage.²⁰⁹

In Peru, regulatory consolidation and sectoral guidelines developed by the Ministry of Production (PRODUCE) have stimulated aquaculture development and the scaling up of formal value chains.²¹⁰ In the field of blue carbon, the Ministry of the Environment (MINAM), the National Service of Natural Areas Protected by the State (SERNANP), and the National Fund for Natural Protected Areas (PROFONANPE) are implementing a coastal wetlands program that includes the Tumbes Mangroves National Sanctuary and seagrass ecosystems, with activities focused on monitoring, restoration, and building the scientific foundation for future financing mechanisms.²¹¹

In Ecuador, efforts to strengthen the blue economy combine international cooperation with a robust marine conservation framework. Following the debt-for-nature swap (Blue Bond), the Galápagos Life Fund is channeling long-term resources to the Galápagos Marine Reserve and the Hermandad Marine Reserve, enabling funding streams for local enterprises linked to sustainable tourism, responsible fisheries, and technological solutions.²¹² Along the continental coast, policies implemented by the Ministry of Environment, Water and Ecological Transition (MAATE) on mangrove management—including the concession and community monitoring scheme—support artisanal value chains and provide a foundation for early-stage blue carbon and circular fisheries economy initiatives.²¹³

In Venezuela, priority has been placed on institutional strengthening and in situ conservation in mangrove and seagrass ecosystems within protected areas such as Morrocoy and Los Roques, which are important for ecosystem services, tourism, and artisanal fisheries.²¹⁴ Although blue carbon business models remain at an early stage, the coverage of Ramsar sites and the existing environmental regulatory framework provide baseline conditions for future productive models associated with restoration and coastal resilience.²¹⁵

Table 14.

Marine Protected Areas (MPAs) in Northern South America

Country	MPA coverage (%)	Estimated protected marine area (ha)	Avances clave / participación regional
Colombia	Approximately 30% of national marine waters protected	Approximately 23M	Establishment of MPAs in Serranilla and Bajo Nuevo (+3,800 km²) Leadership in regional partnerships and MPA networks
Ecuador	8% (2022)	Hermanadad Marine Reserve (6M), incorporated into SNAP, increased protected marine area from 13.3M to 19.3M	Implementation of the SNAP system, with a focus on conservation and ecosystem connectivity Institutional leadership in MPA management (Ministry of the Environment)
Peru	Approximately 8% of marine waters protected	No recent official data available	Protection of critical ecosystems such as Paracas, the Nazca Ridge, and the Grau Tropical Sea Participation in international commitments such as the Aichi Targets and the Convention on Biological Diversity (CBD)
Venezuela	4.35% MPA coverage of territorial waters (2021)	No official figures for protected marine area (ha) were identified	Protection through Los Roques Archipelago National Park Participation in regional agreements such as the SPAW Protocol

Source: Authors based on official data.

Table 15.

Productive approaches for Sustainable Blue Economy development in Northern South America

Country/Region	Productive approach	Institutional framework / collaborative instruments	SBE models / entrepreneurship / collaborative arrangements
Colombia	Mangrove and coral reef restoration Fisheries traceability Marine biotechnology and ocean energy (pilot projects)	INVERMAR; Ministry of Environment and Sustainable Development; AUNAP; Vida Manglar Project (Conservation International, Verra)	Startups and SMEs incubated at coastal universities Community-based mangrove associations Certified blue carbon credits with revenues reinvested in local communities
Ecuador	Sustainable tourism Responsible fisheries Circular fisheries economy Blue carbon in mangrove ecosystems	MAATE; Undersecretariat for Marine and Coastal Management; Galápagos Life Fund (MEF-TNC)	Mangrove concessions with community-based monitoring Marine conservation trust funds Local enterprises in sustainable fisheries value chains
Peru	Formalized aquaculture (tilapia, trout, and scallops) Mangrove and seagrass restoration	PRODUCE; MINAM; SERNANP; PROFONANPE	Aquaculture producer associations Participatory management of protected areas Coastal wetland projects supporting blue carbon MRV systems
Venezuela	Mangrove and seagrass conservation Sustainable artisanal fisheries	INPARQUES; Ministry of People's Power for Eco-socialism; Ramsar Convention	Fishing cooperatives in protected areas Community-based resource management Regulatory foundations for future blue carbon projects

Source: Authors based on official data.

Taken together, these advances demonstrate a process of increasing maturity:

1. Frameworks and institutions that enable investment and MRV systems for blue carbon.
2. SMEs and startups that translate applied science—such as restoration, traceability, and the bioeconomy—into market opportunities.
3. Financial vehicles, ranging from environmental funds and debt-for-nature swaps to carbon certification schemes, that can catalyze the transition toward resilient, inclusive, and competitive value chains within the Sustainable Blue Economy of the four countries.

Strengthening cross-sector governance, attracting investment in blue innovation, and deepening regional cooperation are strategic steps for enabling the northern subregion of South America to strengthen its position within the global Sustainable Blue Economy agenda. Through CAF, the WEF, WRI, and regional platforms such as CMAR and the Andean Community (CAN), a window of opportunity exists to promote a structural transformation of marine and coastal economies aligned with the principles of sustainability, equity, and shared prosperity.

Nevertheless, common structural challenges persist across the subregion. Regulatory fragmentation, limited coordination among economic, environmental, and territorial sectors, insufficient investment in resilient coastal infrastructure, and the absence of marine economic information systems that support evidence-based decision-making constrain the ability to harness ocean potential as a transformative economic driver. Addressing these challenges will be essential for the northern subregion of South America to consolidate its leadership in the transition toward a Sustainable Blue Economy aligned with the principles of equity, environmental regeneration, and shared prosperity.

Likewise, multilevel ocean governance, the formalization of value chains, the scaling up of successful initiatives, and the attraction of climate and blue finance remain critical challenges. The lack of effective incentives for emerging sectors such as marine renewable energy, the marine biotechnology, and the circular economy limits the ability to expand the impact of the SBE on social well-being and climate resilience.

In this context, advancing toward an effective and sustained Sustainable Blue Economy in the northern subregion of South America requires:

- Consolidating comprehensive and binding regulatory frameworks.
- Establishing adaptive and participatory marine spatial planning systems.
- Strengthening local technical capacities and coastal innovation networks.
- Mobilizing innovative financial instruments, including blue bonds, parametric insurance, and debt-for-nature swaps, among others.
- Promoting blue enterprises with social and environmental impact.
- Fostering public-private partnerships that accelerate the deployment of conservation projects and the creation of blue jobs.
- Strengthening regional cooperation platforms such as CMAR, which integrate knowledge, financing, and technology in support of marine development.

The harmonization of subregional policies, the strengthening of multilevel governance, and the scaling up of resilient blue infrastructure are essential steps for transforming this momentum into tangible and globally competitive results.

South America: South Hub

The southern subregion of South America, comprising Chile, Argentina, Uruguay, and Brazil, has the longest coastal corridor in Latin America, stretching from tropical zones to subantarctic areas. This exceptional biogeographic condition gives the subregion a vast diversity of marine and coastal ecosystems and natural capital of high strategic value, both for its biodiversity and for the opportunities it offers for sustainable development with territorial justice.

In terms of implementation, this subregion exhibits a higher level of institutional and programmatic development than the regional average, having integrated the concept of the Sustainable Blue Economy into national policies, regulatory frameworks, financing instruments, and innovation agendas. Among the most notable developments are Chile's recent issuance of its first Blue Bond²¹⁶ and its Sustainable Ocean Plan,²¹⁷ Brazil's National Maritime Policy,²¹⁸ Argentina's Pampa Azul²¹⁹ initiative, and the Uruguay Azul 2030 Roadmap.²²⁰ These strategies have incorporated key Sustainable Blue Economy concepts, including marine spatial planning, the valorization of ecosystem services, blue carbon, ocean literacy, climate finance, and technological innovation, in line with the approaches promoted by CAF, WEF, and WRI.

Chile and Brazil stand out as regional leaders, both because of the strength of their multisectoral institutional frameworks and because of the implementation of coherent policies at the national and subnational levels.

Chile has consolidated an advanced institutional architecture for ocean governance. Its approach combines progressive ocean governance, well-established scientific capabilities, and a strategic vision that integrates marine conservation, economic development, climate resilience, and technological innovation. This policy, aligned with the commitments undertaken by the country as a member of the High Level Panel for a Sustainable Ocean Economy (Ocean

Panel), is embedded within a coherent regulatory ecosystem that has incorporated sustainability into its financing instruments, as demonstrated by the issuance of Sovereign Green Bonds, a pioneering initiative in Latin America that has mobilized more than USD 9 billion since 2019²²¹ and paves the way for future blue bonds and climate-smart financing mechanisms. In addition, Chile co-leads the 100% Alliance²²² with France, an international coalition that seeks to ensure that 100% of waters under national jurisdiction are managed sustainably by 2030. Through these ambitious goals, Chile positions itself not only as a regional leader but also as a global benchmark in the transition toward the Sustainable Blue Economy.

Through the National Ocean Program,²²³ Chile coordinates 41 interministerial initiatives covering issues ranging from ocean security and marine science to coastal productive development. This multisectoral governance framework reflects alignment with WRI and WEF principles regarding the cross-cutting nature of climate action and the need for evidence-based ocean planning. Key initiatives include marine spatial planning, the expansion of MPAs, the promotion of sustainable aquaculture, the restoration of coastal habitats, and the generation of climate-relevant ecosystem services.

As part of this evolving regulatory ecosystem, Chile took a major step forward in June 2025 by issuing its first blue bond,²²⁴ becoming the first South American country to launch a financial instrument of this kind focused exclusively on ocean protection. The transaction, led by BancoEstado and supported by multilateral institutions, seeks to finance projects related to marine conservation, sustainable coastal development, and climate change adaptation. This issuance marks a milestone in the incorporation of blue criteria into the national financial architecture and reinforces the regional trend toward the creation of innovative mechanisms that connect public and private investment with ocean sustainability objectives.



Concón, Chile

Brazil has established itself as one of the countries with the greatest strategic potential for implementing the SBE in LAC. Through a combination of regulatory innovation, energy leadership, and ocean planning based on a systemic approach, the country is advancing the development of a blue governance architecture that integrates economic development, environmental conservation, and territorial justice.

Through its National Marine Resources Plan (Plano Nacional de Recursos do Mar),²²⁵ Brazil has adopted a comprehensive SBE vision. This strategy addresses seven priority areas: fisheries, maritime transport, marine bioprospecting, renewable energy, spatial planning, ocean literacy, and innovation, all under the umbrella of sustainability and territorial justice.²²⁶ The agenda has been driven by multilevel governance coordinated among the Ministry of Science, Technology and Innovation and other public, private, and academic stakeholders. Brazil has also positioned itself as a key actor in regional cooperation.

The country has been a pioneer in integrating the value of its marine assets into national accounting through the growing incorporation of instruments such as Blue Accounting,²²⁷ representing progress toward recognizing the ecological and productive value of marine and coastal assets, in line with recommendations from WRI and WEF. A tangible example of this institutional commitment is the BNDES Azul initiative,²²⁸ launched by the National Bank for Economic and Social Development (BNDES), which channels resources toward resilient coastal infrastructure, naval fleet decarbonization, Nature-based Solutions, and multi-stakeholder governance of marine space. At the subnational level, the Metropolitan Region of Rio de Janeiro has been recognized by the OECD²²⁹ as a leading example of the blue economy, with sectors such as offshore oil and gas, coastal tourism, defense, and port logistics accounting for between 27% and 44% of the state's GDP.

Although at earlier stages of development, Argentina and Uruguay are following consistent and increasingly consolidated trajectories. Argentina has incorporated the Sustainable Blue Economy into its scientific and

technological research policies, with CONICET²³⁰ playing an important role in marine biotechnology and climate change research. The country is also working on the management of strategic resources and the strengthening of maritime sovereignty. Argentina has leveraged its vast ocean platform, ecosystem richness, and scientific capabilities to develop a blue agenda that links economic development with environmental conservation and territorial justice. Through the Pampa Azul Strategy, it integrates scientific research, technological innovation, and capacity building for the sustainable management of marine and coastal space. Priority geographic areas include Banco Namuncurá,²³¹ Agujero Azul,²³² and the Buenos Aires estuaries,²³³ which constitute strategic hubs for monitoring ocean health, protecting sensitive habitats, and advancing marine spatial planning.

In Uruguay, the Sustainable Blue Economy has been incorporated through the National Environmental Plan for Sustainable Development²³⁴ and the update of its National Biodiversity Strategy, coherently integrating marine conservation with objectives related to climate resilience, sustainable production, and environmental justice, in alignment with the core principles promoted by CAF, WEF, and WRI.

With regard to port development, the Southern Cone region is home to some of Latin America's most important port complexes, both in terms of cargo volumes and their strategic role in intercontinental maritime trade. The Port of Santos in Brazil leads the region with more than 4.8 million TEUs in 2021, making it the principal logistics hub in South America and one of the largest in the hemisphere. Its position is being reinforced through expansion projects such as the new Tecon 10 terminal, which will add an estimated capacity of 3.5 million TEUs to accommodate the growth of Brazilian foreign trade and consolidate its role as a regional hub.²³⁵



Table 16.
Logistics and port infrastructure in the South Hub, classified by annual TEU throughput

N°	Puerto	Country	Annual TEU* throughput (2022)	Significance (specialization, strategic location)	Port type	Generation	2030 outlook
1	Santos	Brazil	4.8M TEUs (2021)	Brazil's principal port and one of the largest in Latin America	Multipurpose / Containers	4G	New Tecon 10 terminal with a capacity of 3.5 M TEUs
2	San Antonio	Chile	1.54M TEUs (2023)	Chile's largest port, handling more than 20% of the national market	Containers	4G	Breakwater modernization and an increase in operational availability to 95%
3	Valparaíso	Chile	No official data available	Historic port and a key logistics complement to Chile's port system	Multipurpose	4G	Master Plan projects capacity to reach 7.7 M TEUs
4	Buenos Aires	Argentina	860,000 TEUs (2022)	Handles ~60% of Argentina's container traffic	Containers / Multipurpose	4G	Installed capacity of 1.5 M TEUs
5	Montevideo	Uruguay	1.12M TEUs (2023)	Regional hub and strategic free port	Containers / Transshipment	4G	ANP Master Plan for logistics hub development and digitalization
6	Paranaguá	Brazil	No official data available	Key gateway for agricultural and grain exports	Bulk cargo / Containers	4G	Ongoing dredging and modernization
7	Itajaí	Brazil	No official data available	Major growth port in southern Brazil	Containers / Multipurpose	4G	Expansion projects and operational improvements
8	Suape	Brazil	No official data available	Industrial and petrochemical hub in northeastern Brazil	Energy cargo / Multipurpose	4G	Energy and intermodal expansion
9	TecPlata (La Plata)	Argentina	5,400 TEUs (Jan–Sep 2023)	Modern but underutilized terminal	Containers	4G	Phase II projected to reach 900,000 TEUs
10	Dock Sud (Puerto La Plata)	Argentina	434,000 TEUs (Jan–Nov 2024)	Key port within the Greater Buenos Aires metropolitan area	Containers	4G	Increase in container-handling capacity

Source: Authors based on official data.

