ASSOCIAÇÃO PORTUGUESA DOS RECURSOS HÍDRICOS

Journal of Integrated Coastal Zone Management (2024) 24(2): 163-183

ISSN 1646-8872
DOI 10.5894/rgci-n619
url: https://www.aprh.pt/rgci/rgci-n619.html

ADVANCES AND CHALLENGES FOR OCEAN GOVERNANCE IN THE REPUBLIC OF PANAMA

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ABSTRACT: Ocean governance is an underrepresented integrated policy approach and strategy, with few examples, and insufficient data and analysis in Panama. It refers to the process that combines government structures, processes, norms and other aspects of public policy that shape the way in which different stakeholders make decisions and pursue accountability in the application of management tools in natural spaces, with the purpose that ecosystems and the services they provide to society are restored and preserved in quality and quantity for all stakeholders. This review was carried out by analyzing documents from national and international sources, following key aspects of the Decalogue and describing the current state of Panama regarding marine governance issues. The review unquestionably evidenced showed that there is a lack of adequate mechanisms for marine governance; however, the international normative framework and its advances at the national level are recognized. This work prioritizes interdisciplinary research as a central axis for the planning, implementation and evaluation of management plans, suggested to follow and prioritize the National Ocean Policy. Furthermore, considering that the ocean is multidimensional and globally connected, demographic and functional connectivity should be considered a crucial element for integrating science into the decision-making process.

Keywords: Central America, public policies, integrated coastal-marine management, marine connectivity, oceanic governance.

RESUMO: *A governança oceânica é uma abordagem e estratégia de política integrada pouco representativa, com poucos exemplos e dados e análises insuficientes no Panamá. Refere-se ao processo que combina estruturas governamentais, processos, normas e outros aspectos de políticas públicas que moldam a maneira pela qual as diferentes partes interessadas tomam decisões e procuram a responsabilidade na aplicação de ferramentas de gestão em espaços naturais, com o objetivo de restaurar e preservar os ecossistemas e os serviços prestados à sociedade em qualidade e quantidade para todas as partes interessadas. Essa revisão foi realizada por meio da análise de documentos de fontes nacionais e internacionais, seguindo os principais aspectos do Decálogo e descrevendo o estado atual do Panamá em relação às questões de governança marinha. A revisão evidenciou, de forma inquestionável, a falta de mecanismos adequados para a governança marinha; no entanto, a estrutura normativa internacional e seus avanços em nível nacional são reconhecidos. Este trabalho prioriza a pesquisa interdisciplinar como eixo central para o planejamento, a implementação e a avaliação de planos de gestão, sugerindo seguir e priorizar a Política Nacional dos Oceanos. Além disso, considerando que o oceano é multidimensional e globalmente conectado, a conectividade demográfica e funcional deve ser considerada um elemento crucial para a integração da ciência no processo de tomada de decisão.*

Palavras-chave: *América Central, políticas públicas, gerenciamento costeiro-marinho integrado, conectividade marinha, governança oceânica.*

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Submission: 8 JAN 2025; Peer review: 23 JAN 2025; Revised: 14 MAY 2025; Accepted: 14 MAY 2025; Available on-line: 15 MAY 2025

1. INTRODUCTION

The Special Communiqué on the Sustainability of the Oceans that emerged from the XVIII Ibero-American Summit of Heads of State and Government signed on March 25th of 2023, in Santo Domingo (Dominican Republic), reflects the relevance of this strategic space for the eradication of poverty while serving as an engine for action and resilience against the challenges of climate change, biodiversity loss, habitat fragmentation and pollution (SEGIB, 2023a). The oceans and their coastal-marine ecosystems support diverse ecosystem services that generate generous opportunities for the sustainable development of the regions (Culhane *et al*., 2018), which are fundamental to achieving the objectives of the Ibero-American Environmental Charter (SEGIB, 2023b). The Charter, framed in the fulfilment of the objectives of the 2030 Agenda and approved at the XVIII Summit, reiterates the importance of the oceans for humanity and supports the approach to ocean management that must combine knowledge from both the natural and social sciences (Sherman, 2014). Achieving healthy, productive, and resilient marine-coastal ecosystems requires adopting a holistic approach of the activities conducted in these areas, the stakeholders, and the existing management strategies and current policies. This approach should ensure the effective governance of both national and international coastal and oceanic zones (Winther *et al*., 2020). In this sense, governance is vital to propose and implement a coherent and viable strategy coherent with the marine life but also with the local populations to achieve the sustainability of the oceans.