Chile, for its part, has a dual port structure, with San Antonio serving as the country's principal container port (handling 1.54 million TEUs in 2023) and Valparaíso functioning as a complementary logistics and multipurpose port. San Antonio is advancing an ambitious modernization plan for its breakwater infrastructure aimed at increasing operational availability to 95%, while Valparaíso's Master Plan contemplates a potential capacity increase to 7.7 million TEUs, incorporating environmental sustainability and operational efficiency criteria.²³⁶

In Argentina, the Port of Buenos Aires handles approximately 60% of the country's container traffic, with 860,000 TEUs handled in 2022 and an installed capacity of 1.5 million TEUs. Although it faces modernization and efficiency challenges, it forms part of a key logistics corridor for the Southern Cone. In addition, the TecPlata terminal, which handled 5,400 TEUs between January and September 2023, and the Port of Dock Sud (434,000 TEUs between January and November 2024) represent strategic alternatives within the metropolitan region, with significant growth potential if land and maritime connectivity can be improved.²³⁷

Uruguay has positioned Montevideo as a transshipment hub and free port, handling 1.12 million TEUs in 2023 and reinforcing its role along South Atlantic shipping routes. The National Ports Administration Master Plan projects the expansion of both physical and digital infrastructure with the objective of consolidating Uruguay's leadership in the container transshipment market and strengthening resilience to extreme climate events.²³⁸

Looking toward 2030, the ports of the Southern Cone share both challenges and opportunities related to the transition toward sustainability. Key challenges include the need to modernize infrastructure, adopt automation and digitalization technologies, and incorporate renewable energy into port operations.

In terms of marine renewable energy, the region has an estimated potential of more than 4,000 GW,²³⁹ with Brazil and Chile leading the development of offshore wind projects and enabling a first wave of export-oriented clean hydrogen projects.

Chile is positioning itself as a regulatory and technological laboratory for marine energy and offshore wind. Pilot wave energy initiatives, such as those developed by the Marine Energy Research and Innovation Center (MERIC), have made it possible to validate testing and monitoring capabilities in open-sea conditions.²⁴⁰ Building on this foundation, the Ministry of Energy and the Net Zero World program are developing the National Offshore Wind Roadmap, aimed at enabling investment and complementing the deployment of land-based renewable energy.²⁴¹ This roadmap is aligned with the National Green Hydrogen Strategy and its 2023–2030 Action Plan,²⁴² which positions the country as a competitive producer and exporter of hydrogen and hydrogen derivatives over the long term. This vision, supported by production estimates of up to 160 million tons by 2050, is aligned with the decarbonization agendas promoted by CAF.

Through the Energy Research Office (EPE), Brazil established a reference plan for offshore wind as early as 2019, identifying hundreds of gigawatts of technical potential, including approximately 700 GW in waters with depths of 50 meters or less.²⁴³ In 2025, the Brazilian Institute of Environment and Renewable Natural Resources granted the first preliminary license for an offshore wind pilot project.²⁴⁴ The country's green hydrogen production potential²⁴⁵ has been estimated at up to 2 billion tons, and with an energy matrix supported by clean sources such as hydropower, solar, and wind energy, Brazil is emerging as a key player in global industrial decarbonization and the marine energy transition. Investments in ocean renewable energy, sustainable logistics, and marine spatial planning complement this approach.

Uruguay starts from a favorable institutional position, with a highly renewable electricity system and a green hydrogen roadmap approved by the Executive Branch. The state-owned company ANCAP is leading the H2U Offshore Round, designed to allocate maritime areas to private investors under flexible contractual arrangements focused on the production of green hydrogen and green ammonia, with technical assistance from the IFC and the World Bank.²⁴⁶ The Ministry of Industry, Energy and Mining developed this roadmap with support from the IDB, and the National Administration of Power Plants and

Electrical Transmissions (UTE) reports stable domestic demand, creating opportunities for energy exports when hydropower and wind generation exceed the national electricity load.²⁴⁷

Argentina, meanwhile, does not yet have a specific offshore wind roadmap, but its experience in land-based renewable energy and the port development of the South Atlantic provide a foundation for offshore resource assessments and the planning of suitable development areas.

With regard to sustainable marine and coastal tourism, Brazil, Chile, Argentina, and Uruguay have advanced its institutionalization as a strategic component of development through robust regulatory frameworks and operational experiences that combine spatial planning, conservation, and competitiveness. However, the consolidation of results by 2030 will depend on their ability to close gaps in enabling infrastructure, impact monitoring, and multi-stakeholder coordination.

In Brazil, the National Coastal Management Plan and its ecological-economic zoning framework provide the basis for harmonizing uses along the coastal zone, integrating tourism, conservation, and production.²⁴⁸ The Chico Mendes Institute for Biodiversity Conservation (ICMBio) has strengthened visitor management in marine conservation units through quality standards and performance monitoring,²⁴⁹ while the Ministry of Tourism promotes good-practice guidelines for sun-and-beach destinations.²⁵⁰ The strategic priority is to consolidate marine spatial planning and direct investment toward sanitation and carrying-capacity management in priority tourism corridors.²⁵¹

Chile has a National Sustainable Tourism Strategy 2035²⁵² that incorporates resilience, decarbonization, and sustainability standards for marine and coastal destinations, managed under the quality and certification guidelines of the National Tourism Service (SERNATUR). The immediate challenge is to scale up destination governance toward the effective management of use pressures and to strengthen enabling infrastructure in coastal areas and protected areas.

In Argentina, the Federal Strategic Sustainable Tourism Plan 2025²⁵³ guides the development of

nature-based and coastal destinations based on quality and competitiveness criteria. The Patagonia Austral Interjurisdictional Marine Coastal Park stands out as a model of joint management across levels of government, integrating conservation with regulated public use.²⁵⁴ The priority is to ensure stable financing and the systematic measurement of economic and environmental impacts along the Atlantic coast.

Uruguay integrates sustainable tourism into the National System of Protected Areas (SNAP), through guidelines that link public use in protected areas to conservation and local socioeconomic benefits.²⁵⁵ The approach combines environmental planning, the management of use pressures, and coordination with departmental governments on sanitation and waste management in coastal destinations.

The Southern Cone encompasses a combined Exclusive Economic Zone (EEZ) of more than 5 million km², of which an average of 27% is already under formal protection regimes. Notable progress includes Chile, where 42% of its EEZ is protected through large-scale areas such as Nazca-Desventuradas and Juan Fernández, and Brazil, where 26% of its EEZ is protected through highly biodiverse oceanic blocks managed by the Ministry of the Environment and ICMBio. In both cases, strengthening management effectiveness and the traceability of results remains a priority.²⁵⁶ These efforts position Chile and Brazil as regional benchmarks.²⁵⁷

Argentina has taken important steps in the conservation and protection of its marine natural capital through actions such as the designation of the Agujero Azul Benthic Marine Protected Area²⁵⁸ and the implementation of the Patagonia Azul initiative, which combines ecological restoration, coastal conservation, and the promotion of regenerative ecotourism. These efforts reaffirm the country's commitment to meeting global marine protection targets, in line with the ecosystem approach and the Nature-based Solutions principles promoted by WRI and the WEF sustainability agenda. In Uruguay, marine protected area coverage remains limited (0.7%), but the government has set a short-term goal of reaching 10%, prioritizing areas of high ecological and socioeconomic value such as the Isla de Lobos Reserve.²⁵⁹



Maranhão, Brazil

Table 17.
Offshore wind potential in Southern South America (GW)

Country	Official estimates of potential capacity (GW)	Current status of development	Ongoing initiatives (policy, regulation and projects)	Total electricity demand (year; GWh)
Brazil	≈700 GW at depths ≤50 m (technical potential identified by EPE)	First federal environmental license (preliminary license) issued for a 24.5 MW test site in Areia Branca (Rio Grande do Norte) Progress in environmental regulation and energy planning	EPE – Offshore Wind Roadmap (2019) IBAMA preliminary license issued on 24 June 2025	532,000 GWh (2023)
Chile	No official estimate published (Roadmap under development)	Wave energy pilot projects Offshore wind roadmap under development	Ministry of Energy – Roadmap	80,200 GWh (projection 2024)
Uruguay	No official estimate published in GW (significant resources identified on the continental shelf)	H2U Offshore Round (ANCAP) to allocate offshore areas for H ₂ /NH ₃ production	ANCAP – H2U Offshore Round; MIEM H ₂ Roadmap	12,210.5 GWh (2024)
Argentina	No official estimate published in GW	National Hydrogen Strategy (2023) and subnational initiatives No dedicated offshore wind roadmap	SAE – National Hydrogen Strategy (2023)	140,883 GWh (2023)

Source: Authors based on official data.

Table 18.
Integrated marine and coastal tourism management and MPAs in Southern South America

Country	Initiative/program	Type of intervention	Link to MPA
Brazil	Fernando de Noronha Marine National Park—visitor management and support services (concessions and visitor-capacity controls)	Operational MPA management model with permits for visitor support services	Direct (Marine National Park managed by ICMBio)
	Abrolhos Marine National Park—regulated tourism operations (diving and accredited guides)	Operational management with guide registration and public-use safety protocols	Direct (Marine National Park managed by ICMBio)
Chile	Lafken Mapu Lahual Multiple-Use Coastal Marine Protected Area*—local governance model and biodiversity monitoring with controlled public access	Regional policy/program (Multiple-Use MPA) with monitoring instruments and use regulations	Direct (Multiple-Use Coastal Marine Protected Area* under the Ministry of the Environment)
	Humboldt Penguin National Reserve – visitor management and access controls	Operational management of a wild protected area with access protocols and inter-institutional coordination	Indirect—marine-coastal (protected wild area** with a strong marine component)
Argentina	Patagonia Austral Interjurisdictional Coastal Marine Park (PIMCPA) – joint administration and regulated public use	Interjurisdictional model (national–provincial) integrating tourism, research, and conservation	Direct (marine-coastal protected area)
Uruguay	Cabo Polonio National Park (SNAP) – public access through designated trails, visitor-capacity controls, and tourism guidelines for protected areas	National management of protected areas under SNAP, with sustainable tourism guidelines and access controls	Direct (SNAP protected wild area in a coastal-marine zone)

* Multiple-Use Coastal Marine Protected Area (AMCP-MU). ** Protected Wild Area (ASP).
Source: Authors based on official data.

Table 19.
Marine Protected Areas (MPAs) in Southern South America

Country	Coverage MPA (%)	Estimated protected marine area	Key milestones / regional participation	Participation in regional agreements
Chile	42% (2025)	~1.3M ha coastal-marine protected areas + large oceanic parks (>1.4M km²)	Nazca–Desventuradas and Juan Fernández MPAs Expansion plan to protect more than 50% of the EEZ	CPPS, BBNJ, SDG 14
Brazil	26% (2024)	~960,000 km²	Creation of large oceanic pro-tected areas Strengthening of Marine and Coastal Conservation Units	CBD, BBNJ, SDG 14
Argentina	12% (2024)	~170,000 km²	Blue Hole Benthic MPA Blue Patagonia Initiative Strengthening of the SNAMP*	CBD, SDG 14
Uruguay	0.7% (2022)	~3,436 km²	Expansion plan to achieve 10% coverage Prioritization of Isla de Lobos	SPAW, SDG 14

*National System of Marine Protected Areas (SNAMP)
Source: Authors based on official data.

Participation in platforms such as the Permanent Commission for the South Pacific (CPPS), the SPAW Protocol, and the BBNJ negotiations will enable these countries to amplify their voice in global ocean governance, link conservation with sustainable productive uses—including fisheries, tourism, and offshore energy—and strengthen their position as a negotiating bloc on marine biodiversity in areas beyond national jurisdiction.

In terms of productivity, sectors associated with the Sustainable Blue Economy make a significant contribution to national economies. In Chile, fisheries and aquaculture exports exceed USD 7 billion annually; in Argentina, marine fisheries generate more than USD 2 billion; and in Brazil, the blue economy accounts for approximately 19% of coastal GDP, including oil and gas, maritime transport, and fisheries.²⁶⁰

With regard to the promotion of innovation ecosystems and technological development, Chile has turned Patagonia into a natural laboratory for blue innovation through initiatives such as Blue Week.²⁶¹ Initiatives such as the GEF Marine-Coastal Governance Project competition,²⁶² implemented in regions including Aysén and Atacama, have fostered high-impact local solutions with community participation and a regenerative approach. Likewise, initiatives such as CREST 2025,²⁶³ led by Hatch Blue,²⁶⁴ promote the acceleration of startups focused on aquaculture, fisheries traceability, and the circular economy. Cases such as Idea-Tec²⁶⁵ reflect the capacity of Chilean entrepreneurship to connect sustainability, circular economy principles, and regional scalability. In the area of financial innovation, and in collaboration with the Patagonia Azul Foundation, CAF launched a pilot marine biodiversity credit program at COP16 on Biodiversity (Cali, 2024) on the Chilean Patagonia coast, focused on the Pitipalena-Añihué protected area. This innovative financial instrument assigns economic value to marine conservation services, mobilizing private investment to strengthen the management of marine protected areas and promote local sustainable development.

In marine biotechnology, Chile and Argentina are advancing through applied research on bioactive compounds of interest to the pharmaceutical, food, and cosmetics industries. Sustainable aquaculture continues to expand through partnerships with FAO and the development of environmentally responsible practices. In the area of blue carbon initiatives, Argentina and Uruguay are advancing pilot projects involving mangroves, salt marshes, and seagrass ecosystems.²⁶⁶

Together, the Southern Cone exhibits complementary trajectories: Chile has an innovation and business acceleration ecosystem focused on market-based solutions; Brazil has enabling regulatory frameworks for conservation and ocean energy; Argentina has applied science and blue carbon metrics for salt marshes; and Uruguay is implementing medium-term blue planning and governance platforms to scale pilot initiatives. These pillars—innovation, enabling regulation, applied science, and planning—provide a credible foundation for competitive SBE models with the potential to attract climate investment, support inclusive value chains, and accelerate the transition toward resilient marine and coastal economies.

The potential for SBE development in the Southern Cone is closely linked to the ability of countries to align their legislative frameworks with international standards for marine spatial planning and blue accounting. It is also connected to the role of their research centers, which concentrate expertise in marine biotechnology and ocean renewable energy, as well as to the future potential of pilot initiatives already underway, including the 100% Alliance in Chile and BNDES Azul in Brazil. These developments demonstrate how Chile, Brazil, Argentina, and Uruguay are shaping a landscape in which measurable impacts can be achieved in ecological restoration, blue employment, and innovation-driven development.

Table 20.
Productive approaches for Sustainable Blue Economy development in Southern South America

Country/ Region	Productive approach	Institutional framework / collaborative instruments	SBE models / entrepreneurship / collaborative arrangements
Chile	Blue innovation Sustainable aquaculture Fisheries traceability Circular economy Marine biotechnology Blue carbon (pilot projects)	MMA; SUBPESCA; SERNAPESCA; IFOP; GEF Marine and Coastal Governance Project; Hatch Blue-CREST; FAO-UACH	Community competitions and pilot projects in coastal regions Sector-specific accelerators (Hatch Blue) University-industry partnerships Recycling and certified traceability startups
Brazil	Coastal conservation and management Ocean energy (offshore wind) Marine biotechnology Blue carbon readiness in mangroves and salt marshes	MMA; CIRM; ICMBio; MME; MCTI	National Coastal Management Plan Marine and coastal monitoring Roadmaps for ocean energy Technical and regulatory foundations for MRV and future blue carbon markets
Argentina	Marine biotechnology (bioactive compounds) Sustainable aquaculture Restoration and monitoring of salt marshes for blue carbon	CONICET; CESIMAR; CERZOS; Ministry of Environment and Sustainable Development	Applied research programs on macroalgae and microalgae Public-scientific partnerships for salt marsh restoration Development of metrics for climate policy and financing
Uruguay	Marine spatial planning Coastal conservation Sustainable artisanal fisheries Blue carbon potential in seagrass meadows and salt marshes	Ministry of Environment; SNAP; UNDP	Uruguay Azul 2030 roadmap Community-based management in the Laguna de Rocha Protected Landscape Blue economy and green jobs assessments Preparation of blue carbon pilot projects

Source: Authors based on official data.