The term "governance" emerged in the 1990s to designate a specific policy-making process involving state agencies and private stakeholders, with a clear association between state regulations, in dialogue with international debates on state downsizing and new public management (Aguilar, 2015; Marques, 2013). Although the concept of Governance comes out as a response to the governability crisis, there needs to be more clarity between the two terms.

Governability means initially and substantively the capacity of political systems to respond to society's most pressing concerns (Jentoft, 2007). In contrast, Governance refers to a process involving the state, civil society, and the private sector in assessing, implementing, and deciding on matters of public interest (Whittingham, 2010). Even though distinct concepts, governability and governance collectively and broadly encompass the capacity of a state to function efficiently, recognize, protect and promote citizens' rights, and achieve desired social and economic outcomes through the exercise of political power (Sending and Neumann, 2006). The International Union for Conservation of Nature (IUCN) defines four types of Governance (Dudley, 2008):

- Governance by government, where management is carried out entirely by the assigned ministry or authority;
- Shared Governance is where various actors share authority and responsibility, either formally or informally;
- Private Governance is where individual landowners or non-profit organizations manage conservation areas;
- Governance by indigenous people and other local communities, where indigenous groups or local communities declare and manage conservation areas.

In the present century, populations, especially coastal communities, have shown concern regarding the management of coastal and marine ecosystems since they are being degraded by unsustainable anthropogenic activities that are managed in a fragmented manner, where interactions, conflicts and cumulative user-user and user-environment impacts, are not considered (Barragán-Muñoz, 2020; Caviedes *et al*., 2022). Weaknesses in their management also tend to be due to the lack of a legislative framework that promotes an integrated management of such areas, weak administrative capacity, and the settlement of people with property rights (Kelly *et al*., 2018), which, together with the coastal marine management developed in the country, results in various complaints from the environmental sector about the excessive exploitation of resources, non-compliance with policies and the increasing degradation of ecosystems.

This is how Ocean Governance (OG) emerges, becoming the approach to articulate actions between the state and civil society to achieve the management and good governability of these spaces and natural elements including the aspects of transboundary cooperation that are unavoidable in a dynamic environment such as the oceans. The key point for the introduction of this idea was in 1982 through the approval of the United Nations Convention on the Law of the Sea (UNCLOS, 1982), which establishes a regime for the order and possible uses of the world's seas and oceans. Following the approaches of the Division for Ocean Affairs and the Law of the Sea (DOALOS) and its Programme of assistance to States, specifically the one recently developed in Panama (UN/DOALOS-Norad *et al*., 2024), have mainly taken into consideration for the analysis of OG in Panama the coasts, seas and oceans of the country, understanding that the activities developed in one of these

areas have a direct impact on the others, so their analysis, management and administration should be investigated as a whole.

OG combines government structures, processes, rules and instruments that shape how different actors make decisions, assign responsibilities, segment power and pursue accountability in the use and management of coasts and the sea to keep ecosystems and their resources healthy, productive, safe and resilient for the achievement of sustainable human well-being (Rodríguez and Windevoxhel, 1998; Barragán-Muñoz, 2014; Blythe *et al*., 2021; Haas *et al*., 2021). Its purpose is to provide trusted, strategic leadership and to create robust, inclusive and appropriate accountability for integrated coastal and marine management (Campbell *et al*., 2016), which seeks sustainability in its three dimensions: ecological, socio-economic, and cultural-historical. This approach overcomes the traditional view of sustainable development of understanding the economy as another dimension distinct from the social, insisting on the equal importance of restoration and conservation of ecological goods and services and the protection, restoration and conservation of tangible and intangible cultural heritage (Arenas-Granados, 2012a). Unfortunately, this will not be fulfilled until there is a spatial and integrated vision of the future use of the ocean, as a participatory management approach based on a policy or plan has not been sufficiently developed (Rivera-Arriaga *et al*., 2020). To this end, new alternatives, such as ecosystem-based management and marine spatial planning, have been proposed as paradigmatically different approaches that can address the problems arising from traditional sectoral and fragmented management (Douvere and Ehler, 2007; 2009).