Malvinas Islands, Argentina



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Levers for transformation

The transition toward an SBE in LAC depends on a set of elements that, at different scales, make it possible to translate progress and commitments into real processes of change. These factors are not ancillary; they determine the region's ability to overcome structural constraints, coordinate efforts, and fully harness the potential of its marine and coastal ecosystems.

Marine ecoregions provide the territorial and biogeographic framework that gives meaning to collective action, reminding us that ecosystems transcend political boundaries. They play a strategic role by concentrating unique biodiversity, critical ecosystem services, and conservation opportunities that are essential to regional resilience.

Governance and regulatory frameworks establish the rules and coordination mechanisms needed to reconcile diverse interests and ensure coherence across local, national, and regional scales. Within this framework, regional initiatives and SOPs demonstrate how commitments are translated into concrete cooperation, spatial planning, and investment guidance.

Finally, science and innovation provide the essential foundation for ensuring the robustness and long-term viability of this process. They generate the evidence, knowledge, and practical solutions needed to sustain progress over time and respond to the emerging challenges of a region undergoing rapid transformation.

Marine ecoregions, protected areas, unique ecosystems, and key ecological assets

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LAC is home to 47 of the world's 258 recognized marine ecoregions, representing approximately 18% of the global total and positioning the region as one of the most diverse in terms of marine ecosystems. Currently, about 8.3% of LAC's marine areas are protected under some form of formal protection regime.²⁶⁷

In addition, 23 countries in the region have more marine territory than land territory. On average, 50% of the region's territory corresponds to the ocean, a proportion that rises to 91% in the Caribbean islands and reaches nearly 99% in some countries, such as Barbados and Antigua and Barbuda.²⁶⁸

With regard to the protection of these ecoregions, the region has made significant progress. According to the *Protected Planet Report 2024*,²⁶⁹ LAC currently has 27.41% coverage of protected marine and coastal areas, moving closer to the global target of 30% by 2030.²⁷⁰

Among its most unique ecosystems are the Galápagos Islands, ocean trenches with depths exceeding 8,000 meters that remain unexplored, and cold-water coral reefs.²⁷¹ Likewise, cold-water coral reefs, such as those recently discovered in the Gulf of Mexico, are expanding knowledge of deep-sea ecosystems and their importance to global ocean health.²⁷² These ecosystems are not only vital for global biodiversity, but also provide essential ecosystem services, including coastal protection, carbon sequestration, and support for local communities.

One of the most important ecological assets in LAC is the Mesoamerican Reef System (MAR), the world's second-largest barrier reef, which stretches for more than 1,000 km along the coasts of Mexico, Belize, Guatemala, and Honduras.²⁷³ This ecosystem is home to more than 500 fish species, 65 species of stony corals, and 350 species of mollusks, and plays a vital role in biodiversity, local economies, and coastal protection.

However, the MAR faces critical threats. Between 2023 and 2024, marine heatwaves caused widespread coral bleaching, and currently only 18% of assessed sites are considered to be in good condition, underscoring the urgency of conservation action.²⁷⁴

Mangroves and seagrass ecosystems, meanwhile, are recognized for their high capacity to capture and store blue carbon. Although they cover less than 0.5%

of the global seafloor, mangroves store more than 50% of marine sediment carbon, while seagrasses, which occupy only 0.2% of the ocean floor, account for between 10% and 18% of total ocean carbon burial.²⁷⁵ Halting the loss and degradation of these ecosystems could avoid up to 650 million tons of CO₂ emissions per year, equivalent to the annual emissions of the global shipping industry.²⁷⁶

Governance and institutional and regulatory frameworks

In LAC, governance mechanisms aimed at the sustainable development of marine and coastal areas remain in a phase of consolidation. This situation is reflected in the uneven progress of regulatory frameworks, the limited capacity to implement productive development programs, and the difficulty of effectively mobilizing public and private capital.

One of the most significant structural challenges is the limited institutional capacity to plan and manage marine and coastal territories in an integrated manner. This is compounded by capacity gaps between central and subnational levels of government, as well as tensions across governance levels that constrain the design and implementation of coherent policies. These challenges are particularly evident in coastal areas, where coastal erosion, pollution, demographic pressures, and the impacts of climate change intensify socio-environmental conflicts.

Against this backdrop, advancing toward a more integrated, inclusive, and evidence-based model of ocean governance is an essential condition for consolidating the SBE in the region. Strengthening this governance model will depend on the alignment of regulatory frameworks, technical capacities, institutional coordination, and financing mechanisms that ensure continuity and effectiveness over time.

With respect to legislation and regulation, progress across the region has been uneven and reflects the specific circumstances of each country. Various countries have updated or enacted legislation in areas such as fisheries, aquaculture, marine biodiversity, climate change, and marine protected areas, laying the foundation for regulating maritime activities, conserving coastal ecosystems, and promoting emerging sectors such as marine energy and marine biotechnology. Table 21 shows how, in most countries across the region, legal frameworks are converging toward the regulation and protection of marine and coastal areas. This convergence has been fundamental to advancing a more integrated model of marine governance, although the degree of institutional development and coordination varies significantly among countries.

Countries such as Jamaica, Barbados, the Dominican Republic, Trinidad and Tobago, Panama, and Costa Rica have adopted strategic and regulatory frameworks that explicitly incorporate principles of sustainability and marine governance. Likewise, in South America, countries such as Chile, Brazil, and Colombia have integrated ocean legislation, biodiversity regulations, and marine spatial planning policies, using cross-cutting approaches aimed at sustainable development, climate resilience, and social equity.

However, a significant gap remains with respect to the regulation of more innovative areas such as blue carbon, marine bioprospecting, and offshore wind energy. The absence of regulations in these areas highlights the need for adaptive regulatory frameworks capable of responding to global challenges, promoting innovation, and fostering sustainable investment.

The effectiveness of these frameworks depends directly on institutional capacity for implementation. In this regard, the region exhibits uneven progress. Some countries, such as Barbados, Jamaica, and the Dominican Republic, have established interministerial committees or specialized technical units to coordinate Sustainable Blue Economy policies, integrating sectors such as environment, fisheries, tourism, energy, and science while seeking to avoid institutional overlap. Similarly, countries with extensive coastlines and highly diverse ecosystems, such as Brazil, Colombia, and Mexico, have established national councils or commissions for integrated coastal zone management, adopting multiscale approaches that bring together local, regional, and national stakeholders. Likewise, in the Southern Cone, Chile, Brazil, and Argentina have made significant progress by incorporating marine spatial planning into their regulatory frameworks, a tool that helps organize the use of ocean space, prevent sectoral conflicts, and optimize ecosystem conservation.

Despite these advances, challenges remain in strengthening horizontal coordination across sectors, as well as vertical coordination with subnational authorities and local communities. In many contexts, institutional fragmentation remains pronounced. Multiple government agencies operate under overlapping mandates and lack effective coordination mechanisms, resulting in implementation gaps, inefficiencies, and jurisdictional conflicts. In addition, weaknesses in enforcement, monitoring, and regulatory compliance mechanisms constitute a structural obstacle, particularly in settings with limited institutional capacity.

With regard to regional regulatory harmonization, LAC still lacks a common regional framework that defines guiding principles, technical standards, or guidelines

covering the essential pillars of an SBE. This gap hinders cooperation among countries, complicates the regional integration of sustainable ocean-based goods and services, and reduces the attractiveness of the region for responsible foreign investment.

Against this backdrop, clear opportunities for legislative action can be identified. There is an urgent need to update national regulatory frameworks to incorporate emerging productive sectors and marine sustainability criteria. At the same time, progress is needed toward the development of regional legal governance frameworks that strengthen coordination among countries, promote common reporting and monitoring standards, and support public-private partnerships for blue development. Instruments such as regional framework laws, harmonized technical guidelines, and intergovernmental legislative assistance mechanisms can make a significant contribution to closing existing gaps.

In this regard, Sustainable Ocean Plans, discussed in greater detail below, help ensure the coherence of public policies and regulatory frameworks by aligning environmental, economic, and social priorities within a common roadmap, thereby avoiding duplication, regulatory gaps, and conflicts among sectors. They make it possible to align coastal, marine, fisheries, tourism, energy, and conservation policies under a systemic approach, creating an enabling framework that strengthens interinstitutional cooperation, improves the efficiency of public spending, and ensures that actions undertaken by different levels of government contribute to shared objectives

Finally, strengthening the role of the legislative branch as a key actor in the promotion, oversight, and advancement of marine and coastal policies offers a concrete pathway for consolidating democratic ocean governance. The incorporation of a blue approach into parliamentary agendas, together with strengthening the technical capacity of legislators and their advisors, will be critical to accelerating the regulatory transformation required for the region to address the challenges and opportunities associated with sustainable marine development.



Quintana Roo, Mexico

Table 21.
Matrix of common legislative and regulatory typologies in LAC

Legislative typology	Primary purpose	Common examples
Fisheries and aquaculture legislation	Regulate marine extractive and productive activities while promoting sustainability	General Fisheries Act; Sustainable Aquaculture Act
Environmental legislation	Establish general principles for environmental protection and conservation	Environmental Protection Act; Ecosystem Protection Act
Biodiversity legislation	Protect genetic diversity, marine ecosystems, and vulnerable species	Biodiversity Act; Wildlife Protection Codes
Protected areas legislation	Establish the creation, management, and oversight of MPAs	Natural Parks Act; Natural Reserves Act
Climate change legislation	Address climate change mitigation and adaptation, including threats to the marine environment	Framework Climate Change Act; National Adaptation Plans
Sustainable tourism legislation	Promote marine tourism activities based on ecological sustainability criteria	Responsible Tourism Act; Marine Activity Regulations
Marine energy legislation	Regulate ocean energy technologies	Regulations governing offshore wind, wave, and tidal energy
Coastal planning regulations	Regulate the use of marine and coastal space based on sustainability criteria	Marine Spatial Planning, Strategic Environmental Assessment (SEA), and Coastal Zoning

Source: Authors.



Regional cooperation initiatives

The Sustainable Blue Economy paradigm, as a mechanism for linking economic development and marine sustainability, is being embraced across LAC through a range of regional and national initiatives that have begun to consolidate in recent years. These efforts are creating frameworks for cooperation, governance, and territorial action aimed at harnessing the potential of marine and coastal ecosystems in a sustainable, inclusive, and resilient manner.

One of the most notable features of this process is the growing role of regional and multilateral cooperation. Platforms such as the OECS, the Central American Integration System (SICA), the Central American Commission on Environment and Development (CCAD), and the Southeast Pacific Marine Spatial Planning Network (REMPSE) have been instrumental in promoting the exchange of good practices, harmonizing policies, and developing joint projects.

Declarations such as the Bridgetown Declaration on the Sustainable Blue Economy,²⁷⁷ signed by several Caribbean states, reflect a concrete political commitment to a shared vision of ocean governance. These initiatives promote cooperation that transcends national borders, recognizing marine ecosystems as common goods that require collaborative strategies for their sustainable management.

At the regional level, dialogue and cooperation platforms have been established to advance a shared SBE vision. The Latin America and Caribbean Blue Economy Summit, held in Honduras in 2019, marked an important milestone through the adoption of the Roatán Commitments,²⁷⁸ which set out guidelines for a sustainable marine and coastal development model that brings together governments, the private sector, civil society, and academia.

Within the Mesoamerican Reef System (MAR), shared by Belize, Guatemala, Honduras, and Mexico, the Regional Blue Economy Protocol²⁷⁹ represents a key cooperation mechanism. Promoted by CCAD, WWF, and The Nature Conservancy, it advances a ridge-to-reef approach through common guidelines for the sustainable management of marine and coastal resources.

The CMAR,²⁸⁰ comprising Colombia, Costa Rica, Ecuador, and Panama, is a leading example of transboundary marine conservation. Its ecosystem-based approach has enabled the expansion of marine protected areas, collaborative monitoring of migratory species, and the coordination of national policies within a regional framework. CMAR has become one of the most established examples of shared marine governance.

A particularly innovative feature of CMAR is its financing mechanism: the CMAR Project Finance for Permanence (PFP),²⁸¹ which combines contributions from governments, philanthropic donors, international cooperation partners, and public-private partnerships to secure long-term financial resources linked to clear conservation and sustainability commitments. This approach not only helps ensure the continuity of conservation efforts but is also emerging as a replicable model for other transboundary marine conservation initiatives worldwide.²⁸²

The Cartagena Convention,²⁸³ in force since 1986 and coordinated by UNEP, has established the legal foundation for preventing marine pollution and harmonizing environmental policies among Caribbean countries. Through its regional protocols, it promotes the development of national legislation related to the protection of marine ecosystems and the management of hazardous waste, as well as the institutional strengthening of coastal environmental authorities.

Galapagos, Ecuador



Table 22.
Regional cooperation initiatives

Initiative / mechanism	Countries / region	Main objective	Key elements	Achievements / key outcomes
Organisation of Eastern Caribbean States (OECS)	OECS member states (Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Montserrat)	Implement the Eastern Caribbean Regional Ocean Policy (ECROP) to advance the blue economy Integrated ocean management	ECROP and its Action Plan OECS Blue Economy Strategy CROP Project (World Bank/GEF)	Marine spatial planning plans adopted in five member states National ocean policies adopted Strengthened regional ocean governance
Central American Commission on Environment and Development (CCAD)	SICA member countries	Coordinate regional environmental policies and strategies	Regional Environmental Framework Strategy (ERAM) Central American Environmental Plan (PARCA)	Implementation of ERAM 2021–2025 GEF-funded projects for marine and freshwater ecosystems
Southeast Pacific Marine Planning Network (REMPSE)	Southeast Pacific (Chile, Colombia, Ecuador, Panama, and Peru)	Strengthen marine spatial planning (MSP) capacities and regional information systems	SPINCAM Programme Regional MPA network OBIS–CPPS node	Three phases of SPINCAM, including indicators and MSP training courses Pilot plans Marine and coastal data repositories
Bridgetown Declaration	LAC (Ministerial Forum, Barbados)	Reinforce regional commitments to climate resilience Support social protection and the 2030 Agenda	Ministerial declaration coordinated by UNDP and LAC governments	Approved in November 2024 Reference policy framework for national policies and regional cooperation
Roatán Commitments – LAC Blue Economy Summit (2019)	LAC	Provide guidelines for a sustainable marine and coastal development model	Integration of governments, the private sector, civil society, and academia	Establishment of regional cooperation principles for the Sustainable Blue Economy
Regional Blue Economy Protocol – SAM	Belize, Guatemala, Honduras, and Mexico	Promote the sustainable management of the Mesoamerican Reef System	Ridge-to-reef approach Common guidelines	Regional coordination for reef conservation and sustainable use
Eastern Tropical Pacific Marine Corridor (CMAR)	Colombia, Costa Rica, Ecuador, and Panama	Promote transboundary marine conservation through an ecosystembased approach	Expansion of MPAs Collaborative monitoring of migratory species Policy coordination	Creation of the CMAR PFP, providing long-term financing through public, private, and philanthropic contributions

Initiative / mechanism	Countries / region	Main objective	Key elements	Achievements / key outcomes
Cartagena Convention	Caribbean countries	Prevent marine pollution Harmonize environmental policies	Regional protocols Institutional strengthening Ecosystem-based approach	Regional legal framework in place since 1986 Framework for addressing environmental challenges, including plastic pollution, sargassum, and climate change
Regional Blue Growth Strategy – SICA	SICA member countries (Central America)	Integrate marine sustainability into economic development plans	Habitat conservation Sustainable fisheries Marine tourism Integrated management of marine and coastal areas	Alignment with the SDGs Alignment with the Paris Agreement and the Global Biodiversity Framework Mobilization of international funding
Gulf of Fonseca Projects	El Salvador, Honduras, and Nicaragua	Promote the sustainable management of shared coastal and marine ecosystems	Sustainable fisheries Mangrove restoration Participatory local governance	Implementation of bilateral and trilateral projects
Mesoamerican Pacific Alliance	Guatemala, Honduras, Mexico, Nicaragua, and Panama	Conserve marine ecosystems Strengthen sustainable livelihoods	Participatory local governance Coordinated multilevel actions	Subregional collaboration for conservation and sustainable coastal development

Source: Authors.



In addition, the Cartagena Convention has been instrumental in introducing the ecosystem approach to regional marine management and has served as a framework for addressing emerging challenges such as plastic pollution, large-scale sargassum influxes, and climate resilience.²⁸⁴ While it remains one of the most established environmental governance instruments in the Caribbean, it faces significant challenges related to financing, technical capacity, and effective implementation, particularly in SIDS.²⁸⁵ Strengthening the Convention is essential for enabling the region to align with recent global commitments, including the future Global Plastics Agreement currently being negotiated under the United Nations Environment Assembly (UNEA).²⁸⁶

SICA has also adopted a Regional Blue Growth Strategy²⁸⁷ that incorporates marine sustainability into the economic development plans of its member countries. Aligned with the 2030 Agenda, the strategy proposes concrete measures related to habitat conservation, sustainable fisheries, marine tourism, and integrated marine and coastal spatial management. It also serves as a key platform for coordinating national policies, avoiding fragmented efforts, and fostering regional cooperation.²⁸⁸ The

Sustainable ocean plans

The progressive development of public policies aimed at the environmentally sustainable management of the ocean and its resources promotes the structuring of initiatives and the coordination of sectoral and territorial efforts, creating increasingly well-defined opportunities for social and economic growth along the pathway to a Sustainable Blue Economy.

In line with the recommendations of the High-Level Panel for a Sustainable Ocean Economy, SOPs²⁹³ are essential instruments for translating political commitments into concrete action, ensuring that 100% of the ocean under national jurisdiction is managed

strategy seeks to mobilize international financing, including green and multilateral funds, to strengthen local capacities and advance a climate-resilient SBE.²⁸⁹ Finally, it reinforces the links between regional commitments and global processes such as the Paris Agreement, the Global Biodiversity Framework, and the SDGs, positioning Central America as a relevant actor in international discussions on marine sustainability.²⁹⁰

In the Gulf of Fonseca, shared by El Salvador, Honduras, and Nicaragua, binational and trinational projects have been developed to improve the sustainable management of coastal and marine ecosystems. These efforts include the implementation of sustainable fisheries practices, mangrove restoration, and participatory local governance.²⁹¹

The subregional partnership among Guatemala, Honduras, Mexico, Nicaragua, and Panama promotes coordinated actions along the Mesoamerican Pacific Corridor aimed at conserving marine ecosystems and strengthening sustainable livelihoods for fishing and coastal communities. This collaboration is distinguished by its ecosystem-based and multilevel approach.²⁹²

sustainably. These plans make it possible to integrate social, environmental, and economic objectives while strengthening the resilience of ecosystems and coastal communities.

SOPs are intended to guide public- and private-sector decision-makers on how to sustainably manage a nation's ocean area under national jurisdiction in order to advance long-term economic and social development while protecting the natural marine ecosystems that support that development.

These plans²⁹⁴ constitute a unifying framework that brings together both existing ocean-related plans, processes, and policies and new initiatives, creating a coherent and integrated framework. They also help reconcile competing uses of the ocean and its resources by incorporating and consolidating already established mechanisms, such as ocean industry development plans, marine spatial plans, and area-based conservation and biodiversity measures.

To support the development and implementation of Sustainable Ocean Plans, Ocean Action 2030²⁹⁵ was created in response to the global call issued by the High-Level Panel for a Sustainable Ocean Economy (Ocean Panel), which in its 2020 joint statement urged all coastal countries to develop SOPs to ensure the sustainable management of 100% of waters under national jurisdiction by 2030.

Recognizing that many countries, particularly in regions such as LAC, face capacity, financing, and coordination barriers to advancing this agenda, a group of multilateral, financial, and technical institutions came together to form Ocean Action 2030. This global coalition seeks to support countries not only in planning, but also in the implementation and financing of robust, inclusive SOPs aligned with international commitments such as the Paris Agreement,²⁹⁶ the Global Biodiversity Framework,²⁹⁷ and the BBNJ.²⁹⁸

Scientific and technological research

LAC is home to an extensive network of more than 120 institutions and research centers dedicated to the study of marine and coastal ecosystems, most of them affiliated with public universities and state-owned or mixed-capital organizations. These entities play a

In this context, CAF plays a strategic role as an active member of Ocean Action 2030, providing technical and financial assistance to countries across the region to translate ambition into action. A central pillar of the coalition's work is the Rapid Assistance Fund (RAF),²⁹⁹ a mechanism designed to provide catalytic resources that enable countries to take the first steps toward developing SOPs, launching planning processes, and strengthening key institutional capacities. In addition, public-private partnerships are essential for mobilizing innovative financing, attracting sustainable enterprises and technologies, and strengthening local blue innovation ecosystems.

SOPs also facilitate the mobilization of multilevel financing mechanisms, ensure the active participation of local and Indigenous communities, and strengthen technical and institutional capacities around clearly defined priorities. In particular, in the coastal areas of LAC, where socio-environmental challenges are especially acute, SOPs provide a platform for organizing the use of marine and coastal space, reducing sectoral conflicts, and ensuring that development decisions respect ecological limits, respond to local needs, and contribute to climate resilience.

Advancing the adoption, implementation, and financing of SOPs is therefore a strategic priority for the region. Doing so will help consolidate a robust and coherent model of ocean governance capable of translating the potential of the Sustainable Blue Economy into tangible benefits for people and ecosystems.

crucial role in generating knowledge to support public policymaking and the development of strategic sectors of the blue economy.³⁰⁰

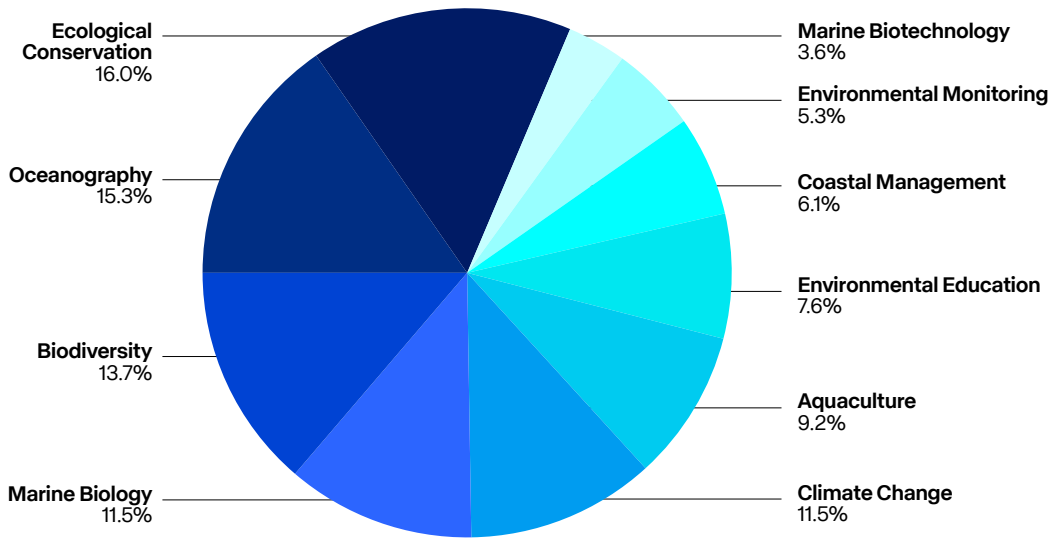
Among the most prominent areas of research are marine biodiversity, species biology and ecology, coastal habitat conservation, and applied biotechnology. Institutions such as the Oceanographic Institute of Venezuela,³⁰¹ the Autonomous University of Baja California, the Autonomous University of Baja California Sur,³⁰² the CINVESTAV,³⁰³ and the Universidad del Mar (Universidad of the Sea)³⁰⁴ in Mexico, the National Biodiversity Institute (INBio)³⁰⁵ and the Tropical Agricultural Research and Higher Education Center (CATIE)³⁰⁶ in Costa Rica; and the José Benito Vives de Andrés Institute of Marine and Coastal Research (INVEMAR) in Colombia lead initiatives in these fields. In addition, the Smithsonian Tropical Research Institute³⁰⁷ in Panama and its Bocas del Toro Research Station provide world-class research platforms that attract scientists from around the world.

Despite these advances, significant challenges remain, including limited investment in research

and development (R&D), the absence of industrial policies focused on biodiversity, and the need to combat biopiracy. Experts such as Amir Lebdioui³⁰⁸ have noted that transforming the region's natural wealth into sustainable technological solutions will require a substantial increase in R&D investment and the strengthening of local scientific ecosystems. Organizations such as the TIDE Center and CAF³⁰⁹ are already promoting regional collaboration platforms to help drive this transformation.

The most extensively studied area is biodiversity, followed by marine biology and ecological conservation, highlighting a clear focus on understanding and protecting marine ecosystems. This knowledge is essential for informing public policies related to regional ecosystems and for generating information that supports economic development and growth (Graph 1).³¹⁰

Graph 1.
Unified distribution of research areas in LAC



Source: Authors with data from 120 research institutions in LAC

However, the analysis conducted reveals gaps in areas that are critical to the effective implementation of the Sustainable Blue Economy, including:

- Marine technological innovation.
- Marine renewable energy.
- Nature-positive engineering.
- Biotechnology.
- Sustainable aquaculture.
- Marine pollution.
- SBE and entrepreneurship.
- Integrated coastal zone management.
- Law of the sea and ocean governance.
- Sustainable coastal tourism.

These gaps have important strategic implications, as the topics identified are intrinsically linked to the pillars of sustainable economic development and food security. Yet they currently do not receive research attention commensurate with their importance. This thematic imbalance may limit the region's ability to anticipate and adapt effectively to emerging economic and environmental challenges. Promoting the development of these lines of research is essential for building a robust structural framework that strengthens the implementation of the SBE, supports informed decision-making, and creates enabling conditions for innovation, investment, and long-term socio-environmental resilience.

Innovation

With regard to promoting innovation as a tool for addressing the challenges of the SBE, the region remains at an early stage of development. According to the OECD,³¹¹ accelerating the implementation of the SBE requires prioritizing research areas related to clean energy, digitalization, smart technologies, and ocean governance grounded in scientific evidence. This approach underscores the importance of supporting technology- and data-driven ventures

Promoting applied research programs in emerging fields such as marine technological innovation, marine bioprospecting, biomimicry, sustainable coastal tourism, and ocean-based circular economy models constitutes a strategic pillar for advancing the consolidation of the SBE in LAC. These efforts should be accompanied by stronger public-private partnerships and the design of effective investment and international cooperation mechanisms capable of activating ecosystems of knowledge, innovation, and sustainable productive transformation.

This vision is fully aligned with CAF's strategic priorities, which seek to promote regional integration, strengthen environmental sustainability, and foster the development of resilient economies through inclusive models based on the responsible use of natural capital. It is also aligned with the WEF agenda, which seeks to accelerate the sustainable transition of ocean-based industries through innovation, impact investment, and multistakeholder collaboration, while also reflecting WRI's guiding principles, which focus on strengthening environmental governance, optimizing the use of natural resources, and enhancing institutional capacities to respond effectively to global climate challenges.

Through this integrated approach, the region can close critical knowledge gaps, stimulate new local economies, and strengthen the social, economic, and environmental resilience of its coastal and marine areas.

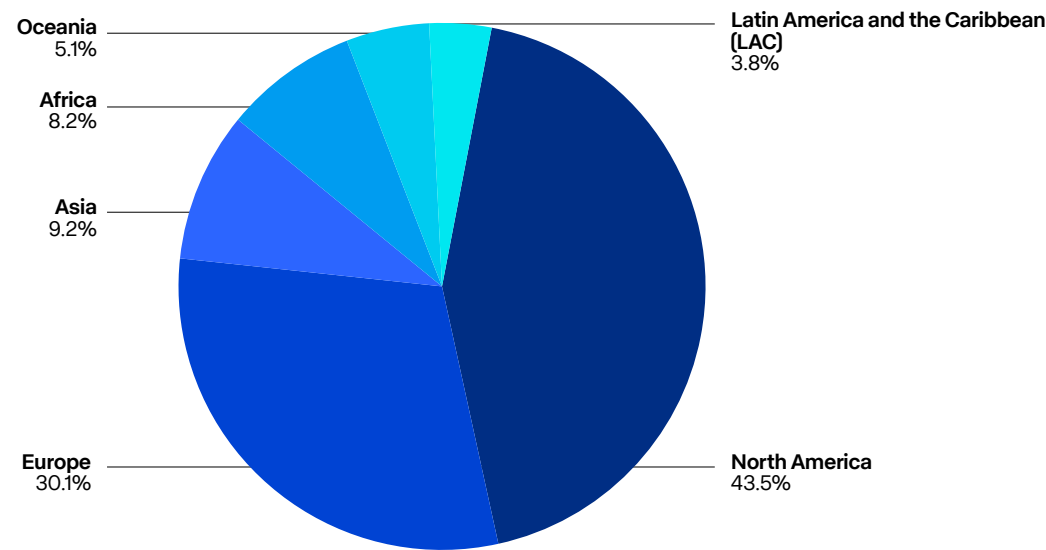
as effective mechanisms for contributing to the sustainability of marine and coastal ecosystems while also promoting the socioeconomic development of coastal territories.

In this context, the experience of 1000 Ocean Startups³¹² provides an illustrative overview of the development of ocean-related innovation at the global level. Based on this information, Graph 2 was developed, showing that developed countries account for the majority of ocean ventures, revealing a high degree of geographic concentration and a pronounced asymmetry in the distribution of innovation capacities. This reality represents both a structural challenge and a strategic opportunity for LAC.

1000 Ocean Startups is a global benchmark for promoting ocean innovation, with a network of more than 60 member organizations and 550 supported startups that have mobilized nearly USD 2.5 billion

in assets under management. In LAC, relevant participants already include Reciprocal (Chile), Ilha Hub (Brazil), and Blue Sink (Colombia), which promote projects in sustainable aquaculture, marine biotechnology, and blue carbon capture. In addition, several of the affiliated startups are redefining value chains through circular materials, fisheries traceability, and coastal waste management. These experiences confirm that the region possesses emerging capabilities to generate blue innovation with tangible environmental and social impacts, while reinforcing the importance of connecting this ecosystem with the financial and cooperation instruments that CAF is already promoting across the region.

Graph 2.
Geographic distribution of ocean-impact startups



Source: Authors based on information from 1000 Ocean Startups

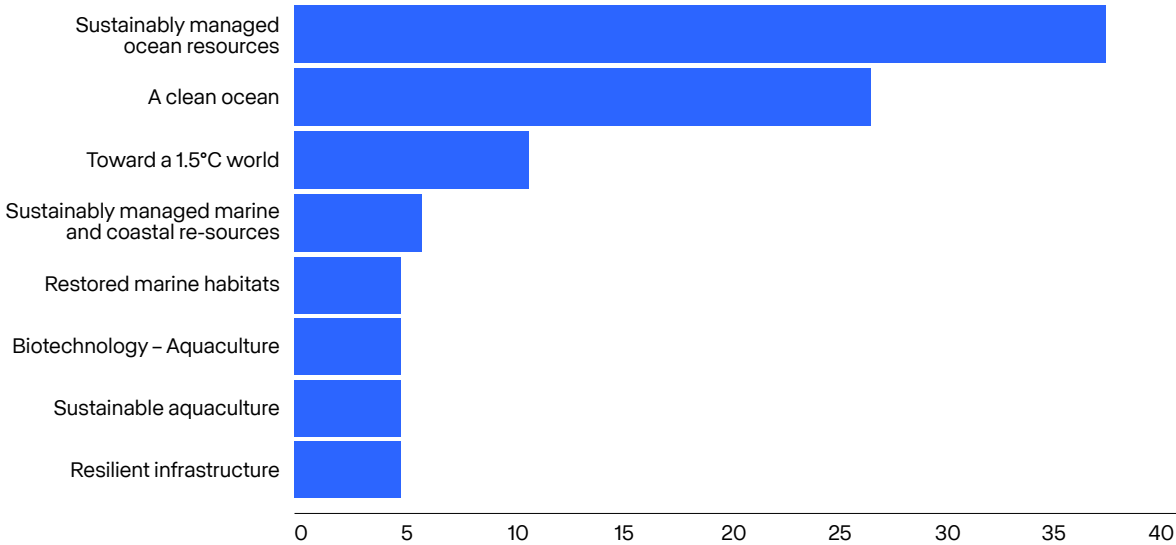
The graph highlights the marginal participation of LAC in the global ocean innovation ecosystem, underscoring the urgent need for action at all levels. Although other innovative initiatives are being promoted across the region, they remain limited in number compared with those found elsewhere in the world.

The main areas of development among startups in LAC are associated with the application of technology across sectors such as aquaculture, plastic and fishing-net recycling, marine ecosystem restoration and protection, biotechnology development, and food production, among others. Graph 3 suggests that, although still at an early stage, technology development and innovation initiatives driven by startups in the region are generating innovative solutions for sustainable ocean resource management, pollution control, climate resilience, and marine habitat conservation.

A distinctive feature of this emerging ecosystem is its focus on inclusive innovation. Several initiatives are led by women and coastal communities that combine local knowledge with technology, such as Blue Sink in Colombia, which integrates carbon capture with seabed restoration. These experiences demonstrate that blue innovation in the region generates not only economic value, but also social and environmental value, expanding opportunities for local entrepreneurs and strengthening participatory governance in coastal areas.

Strengthening support for innovation—from the consolidation of regulatory frameworks and ocean governance arrangements to the creation of innovative financing mechanisms, greater engagement by academia, and stronger political commitment—will enhance local capacities and help position LAC as an emerging player in the transition toward the SBE.

Graph 3.
Primary impact areas of startups supported by 1000 Ocean Startups in LAC



Source: Authors.

5

Challenges, risks, and opportunities

The previous chapters have examined the state of the SBE in LAC, both from a regional perspective and through the particular dynamics of each subregion. This review made it possible to identify common trends, emerging progress, and areas of development that remain fragmented.

This chapter builds on those findings, but through a different lens: it systematically organizes the main challenges, risks, and opportunities facing the region. Rather than presenting new case studies or data, it seeks to provide a cross-cutting analysis that synthesizes the factors shaping the future of the SBE and helps illuminate its transformative potential.

This analysis is particularly relevant because LAC combines a geostrategic location that is critical to

global maritime trade—with the Panama Canal serving as a strategic hub—with a diversity of ecosystems that provide essential services to the planet. At the same time, the international context, shaped by the energy transition, the decarbonization of maritime transport, and food security challenges, places the region in a strategic position within the global ocean agenda.

Presenting this review in a separate chapter makes it possible to distinguish more clearly where the main structural constraints are concentrated, which risks may jeopardize the progress achieved to date, and which areas represent opportunities for transformation. In this way, the chapter serves as a bridge between the descriptive review of the current situation and the strategic reflection needed to guide policy, investment, and cooperation decisions.

Challenges

It must be recognized that LAC faces structural shortcomings that undermine its sustainability. The degradation of marine and coastal ecosystems caused by overfishing, pollution—including the 27.7 million tons of plastic waste generated annually by the region (12% of the global total)³¹³—and the growing impacts of climate change threaten ecological integrity and food security. These challenges are compounded by political and economic disruptions that undermine the continuity and coherence of public policies aimed at marine and coastal development.

Advancing the Sustainable Blue Economy in the region requires a holistic, cross-cutting, and intersectoral approach capable of addressing the complex social, economic, environmental, and cultural dynamics that converge in marine and coastal areas.

Among the main structural challenges limiting the development of the blue economy potential in LAC are the following:

Fragmented regional vision. LAC already has several subregional and ecosystem-based coordination initiatives that advance the Sustainable Blue Economy, including the PROCARIBE+ mechanism, the SICA's Regional Blue Growth Strategy (ERCA), the Mesoamerican Reef System (MAR) Regional Blue Economy Protocol, and the CMAR. However, these efforts remain isolated and their adoption is still limited. There is not yet a regional integration process capable of scaling these mechanisms, nor are there harmonized criteria—such as a common taxonomy or an intergovernmental SBE policy—which would require significant progress in multilevel governance. This fragmentation constrains the development of a cohesive regional agenda, the implementation of large-scale projects, and the region's ability to speak with a single voice in international blue economy forums. As a result, LAC's capacity to influence the global agenda and advocate for a common position that advances its interests and strengths is diminished.

Weak intersectoral and interinstitutional coordination and regulatory gaps. From an institutional perspective, LAC faces a series of gaps that hinder the coherent and large-scale implementation of the SBE. In several countries, progress is occurring primarily through isolated sectoral policies—fisheries, conservation, coastal monitoring, trade policy, and infrastructure development—without a comprehensive national SBE instrument or SOP to coordinate these efforts and harmonize existing regulations. This occurs even in countries with environmental and marine governance frameworks as robust as those of Mexico and Colombia, where such regulations coexist without effective integration across sectors. By contrast, countries such as Panama and Costa Rica have established robust and coordinated frameworks, but this experience has yet to extend across the region as a whole. This reflects differing levels of institutional maturity throughout the region and creates regulatory overlap that can confuse both investors and coastal communities. At the local level, this lack of coordination leaves many coastal municipalities without the technical capacity or resources needed to address critical challenges such as coastal erosion, sea-level rise, and pollution. This, in turn, intensifies socio-environmental conflicts and limits policy implementation to short-term, project-based interventions. In the absence of a multilevel framework and harmonized operational protocols, each new initiative must navigate disparate regulatory environments, slowing the deployment of structural sustainable solutions.

High informality and low productivity in key sectors. From an economic perspective, key sectors associated with the Sustainable Blue Economy face high levels of informality and low productivity, reducing their competitiveness and limiting their ability to attract investment. This is particularly evident in small-scale fisheries, a cornerstone of food security and coastal economies, which operate largely in the informal sector. The fisheries sector in LAC, as is the case globally, is affected by the overexploitation of fish stocks: collapsed fish populations have doubled over the past three decades, and catches declined by 34% between 1999 and 2019, resulting in annual losses of approximately USD 3.2 billion due to management deficiencies and IUU fishing. Aquaculture, a growing sector, continues

to be characterized by small, dispersed farms with low productivity, a lack of certifications, and limited access to formal markets. Similarly, coastal tourism—a major source of employment in many countries and vital to SIDS—remains largely informal, with low quality standards and growth that often occurs without a sustainability focus, placing pressure on vulnerable ecosystems. These subsectors share a number of constraints: fragmented value chains, incomplete registries, low levels of technology adoption, and shortcomings in infrastructure (cold chains and landing sites), connectivity, and access to basic services in remote areas. These challenges are compounded by the limited availability of specialized technical and vocational training, which hinders the modernization of practices and reduces the region's ability to attract sustainable investment.

Gaps in environmental education, technical training, and talent development. Although the region has a strong foundation in biodiversity, marine biology, and ecological conservation research, critical gaps remain in areas that are essential to the SBE, including marine technological innovation; bioprospecting; marine pollution and waste; SBE entrepreneurship and business models; integrated coastal zone management; the law of the sea and ocean governance; and sustainable coastal tourism. These topics, which are intrinsically linked to the pillars of sustainable economic development and food security, do not receive research attention or technical training commensurate with their importance. This imbalance limits the region's ability to anticipate and adapt to emerging challenges—including new technologies, environmental standards, and market dynamics—and weakens the scientific foundation for decision-making. In addition, language barriers and unequal access to up-to-date technical and financial information in Spanish and Portuguese hinder the regional uptake of knowledge and constrain cross-border collaboration.

High levels of poverty and vulnerability in coastal communities. High levels of poverty and vulnerability in fishing and coastal communities critically constrain their ability to participate in the productive transition toward an SBE. In 2023, droughts and extreme weather events in the Caribbean left 13.8 million people facing food insecurity, highlighting the vulnerability of these

territories to climate shocks. At the same time, coastal tourism accounts for approximately 8% of regional employment, representing around 18.2 million jobs, and in SIDSs it can contribute more than 25% of national GDP. Against this backdrop of economic instability, communities often lack stable sources of income and access to the financing needed to invest in basic infrastructure, such as cold chains and vessel modernization, or in clean technologies that support sustainable practices. As a result, many fishing communities are forced to prioritize the immediate exploitation of resources, perpetuating cycles of overfishing or constraining productive transition processes. This situation limits both the legitimacy and the reach of SBE policies, as they lack the active participation and investment capacity of those who depend directly on the ocean for their livelihoods.

Weaknesses in marine and coastal spatial planning. Despite legislative advances in countries such as Barbados, Dominica, and the Dominican Republic—which have developed national strategies that coherently integrate the environmental, social, and economic dimensions of the Sustainable Blue Economy—the absence or weakness of marine and coastal spatial plans remains widespread across much of LAC. In the Southern Cone, for example, Chile has a National Ocean Policy supported by a solid legal framework, Brazil has formalized its Sectoral Plan for Marine Resources, and Argentina is advancing the Pampa Azul Strategy. However, regulation of emerging areas—such as blue carbon, offshore wind energy, and deep-sea bioprospecting—remains limited or nonexistent, while enforcement and monitoring mechanisms continue to be weak. In the northern subregion of South America, Ecuador and Peru have implemented national policies and aquaculture strategies, but these instruments have not yet been integrated into robust institutional frameworks, limiting their alignment with a holistic vision of sustainable ocean management. In Colombia, the Coastal Environmental Management Units (UACs) and their associated integrated management plans (POMIs), more than a decade after their legal establishment, remain at an early stage of implementation and lack the capacity to coordinate across sectors.

Insufficient economic, social, and environmental information. The region lacks integrated marine information systems capable of rigorously quantifying the contribution of the SBE to GDP and assessing its social and environmental benefits. With the exception of some isolated advances in estimating the value of the SBE, available data remain largely limited to traditional sectors such as fisheries and tourism, obscuring opportunities in emerging areas such as blue carbon, marine biotechnology, and ocean renewable energy. This deficit is compounded by the absence of unified monitoring infrastructure, marine product traceability platforms, and integrated coastal databases capable of supporting marine spatial planning and evidence-based decision-making. Some countries, particularly Costa Rica, have begun to lead efforts to incorporate ocean accounts into national accounting systems, but this work remains ongoing. In the absence of clear metrics, adequate technological tools, and interoperable information frameworks, governments and the private sector face difficulties in justifying large-scale investments, aligning public policies with sustainability objectives, and harnessing the ocean's transformative potential as an economic, social, and environmental driver.

Limited coordination among science, technology, entrepreneurship, and investment. LAC has begun to explore innovation for the Sustainable Blue Economy through both public policies and community-based innovation initiatives in coastal areas, but these efforts remain incipient and fragmented. According to the OECD, prioritizing research in clean energy, digitalization, smart technologies, and evidence-based ocean governance is essential for accelerating the implementation of the SBE. However, the global initiative 1000 Ocean Startups shows that developed countries account for the majority of ocean ventures, while LAC participates only marginally in this global ecosystem, revealing a pronounced asymmetry in innovation capabilities. At the local level, startups in the region focus on areas such as precision aquaculture, marine plastic recycling, the restoration and protection of coastal habitats, marine biotechnology, and sustainable food production. Even so, without an effective bridge between research institutes, entrepreneurs, and sources



of financing, a fertile ecosystem for the continuous emergence of these initiatives does not take shape. As a result, the projects that do emerge tend to be sporadic, remain at the pilot stage, and fail to reach the scale needed to consolidate truly dynamic and sustainable value chains. The gap between knowledge generation and the availability of capital needed to transform ideas into impactful projects limits the emergence of micro, small, and medium-sized enterprises (MSMEs) that could provide technological, logistical, energy, and bioeconomy solutions linked to the ocean.

Insufficient logistics and technological infrastructure. Deficiencies in cold-chain systems and fishing equipment increase post-harvest costs and limit

competitiveness, while the lack of reliable connectivity and energy services in coastal areas prevents the deployment of technological solutions for monitoring and digital traceability. Likewise, the shortage of resilient port infrastructure—including modernized docks, coastal data centers, and processing facilities that meet sustainability standards—hampers the efficient management of marine products and increases post-harvest economic losses. This inadequate logistics and technological capacity further exacerbates institutional fragmentation, as the absence of a strong physical and digital foundation makes it difficult to implement SOPs and monitor compliance with them. As a result, the modernization of the sector and its integration into dynamic regional value chains are constrained.

Risks

LAC faces a range of systemic risks that threaten the viability of the SBE. These risks stem from environmental, social, economic, institutional and legal, technological, and geopolitical factors that are interconnected, such that their materialization in one area can amplify impacts in others. Based on the findings of this study, the following section identifies the risks facing the SBE as a pathway toward the sustainable development of marine and coastal areas in LAC, highlighting their relevance for SBE strategic planning.

Environmental risks

Environmental risks pose the greatest threat to the implementation of the SBE in LAC in terms of both likelihood and impact, given the direct dependence of marine and coastal ecosystems for a wide range of human activities across the region's coastal areas, particularly in SIDSs. These risks include:

- **Sea-level rise.** This is an increasing threat. The IPCC³¹⁴ estimates that global mean sea level rose by 3.7 mm per year between 2006 and 2018, with regional rates exceeding 4 mm per year in the Caribbean and along the Atlantic coast of South America. This phenomenon exposes cities such as Georgetown (Guyana), Colón (Panama), and several Caribbean islands to chronic flooding, loss of habitable land, and damage to port and tourism infrastructure.
- **More frequent and intense hurricanes and tropical storms.** Particularly in the Caribbean and the Gulf of Mexico, as documented by the World Meteorological Organization.³¹⁵ These events result in recurring damages amounting to billions of dollars. Hurricane Maria (2017) caused an estimated USD 93 billion in losses in Puerto Rico,³¹⁶ while Hurricanes Eta and Iota (2020) affected more than 7 million people in Central America.³¹⁷



- **Altered hydrological cycles and prolonged droughts.** These exacerbate freshwater scarcity in coastal areas, affecting aquaculture, coastal agriculture, and tourism activities, while also directly impacting maritime transport through the Panama Canal due to low water levels in Gatun Lake. The effects of prolonged droughts are particularly evident in food security, especially in SIDS. In 2024, Central America and northern South America recorded precipitation deficits of up to 40%.³¹⁸
- **Degradation of coastal and marine ecosystems.** The degradation of mangroves, coral reefs, and seagrass beds drastically reduces carbon sequestration capacity, protection from storms, and support for fishing communities. According to UNEP,³¹⁹ the region has lost more than 20% of its mangrove cover since 1980, with direct impacts on coastal resilience.
- **Marine pollution from plastics, industrial effluents, and petroleum products.** This is another critical threat. The Cartagena Convention³²⁰ estimates that between 600,000 and 1.4 million tons of plastic waste enter the Wider Caribbean each year, affecting marine fauna and human health.
- **Biodiversity loss and the decline of ecosystem services.** These trends are exacerbated by resource overexploitation and habitat degradation. FAO³²¹ warns that one-third of assessed fish stocks in LAC are overexploited, compromising regional food security.
- **Increased coastal erosion and aquifer salinization.** These processes threaten the habitability of low-lying areas and the availability of freshwater resources.
- **More frequent coral bleaching and the loss of critical habitats.** NOAA³²² has confirmed the fourth global coral bleaching event, with severe impacts on the Mesoamerican Reef and the loss of more than 50% of coral cover at key sites in Belize and Honduras.
- **Ocean warming and acidification.** These processes threaten the health of marine ecosystems.

- **Overfishing and illegal, unreported, and unregulated (IUU) fishing.** These practices continue to erode natural capital. According to FAO,³²³ 35% of assessed fish stocks in LAC are overexploited, threatening food security and coastal livelihoods.
- **Large-scale sargassum proliferation and accumulation.** Excessive accumulations of biomass on beaches and in coastal areas generate brown tides that reduce light penetration, alter pH levels, decrease dissolved oxygen, and raise local temperatures, affecting mangroves, seagrass beds, and coral reefs. In addition, this phenomenon entails high management and removal costs, significant losses for coastal tourism, impacts on water quality, and public health risks due to the release of gases such as hydrogen sulfide during decomposition.

Social risks

- **High dependence of coastal communities in LAC on climate- and market-vulnerable activities** such as small-scale fisheries and marine and coastal tourism. In the insular Caribbean, marine-related tourism accounts for more than 25% of total employment and as much as 50% of GDP in some states.³²⁴
- **High exposure to extreme events.** This is compounded by low levels of socioeconomic resilience. ECLAC³²⁵ notes that 32% of the population living in coastal areas experiences multidimensional poverty, limiting their ability to recover from disasters.
- **Climate migration.** This manifests itself through displacement driven by recurrent flooding, loss of productive land, hurricane impacts, salinization of water sources, and other factors which, when combined with broader social challenges such as violence, exacerbate migration and displacement flows. This phenomenon is already visible in low-lying islands and coastal areas of Central America. The International Organization for Migration (IOM)³²⁶ and MOVE-LAM³²⁷ have documented displacement in Honduras, El Salvador, Belize, and Guatemala.

- **Conflicts over the use of and access to marine resources.** These increase as ecosystems degrade. Examples include tensions between industrial fishing fleets and small-scale fishers, which have given rise to various forms of protest that affect local governance.
- **Unequal access to economic opportunities and technical training.** In many coastal areas of LAC, economic opportunities are concentrated in low-productivity, highly seasonal activities, perpetuating cycles of poverty and vulnerability. Limited access to specialized technical education contributes to productivity gaps. This inequality constrains communities' ability to participate in higher value-added value chains, attract private investment, and adopt clean technologies.

Economic risks

- **Maritime trade—vital for the SBE—is exposed to critical vulnerabilities.** In 2023–2024, the Panama Canal authorities were forced to limit both the number of daily transits and the maximum permitted draft.³²⁸ The reduction in activity caused by drought resulted in significant losses associated with congestion and route diversions, logistical delays, and additional costs equivalent to 32 days of operational disruption.
- **Volatility in foreign direct investment (FDI).** This jeopardizes financing for strategic projects. In 2024, FDI flows to LAC declined by 12%, with maritime transport and marine energy among the sectors most affected.³²⁹
- **Lagging port infrastructure.** Only 14% of medium-sized ports have advanced digital logistics management systems (UNCTAD, 2024),³³⁰ limiting efficiency and the ability to adapt to sustainability standards and the imposition of non-tariff barriers.
- **Dependence on external markets.** This is particularly evident for key products such as shrimp, tuna, and oil, exposing the region to price fluctuations and limiting access to financing for Sustainable Blue

Economy projects, especially among MSMEs and coastal communities.

- **Limited access to financing for SBE projects.** In LAC, fewer than 15% of micro and small enterprises in the marine and coastal sector have access to formal financing,³³¹ due to a lack of collateral, the high cost of credit, and the limited availability of financial instruments tailored to the Sustainable Blue Economy.

Institutional and legal risks

- **Regulatory fragmentation.** This hinders integrated marine and coastal management. Only 30% of the countries in the region have officially adopted marine spatial plans.³³²
- **Legal uncertainty.** This discourages long-term investment. Abrupt regulatory changes, complex administrative procedures, and licenses subject to discretionary decision-making reduce predictability for investors, increase financing costs, and discourage long-term projects in strategic SBE sectors.
- **Limited implementation and enforcement of environmental policies and legislation.** Weak enforcement of regulatory frameworks undermines the protection of marine and coastal ecosystems and creates incentives for unsustainable practices, reducing institutional credibility and the attractiveness of responsible investment.
- **Lack of up-to-date scientific data and information for decision-making.** The absence of robust monitoring systems and current data hampers evidence-based planning and management of the SBE, affecting policymaking and the efficient allocation of resources.
- **Administrative and bureaucratic complexity in licensing, concessions, and permitting processes.** Lengthy procedures, non-standardized requirements, and fragmented administrative processes slow project development, particularly for SMEs and coastal communities with more limited technical and financial capacity.

- Investor-State disputes. In 2024, 20% of new cases registered with ICSID involved countries in LAC, several of them related to extractive and marine and coastal sectors.³³³

Technological risks

- Technological gaps in clean energy, fisheries traceability, and port digitalization. These limit competitiveness. According to UNCTAD (2024), the average container dwell time at ports in the region is 5.3 days, compared with 2.4 days at leading ports worldwide.
- **Limited ocean observation capacity.** This reduces the effectiveness of adaptive management. Fewer than 50% of monitoring buoys in the Caribbean and the Southeast Pacific are operational,³³⁴ making it more difficult to detect threats such as marine heatwaves and oil spills at an early stage.

Geopolitical risks

- **Economic and technological competition among major powers (the US, China, and the EU).** This competition is reshaping supply chains and investment flows and may shift the focus of key markets away from LAC.³³⁵
- **Vulnerability of strategic routes** such as the Panama Canal, the Strait of Magellan, and the Caribbean to blockages or international conflicts. This represents a high-impact risk for trade and regional security.
- **Dependence on external markets for key marine and coastal exports.** The concentration of exports in a limited number of international markets exposes coastal economies to fluctuations in demand, external regulatory changes, and trade barriers, affecting their stability and competitiveness.
- **Risks arising from economic sanctions or global trade disputes.** Geopolitical tensions and the imposition of sanctions or trade restrictions may

limit access to strategic markets, disrupt supply chains, and generate significant economic losses for SBE sectors.

- **Pressure on shared marine resources resulting from territorial disputes or unresolved maritime boundaries.** The absence of definitive agreements on maritime boundaries fuels conflicts over access to fisheries, hydrocarbons, and other marine resources, hindering sustainable management and regional cooperation.
- **Greater exposure to fluctuations in multilateral agreements and international trade treaties.** The region's high degree of trade integration means that changes in trade agreements, tariffs, or global technical standards directly affect marine and coastal trade, creating uncertainty for producers and exporters.

Risks for small and medium-sized investment

- **Limited access to financing.** Fewer than 15% of micro and small marine and coastal enterprises have access to formal credit, due to collateral requirements that are difficult to meet, high financing costs, and the absence of financial products designed for the SBE. This constraint hinders innovation, the adoption of clean technologies, and productive scaling.
- **Legal uncertainty and abrupt regulatory changes.** These create uncertainty for long-term investment. Complex and fragmented administrative processes for obtaining licenses, concessions, and permits delay project execution and increase implementation costs.
- **Inadequate infrastructure and logistics.** Many secondary ports, fishing coves, and landing sites lack the operational capacity, connectivity, and support services needed for small producers to access markets with demanding quality standards.



Galinhos Dunes, Brazil

Table 23.
Risks

Risk category	Identified risk
Economic	High dependence on marine-coastal extractive sectors with limited economic diversification
	Volatility in international prices for marine products (fisheries, minerals, and energy)
	Limited access to financing for Sustainable Blue Economy projects, particularly for MSMEs and coastal communities
	Insufficient port and logistics infrastructure, or infrastructure not adapted to sustainability standards and the specific needs of small-scale industries
Environmental	Economic vulnerability to extreme events that disrupt supply chains
	Overfishing and illegal, unreported, and unregulated (IUU) fishing
	Degradation of coastal and marine ecosystems (mangroves, coral reefs, and seagrass beds)
	Marine pollution from plastics, hydrocarbons, and industrial effluents
	Ocean acidification and rising sea temperatures
	Biodiversity loss and declining ecosystem services
	Sea-level rise and loss of habitable and productive coastal areas
	Increasing frequency and intensity of hurricanes and tropical storms
	Disruption of hydrological cycles and increased rainfall variability
Social	More severe and prolonged droughts affecting freshwater availability in coastal areas, impacting crops and agriculture, and undermining food security. In the case of the Panama Canal, droughts also affect maritime traffic
	Increased coastal erosion and aquifer salinization
	Higher incidence of coral bleaching and loss of critical habitats

Risk category	Identified risk
Institutional	Fragmented or insufficient regulatory frameworks for the Sustainable Blue Economy
	Weak governance and interinstitutional coordination in marine-coastal management
	Limited implementation and enforcement of environmental policies and legislation
	Lack of up-to-date scientific data and information for decision-making
	Legal uncertainty and abrupt regulatory changes affecting investment predictability
	Administrative and bureaucratic complexity in licensing, concessions, and permitting processes
Technological	Investor-State disputes
	Low adoption of clean and digital technologies in marine-coastal sectors
	Limited capacity for ocean monitoring, control, and surveillance
	Technological gaps limiting access to innovation in coastal communities
Geopolitical	Limited technology transfer and cooperation in marine-coastal R&D
	Vulnerability of strategic maritime routes to international tensions
	Dependence on external markets for key marine-coastal exports
	Impact of economic and technological competition among major powers (United States, China, and the European Union) on investment and trade
	Risks arising from economic sanctions or global trade disputes
	Pressure on shared marine resources arising from territorial disputes or unresolved maritime boundaries
	Greater exposure to changes in multilateral agreements and international trade treaties

Source: Authors.



Table 24.
Risks to Sustainable Blue Economy development in LAC

Risk category	Description and relevance for MSMEs in the SBE
Access to financing	Limited availability of credit and financing tailored to the SBE, coupled with collateral requirements that are difficult to meet and high financing costs. This constrains innovation, technological upgrading, and the adoption of sustainable practices.
Legal uncertainty and abrupt regulatory changes	Regulatory instability and complex administrative procedures for licenses and concessions create uncertainty, increase project costs, and discourage long-term investment.
Inadequate infrastructure and logistics	Secondary ports and landing sites with limited operational capacity, poor connectivity, and a lack of logistics services tailored to small producers reduce competitiveness and market access.
Vulnerability to extreme climate events	Hurricanes, storms, droughts, and sea-level rise directly affect production facilities, vessels, aquaculture operations, and tourism areas, causing severe losses and limiting the ability to recover quickly.
Dependence on external markets and price volatility	Large fluctuations in demand and international prices for marine-coastal products and services (shrimp, tuna, seaweed, tourism) affect the income and stability of small producers and tourism operators.
Technological and technical capacity gaps	Limited access to clean technologies, traceability systems, environmental monitoring tools, and specialized training makes it difficult to meet international standards and access premium markets.
Pollution and ecosystem degradation	The loss of mangroves, coral reefs, and water quality reduces the availability of fisheries resources and the attractiveness of tourism destinations, undermining the productive base of small-scale investments.
Lack of data and market information	The lack of up-to-date statistics and trend analysis hinders strategic planning, niche market identification, and the preparation of bankable project proposals.

Source: Authors.



110 Strategic opportunities

Having mapped the main bottlenecks—from regulatory fragmentation to the lack of robust marine data—it is now time to shift attention to the drivers that can position LAC as a global laboratory and supplier of ocean-based solutions. The region not only possesses the competitive advantages discussed above, but has also begun to deploy cutting-edge financial instruments, innovations emerging organically from coastal communities, and subregional governance platforms.

These opportunities include the development of blue capital markets capable of mobilizing substantial resources for mangrove restoration projects and offshore renewable energy; the modernization of port infrastructure based on low-environmental-impact criteria; the creation of regenerative tourism and certified aquaculture corridors; and the promotion of marine biotechnology clusters. If implemented in

a coordinated and integrated manner, each of these opportunities can simultaneously contribute to the creation of quality jobs, the strengthening of local value chains, and the achievement of climate and biodiversity commitments.

Realizing these opportunities will, however, require multilevel governance that combines robust regulatory frameworks with public-private collaboration platforms and blended finance models. Table 25 presents a non-exhaustive set of these strategic opportunities, conceived as a starting point for designing high-impact interventions capable of transforming the region's vast marine natural capital into sustainable well-being and global recognition as a leader in the blue economy.

- **High vulnerability to extreme weather events.** Hurricanes, storms, droughts, and sea-level rise directly affect production facilities, vessels, aquaculture operations, and tourism areas, causing total losses and prolonged periods of inactivity.
- **Dependence on external markets and international price fluctuations.** These significantly affect the income of small-scale operations, particularly those involved in products such as shrimp, tuna, seaweed, and tourism services, whose demand is sensitive to global economic and political factors.
- **Technological and technical capacity gaps.** These hinder compliance with international standards and access to higher value-added market segments. Limited access to traceability systems, environmental monitoring tools, and specialized training reduces competitiveness and opportunities for productive diversification.

- **Pollution and ecosystem degradation.** The loss of mangroves and coral reefs, together with declining water quality, reduces the availability of fisheries resources and the attractiveness of tourism destinations, directly affecting the productive base. This situation is compounded by the lack of up-to-date market data and information, making strategic planning, the identification of profitable niches, and the design of financially viable projects more difficult.

Taken together, these risks create a highly fragile environment for small and medium-scale investment in the Sustainable Blue Economy, where the absence of comprehensive mitigation measures may perpetuate dependence on extractive or informal activities that are highly vulnerable to climate and market variability.

The main opportunity areas are outlined below.

Marine and coastal natural capital

Marine and coastal natural capital constitutes the functional foundation of the Sustainable Blue Economy. Ecosystems such as mangroves, coral reefs, seagrass beds, and coastal wetlands not only provide essential services—including coastal protection from storms, carbon sequestration and storage, habitat provision, and nutrient regulation—but also represent tangible economic assets. In LAC, these systems cover approximately 1.6 million hectares of mangroves and seagrass beds, capable of storing up to 1 billion tons of blue carbon, and directly or indirectly support the livelihoods of more than 3 million people.

Despite their value, the integration of these assets into financial and economic planning remains incipient. Costa Rica has developed payment for ecosystem services (PES) schemes applied to coastal environments, while pilot mangrove restoration projects in Colombia have demonstrated the feasibility of combining conservation, carbon sequestration, and community income generation. Likewise, “living laboratory” initiatives in the Caribbean have shown that nature-based solutions strengthen climate resilience and improve local well-being.

In this context, the conservation of mangroves and coral reefs has strategic implications for the region's energy and port security. These ecosystems function as natural barriers that reduce the exposure of critical

Marine raw materials

Marine raw materials—including sustainably managed wild fisheries and sustainable aquaculture—are fundamental to food security, nutrition, and responsible production and consumption in the region and worldwide. In 2022, fisheries catches in

infrastructure—including coastal power plants, offshore wind farms, and port terminals—to storms and extreme weather events, thereby helping to reduce economic losses and operational risks. The Inter-American Development Bank has financed studies in the Caribbean that incorporate nature-based solutions into port master plans, demonstrating that investments in ecosystems can provide protection for infrastructure worth billions of dollars.

Technological innovation is also playing a key role in this area. Ocean digital twin projects and satellite monitoring platforms make it possible to map the health of coral reefs and seagrass beds in real time, generating data that facilitate their inclusion in blue carbon markets and financial resilience mechanisms. These tools, which have already been tested in pilot initiatives in Mexico and the Caribbean, provide a foundation for scaling more transparent and verifiable PES services mechanisms.

These experiences open a strategic window for scaling PES mechanisms, nature-based infrastructure, and the restoration of vulnerable habitats. By systematically incorporating these financial instruments and business models, the region can mobilize resources toward the conservation and regenerative use of its marine and coastal ecosystems, while simultaneously advancing climate mitigation, economic returns, and social equity.

LAC reached approximately 12.8 million tons (14% of the global total), while total regional production, including aquaculture, reached 17.7 million tons (8% of global output). With more than 60% of fish consumed globally projected to come from aquaculture by 2030,



Canto do Mangue, Brazil

coastal countries have an unprecedented opportunity to promote regenerative production systems, improve traceability, and attract green capital.

The energy transition is also creating opportunities for hybrid blue production models. In Chile and Brazil, aquaculture farms incorporating floating solar and coastal wind energy are already being tested to reduce costs and emissions, generating replicable experiences that integrate food security with climate mitigation.

At the same time, marine bioprospecting—the exploration of ocean genetic resources for pharmaceutical, cosmetic, and food applications—is emerging as a high-value-added sector. The global marine biotechnology market is projected to grow at a compound annual rate of between 7.8% and 10.5% between 2024 and 2029, and the region is home to initiatives such as INVEMAR's Marine Bioprospecting Laboratory (LABBIM) in Colombia. Institutions such as the Oceanographic Institute of Venezuela, the University of the Sea in Mexico, Costa Rica's National Biodiversity Institute (INBio), and CATIE in Central America are providing the scientific foundation needed to scale these value chains.

Port modernization is also essential to support this value chain. Terminals such as Paita in Peru and Guayaquil in Ecuador have begun investing in efficient cold-chain

Local value creation

Sustainable marine and coastal development can become a powerful driver of employment and economic activity in coastal communities. This potential is reflected across multiple sectors—from logistics and energy to tourism, technological innovation, and high-potential entrepreneurship—which, when transformed through a sustainability lens, can foster new local value chains, diversify the productive base, and create more inclusive economic opportunities for coastal communities.

infrastructure, electrification, and digital traceability, which are key elements for meeting international standards and ensuring that the region's fisheries and aquaculture products can access high-value markets.

To enhance the value of and finance the conservation and responsible use of marine raw materials, it is essential to create marine ecosystem services markets that reward blue carbon sequestration, mangrove protection, and coral reef restoration, linking them to blue bonds, trust funds, and public-private partnerships based on verified results. These instruments must connect climate mitigation—through payment for ecosystem services mechanisms adapted to coastal environments—with the generation of sustainable returns and social equity, while ensuring the participation of and direct benefits for local communities.

Finally, innovation can catalyze a step change in this sector. Startups in Mexico and Chile are developing blockchain-based traceability systems for fisheries products, while artificial intelligence platforms support the sustainable management of quotas and the reduction of bycatch. These solutions not only enhance the region's international competitiveness but also position LAC as a leading hub for technologies that support the responsible use of marine resources.

In this context, port modernization not only improves logistics efficiency but also creates jobs in construction, maintenance, and port operations, directly benefiting adjacent municipalities. Maritime transport handled 1.2 billion tons of cargo in 2022, valued at USD 1.7 trillion, highlighting the growth potential for local logistics and transport services. In addition, recent studies indicate that every dollar invested in resilient infrastructure can generate up to four dollars in economic benefits by reducing future losses from natural disasters and improving adaptive capacity in the face of extreme events.

When carried out under sustainability criteria, port modernization also becomes a driver of local innovation. Examples such as the Port of Santos in Brazil and the Port of Cartagena in Colombia are incorporating crane electrification, biofuels, and advanced digital systems, creating opportunities for SMEs in software, engineering, and green services. These investments not only enhance logistics competitiveness but also generate skilled employment in technology and innovation-related sectors.

The transition toward decarbonized maritime transport and the digitalization of shipping routes is fostering the emergence of SMEs dedicated to alternative-fuel bunkering and the development of tracking and traceability platforms, strengthening coastal economies and reducing dependence on external suppliers.

The deployment of ocean renewable energy—including offshore wind, tidal, wave, and floating solar energy—represents an estimated technical potential of 8,000 GW across the region. This development can be linked to the creation of local industrial and port clusters, multiplying employment opportunities in shipbuilding, component manufacturing, installation services, and maintenance. Countries such as Brazil, Mexico, and Colombia are already exploring offshore wind projects,

Waste management

Plastic pollution and solid waste in marine and coastal environments represent both an urgent call to action and one of the clearest opportunities to apply circular economy models. Guatemala, for example, has developed an ambitious National Marine Litter Action Plan aimed at reducing waste, strengthening the regulatory framework, and promoting community participation in cleanup efforts and pollution control. At the same time, local startups are developing technological solutions for plastic recycling, waste traceability, and the production of biodegradable materials, generating green jobs and stimulating coastal economies.

opening the door to domestic supply chains and an energy transition that combines global competitiveness with tangible benefits for coastal communities.

Coastal tourism, which is expected to generate 17.33 million jobs and contribute USD 714 billion in 2024, offers opportunities for value creation when based on community ecotourism models, local guides, and value chains built around artisanal products.

Innovation plays a decisive role in this regard. From startups developing smart tourism solutions based on augmented reality to platforms that connect community-based ecotourism bookings with local value chains, new business models are emerging that allow a greater share of value to remain within local economies while diversifying sources of income for communities.

By retaining and adding value within these and other sectors across marine and coastal territories, it is possible to channel these revenues toward strengthening local capacities, diversifying productive activities, and consolidating integrated value chains. In this way, communities can not only improve incomes and strengthen climate resilience but also lay the foundations for a truly inclusive and sustainable model of growth.

Likewise, pilot projects across different subregions are combining environmental, social, and economic objectives: marine biotechnology laboratories using algae to produce biofertilizers; circular aquaculture farms that recycle nutrients; digital ecosystem monitoring platforms; and advanced waste management schemes that incorporate marine debris and fishing net cleanup. These examples demonstrate that, with investments in collection and processing infrastructure and the use of blended finance mechanisms, waste management can become a strategic pillar of the Sustainable Blue Economy, improving ecosystem health while creating opportunities for local development.

Linkages with other sectors further expand this potential. Port modernization can incorporate integrated waste management systems—from ship waste reception facilities to waste-to-energy plants in logistics zones—that not only reduce environmental impacts but also generate inputs for new local industries. Similarly, the conversion of organic waste into bioenergy or biofuels supports the transition toward low-carbon energy systems, while digital innovations applied to plastic traceability and the circular economy can open access to export markets and international certifications.

In this way, waste management becomes not only an environmental response, but also a driver of economic development that connects energy, ports, and innovation, delivering integrated solutions that strengthen both environmental sustainability and the social and productive resilience of coastal communities.

At the same time, initiatives already underway—including Barbados' Blue Bonds, Chile's green hydrogen pilot projects, the CMAR, and Costa Rica's Blue Accounts—demonstrate that the region has begun to mobilize high-impact solutions. Scaling these initiatives, however, will require overcoming persistent barriers, including gaps in environmental education and specialized technical training, infrastructure constraints, institutional fragmentation, and limited access to specialized financing.

The Sustainable Blue Economy should therefore be viewed not merely as a conceptual framework, but as a transformative roadmap for positioning LAC as a global leader in the strategic, responsible, and innovative management of its ocean resources. Achieving this vision requires strengthening applied scientific research, fostering blue entrepreneurship, mobilizing public-private investment, promoting regional cooperation platforms, and establishing common monitoring and accountability indicators.

Under CAF's leadership, and in collaboration with global partners such as the World Economic Forum (WEF) and the World Resources Institute (WRI), the region can effectively consolidate its role as a region of solutions, capable of delivering concrete responses to global ocean challenges while advancing sustainability, resilience, and shared prosperity.

Valdés Peninsula, Argentina

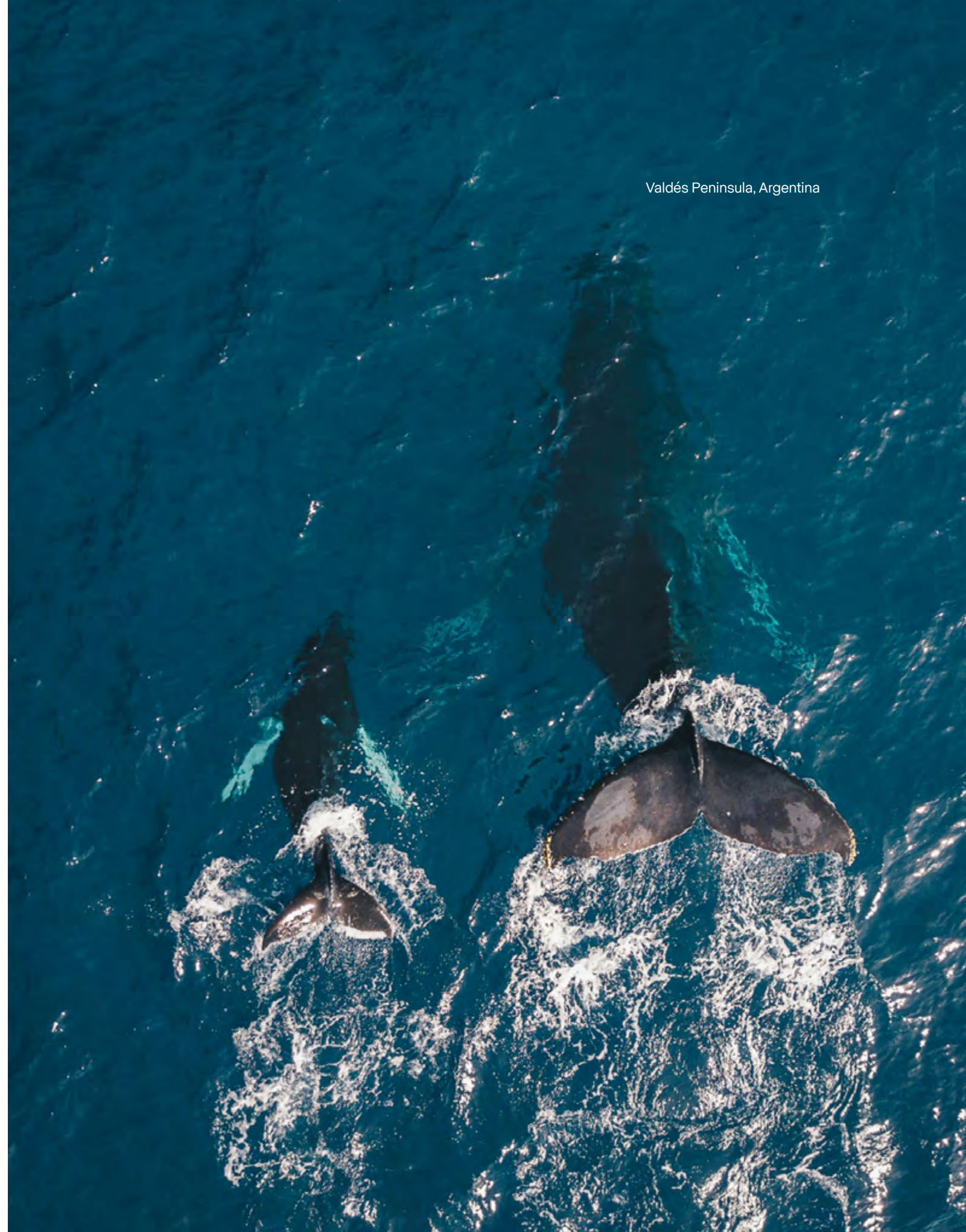


Table 25.
Opportunity matrix for the Sustainable Blue Economy (SBE) in LAC

Energy

Country	Conditions	Opportunity	Challenges	Risks
Colombia	109 GW of assessed technical potential in the Caribbean	Development of 69 identified offshore areas in the Colombian Caribbean	Environmental permitting and stakeholder engagement processes	Natural: low exposure to hurricanes
	First Offshore Wind Allocation Round launched as of July 2025	Green hydrogen development	Electricity transmission and distribution networks	Investment-related legal certainty
	10 GW of installed capacity projected by 2050	Established and expanding port infrastructure		
	Established legal framework			
Chile	Estimated technical potential, with no official figures available	Green hydrogen development		
	No developments as of July 2025			
	Existing alignment between the Off-shore Wind Roadmap and the National Green Hydrogen Strategy	Wave energy pilot projects		
Brazil	700 GW of assessed technical potential in shallow waters	Green hydrogen development		
	First preliminary license for a pilot project granted in 2025	Complementary investments in ocean renewables, sustainable logistics, and marine spatial planning		
Mexico	1,600 GW of assessed technical potential across both the Caribbean and Pacific basins	Development opportunities in the Gulf of Mexico, Tehuantepec, Baja California, and the Yucatán Peninsula	Institutional and regulatory	Natural: exposure to hurricanes and cyclones
		Climate investments		
	No developments as of July 2025	Regional cooperation		

Energy

Country	Conditions	Opportunity	Challenges	Risks
Argentina	National Hydrogen Strategy	Green hydrogen production	Institutional and regulatory	
Costa Rica	14.4 GW of assessed technical potential	Achieving a 100% renewable energy mix by 2050	Institutional and regulatory	
		Regional cooperation		
Peru			Institutional and regulatory	
Panama	Estimated technical potential, with no official figures available	Technical potential assessments		
Uruguay	Estimated technical potential, with no official figures available	ANCAP–H2U Off-shore Round		
El Salvador	Estimated technical potential, with no official figures available	Further technical potential assessments	Institutional and regulatory	
Guatemala				
Honduras		Regional cooperation		
Ecuador	No developments as of July 2025			
Venezuela	Estimated technical potential, with no official figures available			
The Caribbean— Antigua and Barbuda; Bahamas; Granada; St. Lucia; Jamaica; St. Vincent and the Grenadines; Trinidad & Tobago; Barbados	More than 100 GW for the region, according to technical studies	Development of pilot projects by 2030	Small domestic market	
		Regional market opportunities	Institutional and regulatory	
	No developments as of July 2025	Green hydrogen production		

Port and logistics development

Country	Conditions	Opportunity	Challenges	Risks
Mexico	CIIT (Interoceanic Corridor of the Isthmus of Tehuantepec); strategic location linking the Pacific and Atlantic via the Caribbean; intermodal connectivity	Energy, rail, and industrial integration		
		Clean energy development		
		Investments exceeding USD 3.77 billion		
		Logistics, energy, and industrial infrastructure development		
		Green hydrogen		
		Projected to handle 1% of global maritime trade		
		Approximately USD 6 billion in logistics expansion and modernization investments by 2030 across Manzanillo, Veracruz, Altamira, Progreso, Ensenada, and Lázaro Cárdenas		
Panama	Panama Canal; Cristóbal (Colón) and Balboa ports	Infrastructure investments in Puerto Chiapas and Dos Bocas		
		Integration of renewable energy sources	Natural: severe droughts (El Niño) affecting water security and increasing costs	
		Handles 3.5% of global maritime trade	Ensuring drinking water supply for 50% of Panama's population	
		Target: carbon-neutral logistics hub		
		Promotion of public-private partnerships	Pressure on environmental governance	
		Investments in climate and water resilience, energy efficiency, operational digitalization, green fuels, and intermodal infrastructure expansion	Social tensions related to benefit-sharing and environmental impacts on riverside communities	
		Approximately USD 2 billion in sustainability and technological innovation investments		
América Central (Costa Rica, Honduras, Guatemala, El Salvador)	Multipurpose and specialized ports of regional importance and key to trade with the United States	Construction of the Río Indio reservoir, with an estimated investment of approximately USD 6 billion		
		Target of 500,000 metric tons of green hydrogen for port logistics by 2030		
		Regional cooperation		
		Expansion and sustainability plans	Development of enabling regulatory frameworks	
		Climate-related investments	Automation	

Port and logistics development

Country	Conditions	Opportunity	Challenges	Risks
Caribbean	Regional disparities; some countries face structural constraints in basic infrastructure, security, and essential services	Development of smart port initiatives (energy efficiency, certification, environmental management, and emissions control)	Development of enabling regulatory frameworks	
	Regional logistics hubs	Expansion and modernization projects		
Colombia, Ecuador, and Peru	Multipurpose ports of regional importance for trade with North America, Asia, and Europe	Port expansion projects through 2030		
		Automation, logistics digitalization, and intermodal integration	Digitalization	
		Emerging ports: Chancay (Peru), Puerto Antioquia (Colombia), Posorja and Manta (Ecuador)		
Brazil	Strategic role in intercontinental maritime trade	Port expansion projects	Integration of renewable energy sources	
Chile		Infrastructure modernization plans		
		Master plan for capacity expansion (Chile), incorporating environmental sustainability and operational efficiency criteria	Automation	
Argentina	Part of the Southern Cone logistics corridor		Facility modernization	
Uruguay		Master Plan for physical and digital infrastructure expansion	Efficiency	

Sustainable marine and coastal tourism

Country	Conditions	Opportunity	Challenges	Risks
Caribbean	Pollution from wastewater and vessel waste	Development of sargassum containment, utilization, and valorization strategies, already underway in some countries	Weak information systems	Large-scale sargassum proliferation, leading to environmental degradation and significant economic impacts
	Large-scale sargassum proliferation	Expansion of Nature-based Solutions (NbS)	Lack of sector-specific data	High exposure to hurricanes
	Food insecurity	Investment in resilient infrastructure	Ocean governance and management	
	Climate vulnerability		Institutional fragmentation	
	High dependence on traditional tourism as a share of GDP	Conversion of sargassum into biogas, fertilizers, and bioplastics (under development in Grenada), supported by R&D investment	Uneven institutional and technical capacities	High structural vulnerability due to heavy dependence on tourism
	Limited MPA coverage	Strengthening environmental and tourism governance	Limited integration of climate resilience criteria	High vulnerability to climate change impacts
	Limited regional integration	Ecosystem services	Overlapping EEZs	
Mexico and Central America	Community-based sustainable tourism pilots linking tourism and conservation (Guatemala)	Development of nature-based tourism initiatives (supported by MAR Fund)	Fragmented governance and institutional weaknesses in the sector	Natural: climate change, coastal erosion, and mass coral bleaching
	Development of local and regional management models (UNDP)			Contamination of coastal areas by bacteria and other pollutants
	Business-led tourism initiatives under development (Surf City)	Development of nature-based tourism initiatives (supported by MAR Fund)		Economic losses associated with environmental risks
	Existing or emerging policies integrating sustainable marine-coastal tourism and MPAs	Alignment of conservation, tourism, social inclusion, and climate finance objectives		

Sustainable marine and coastal tourism

Country	Conditions	Opportunity	Challenges	Risks
Colombia, Peru, Ecuador, and Venezuela	Colombia: Tourism Sector Plan in place	Nature-based tourism development	Structural challenges: sanitation, connectivity, and tourism port infrastructure	
		Development of local value chains	Governance asymmetries	
	Ecuador: regulated tourism management in the Galápagos	Decarbonization of maritime transport	Investment gaps	
		Strengthening local value chains	Implementation capacity	
		Climate investment	Interinstitutional coordination	
	Peru: Tourism Sector Plan in place	Conservation finance services	Investment attraction	
Brazil, Chile, Argentina, and Uruguay	Strong regulatory frameworks	Investment in environmental sanitation	Gaps in enabling infrastructure	
	Operational experience integrating spatial planning, conservation, and competitiveness	Investment in visitor management and carrying-capacity controls in priority tourism corridors	Impact monitoring and multi-stakeholder coordination	
		Decarbonization and sustainability standards	Integration of tourism, conservation, and productive activities	
		Environmental planning	Environmental impact monitoring in coastal areas	

Source: Authors.

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Conclusions

LAC stands at a historic crossroads, with a unique opportunity to position itself as a Solutions Region and a global leader in the transition toward a Sustainable Blue Economy—one that integrates economic development, environmental sustainability, social equity, and climate resilience. This study has shown that, despite the region's geographic, institutional, and socioeconomic diversity, there is a growing convergence around the strategic value of the ocean as a driver of well-being, competitiveness, social equity, conservation, and territorial cohesion.

In this context, the region has an opportunity to direct its efforts toward a blue growth model grounded in the Sustainable Blue Economy, maximizing environmental, social, and economic benefits while promoting social inclusion and equity, balancing conservation and development, and strengthening climate resilience. Achieving this vision requires focusing on the aspects.

Governance and a strengthened institutional framework

Advancing an SBE in LAC requires strong, coherent, and adaptive institutional frameworks capable of effectively integrating environmental, social, and economic objectives. It is imperative to establish regulatory frameworks that provide legal certainty, create clear incentives for responsible investment, and offer effective tools for conserving natural capital. Marine spatial planning, guided by an ecosystem-based approach, should be supported by applied science, integrated data, and robust monitoring, reporting, and verification systems that enable dynamic, evidence-based management.

This process must be underpinned by coordinated governance that strengthens coherence across local, national, and regional policies, avoiding duplication and optimizing resources. Legitimate governance also requires participatory mechanisms that actively engage local communities, Indigenous Peoples, women, youth, and the private sector, ensuring that the benefits of the SBE are distributed equitably.

Regional and multilateral cooperation as a strategic lever

Consolidating an SBE in LAC requires deeper regional and multilateral cooperation, positioning the region as a strategic bloc in global ocean governance. Platforms such as SICA, the OECS, the CMAR, and the REMPSE are key assets for harmonizing policies, sharing technical knowledge, and coordinating interventions with significant environmental and territorial impact.

Strengthening the region's collective voice in international forums on marine biodiversity, climate finance, and the governance of ocean commons should be a priority.

Blue finance and innovative instruments for sustainability

Strengthening blue finance is essential to scaling sustainable solutions and accelerating the Sustainable Blue Economy. LAC must advance the design, structuring, and expansion of innovative financial instruments, including blue bonds, debt-for-nature swaps, trust funds, blended finance mechanisms, and blue carbon instruments, among others. These vehicles offer a concrete opportunity to mobilize resources toward strategic sectors, promote the conservation of natural capital, and strengthen the resilience of marine and coastal areas in the face of climate change.

Realizing this potential will require strengthening institutional capacities to structure bankable projects, develop robust investment pipelines, and improve access to international climate finance. It will also be necessary to attract private capital to emerging sectors through risk-mitigation mechanisms and demonstrable environmental and social returns. The adoption of clear metrics will be critical to ensuring impact traceability and alignment with global principles for sustainable ocean management.

Natural capital and nature-based solutions (NbS) as a strategic pillar

The protection, conservation, and restoration of marine and coastal ecosystems—such as mangroves, coral reefs, and seagrass beds—are fundamental pillars for strengthening climate resilience, preserving biodiversity, and safeguarding key ecosystem services, including blue carbon sequestration, water regulation, and coastal protection. These natural assets not only generate environmental benefits but also represent genuine economic opportunities when integrated into sustainable and financially viable development models.

Promoting NbS requires sustained investment in natural infrastructure, applied science, and mechanisms for valuing marine natural capital. The incorporation of these approaches into public policies and regulatory frameworks must be fully aligned with global commitments on biodiversity, climate change, and resilience.

Productive transformation toward a regenerative blue economy

The transformation of traditional sectors—including fisheries, aquaculture, coastal tourism, and maritime transport—is essential to advancing toward a regenerative and inclusive blue economy. This transition requires technical and financial support to modernize infrastructure, incorporate clean technologies, adopt certified best practices, and strengthen local workforce capabilities. Emerging sectors such as marine bioprospecting, sustainable tourism, and ocean renewable energy offer enormous potential to stimulate coastal employment, strengthen resilient value chains, and foster place-based technological innovation.

Promoting sustainable, equitable, and technologically advanced business models will help reduce the socioeconomic vulnerability of coastal communities while positioning LAC as a leader in marine production that delivers positive environmental and social outcomes.

The SBE and entrepreneurial innovation as drivers of transformation

The transition toward a Sustainable Blue Economy requires rethinking marine and coastal production models through the integration of clean technologies, energy efficiency, and waste valorization. Sectors such as marine biotechnology, ocean renewable energy, and coastal digitalization hold significant transformative potential while enabling the development of more sustainable, resilient, and inclusive value chains. This transformation requires enabling frameworks that foster technological innovation, entrepreneurship, and public-private collaboration aimed at developing scalable solutions tailored to the regional context.

In this process, supporting startups, pilot projects, and blue innovation ecosystems is a strategic priority. LAC has a growing network of entrepreneurs, incubators, and technology hubs that should be strengthened through adequate financing, access to international networks, specialized mentoring, and dynamic regulatory environments. Connecting this innovation ecosystem with public- and private-sector demand will help accelerate the transition toward a regenerative, knowledge-intensive Sustainable Blue Economy capable of addressing the major ocean challenges of the twenty-first century.

Knowledge, education, and capacities for active ocean citizenship

The transition toward a Sustainable Blue Economy requires a process of transformation and deepening of knowledge, from basic education to advanced scientific research. Promoting ocean literacy at all levels—including primary, secondary, technical, and university education—is essential to building an informed and engaged ocean-literate citizenry capable of responding to the challenges of climate change, biodiversity loss, and the sustainable management of marine natural capital. This effort should be accompanied by awareness-raising campaigns and educational tools that encourage responsible

decision-making by consumers, businesses, and governments, integrating blue-economy principles into public policies and everyday life.

At the same time, strengthening the region's scientific and technical capacities through the consolidation of centers of excellence, marine and coastal observatories, academic networks, and oceanographic data-sharing platforms is a priority. Regional cooperation for technology transfer and the generation of applied knowledge must be a cornerstone of this strategy. Only through sustained investment in education, science, and institutional capacities will it be possible to build an evidence-based blue economy that is long-term in outlook and committed to the well-being of future generations.

Social inclusion and territorial cohesion as the foundations of a just Sustainable Blue Economy

The Sustainable Blue Economy must be built on principles of equity, placing coastal communities, Indigenous Peoples, women, and youth not only as beneficiaries, but also as stewards and co-owners of marine and coastal development processes. Their leadership in setting priorities, implementing projects, and monitoring results ensures social legitimacy, territorial rootedness, and intergenerational justice.

Achieving this requires establishing meaningful participation mechanisms—including representation quotas and dedicated budgets—that enable artisanal fisheries, community-based ecotourism, and marine harvesting activities to formalize, professionalize, and capture a greater share of the value they generate. Systematically integrating gender, diversity, and youth perspectives into coastal governance not only helps address historical inequalities but also enhances local creativity and strengthens social cohesion.

A truly just blue economy retains and adds value within local territories. Revenues generated through the sale of certified fisheries products, regenerative tourism, or payments for ecosystem services should be reinvested in technical training, locally managed infrastructure, and community enterprises. Only in this way can the ocean become a driver of shared prosperity and resilience for those who live and work along its shores.



Paraty, Brazil

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The road ahead

The transition toward an SBE in LAC is not an option—it is an urgent necessity. Throughout this report, we have examined the opportunities, challenges, and enabling conditions that will shape the region's future. The findings show that, despite progress that remains uneven and fragmented, a solid foundation exists on which to build a development model that links economic prosperity, social justice, and environmental sustainability.

The region already has a range of tools at its disposal. Sustainable Ocean Plans, for example, combine spatial planning, institutional coordination, productive development, and conservation, facilitating regulatory coherence and helping to prioritize investments. Yet the path toward a Sustainable Blue Economy requires much more: scientific and technological innovation, fit-for-purpose financial mechanisms, robust regulatory frameworks, and regional cooperation capable of transcending political and sectoral boundaries. Only by bringing these elements together will it be possible to transform the region's potential into tangible benefits for its people and ecosystems.

The analysis presented in the preceding chapters demonstrates that the Sustainable Blue Economy is not a standalone sector, but rather a cross-cutting approach that connects environmental, economic, social, and cultural dimensions. From the distinct characteristics of marine ecoregions to advances in regulatory frameworks; from the construction of multilevel governance systems to the emergence of new technologies and financial instruments, a complex landscape takes shape—one that requires coherence, long-term vision, and a willingness to cooperate. Explicit recognition of the challenges, risks, and opportunities involved provides a clearer understanding of the factors that can accelerate the transition, as well as those that may hinder it if not addressed collectively.

The success of this transition will depend on political leadership, multisectoral commitment, and the ability to mobilize resources at scale and over the long term. Ensuring that the value generated by the blue economy translates into local enterprises, quality jobs, and greater resilience for coastal communities

will be essential, so that social and climate justice are built on strong territorial foundations. In this regard, the inclusion of local communities, Indigenous Peoples, women, and young people is not an add-on, but a prerequisite for ensuring legitimacy and equity throughout the process.

LAC now has a historic window of opportunity to establish itself as a Solutions Region and a central actor in the global ocean agenda. Becoming a global reference point does not mean replicating external models but rather demonstrating that it is possible to manage the ocean sustainably and equitably while delivering solutions that can be replicated worldwide. The region possesses the natural assets, technical capacity, and human capital needed to achieve this. What is now required is political will, sustained cooperation, and capital directed toward transformation.

The message is clear: the time has come to act collectively, innovatively, and decisively. The future of the SBE in LAC depends on countries moving beyond fragmented agendas, strengthening regional partnerships, and positioning themselves as global leaders in ocean sustainability. Only in this way can a healthy, productive, and resilient ocean be secured for present and future generations.

Multilateral organizations have played a fundamental role in promoting and coordinating international efforts to accelerate the transition toward a Sustainable Blue Economy. In this context, CAF – Development Bank of Latin America and the Caribbean has established itself as a clear regional leader by placing the Sustainable Blue Economy at the core of its institutional strategy, with the goal of transforming the ocean into a driver of inclusive, resilient development that respects natural capital. CAF's Sustainable Blue Economy Strategy provides a roadmap for catalyzing investments and public policies that strengthen the sustainable management of marine and coastal resources, foster blue innovation, and promote the protection of strategic ecosystems, while aligning financial instruments with the region's environmental objectives.

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As part of its implementation, CAF met ahead of schedule its goal of mobilizing USD 1.25 billion in blue finance before 2026, supporting projects in marine conservation, resilient coastal infrastructure, blue carbon, and sustainable tourism, among other areas. In line with its commitment to accelerating the transition toward a Sustainable Blue Economy, CAF has doubled this ambition, committing to mobilize an additional USD 2.5 billion by 2030. This leadership has been further reinforced by the issuance of CAF's EUR 100 million Blue Bond, an innovative financial instrument designed to channel capital market resources toward projects that generate measurable environmental benefits for marine and coastal ecosystems. These advances not only diversify funding sources for the blue economy but also position the region as a global benchmark for financial solutions aligned with international biodiversity and climate commitments.

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