Panama is a blue country with 82% of oceanic surface and more than 70% of its mainland territory that corresponds to coastal and marine areas (ARAP, n.d.). The country is also carbon negative (MiAmbiente, 2021) and currently preserves 54.33% of its exclusive economic zone (MiAmbiente, 2023a). These characteristics are strategic and should be take into consideration for the country's economic and social development. As the country is physiographically made up of an isthmus (O'Dea *et al*., 2016), all the effects of the use and exploitation of its 52 hydrographic basins in the interior are evident on the coast (IMHPA, n.d.).

For this reason, the most significant environmental problems are found in these areas, such as the destruction and fragmentation of ecosystems, the consequent loss of biodiversity (ANAM/UICN, 2006; Jiménez, 2013), pollution from both land and marine sources, and the growing effects of climate change. All the above makes it imperative for Panama to implement and develop OG to achieve the well-being of its coastal societies, which correspond to practically the entire population of the country. The Ministry of Environment (MiAmbiente, 2022) highlights the deficiencies in governability and governance in the face of its environmental challenges, emphasizing the overlapping of competencies between various public institutions and the need for clarity in the procedures for legal administrative management of its coasts. Therefore, this review article aims to provide an analysis of public policies related to ocean governance in Panama, as well as some recommendations for the challenges facing this eminently maritime country for the present and the next decade in the framework of the 2030 Agenda (UN, 2015).

2. METHODS

For the analysis of public policies, the Decalogue tool promoted by the Integrated Management of Coastal Areas Group of the University of Cádiz was used (Barragán-Muñoz, 2003) and widely disseminated through the Ibero-American Network of Integrated Coastal Management (IBERMAR) in countries throughout the region, such as Mexico (Nava-Fuentes *et al*., 2018), Ecuador (Pazmiño-Manrique, 2018), Perú (Barragán-Muñoz and Lazo, 2018), Brazil (Diederichsen *et al*., 2013), the Gulf of Honduras (Caviedes *et al*., 2022), among others. The Decalogue is an instrument for analyzing the progress of critical issues for integrated coastal and marine management related to the legal-administrative subsystem of a given territorial scale of administration, making it possible to identify the minimum structural aspects that must be considered to approach a propositional analysis of public policies (Arenas-Grandos and Barragán, 2023). The issues studied here were public policies, regulations, institutions, competences, strategic instruments, research/information and citizen participation.

The "Info Jurídica" platform, which is administered by the Office of the Procurator of the Administration of the Public Ministry of the Government of Panama (Ministerio Público, n.d.), was used to obtain official documents related to the instruments on marine-coastal topics managed by the nation. In addition, work was conducted to identify, collect, review and analyze international and national secondary sources, primarily considering specialized scientific journals and public policy documents, standards, plans, programs and other strategic instruments. Working documents from, for example,

organizations such as the United Nations Educational, Scientific and Cultural Organization, the Economic Commission for Latin America and the Caribbean and the Forum of Ministers of the Environment were also compiled and analyzed, to support the key aspects of the Decalogue and aiming to describe the situation in Panama.

3. RESULTS AND DISCUSSION

3.1 Brief characterization of the Isthmus of Panama

The geological formation of Panama begins in the Upper Miocene (de Porta, 2003). It links South America with North America, producing the great American biological exchange of terrestrial plants and animals (Stehli and Webb, 1985; O'Dea *et al*., 2016) and generates essential changes in the ocean's physical, chemical and biological regime and the species that live in it (Jackson and D'Croz, 1997). Because of these characteristics, the Isthmus of Panama is a physical barrier to the mixing of Pacific and Caribbean waters and currently has two very different coastlines.

As indicated in Figure 1, the Panamanian emerged territory is bordered to the north by the Caribbean Sea, to the south by the Pacific Ocean, to the east by the Republic of Colombia, and to the west by the Republic of Costa Rica. It has a total coastline of 2,988.3 km in length, 1,700.6 km on the Pacific and 1,287.7 km on the Caribbean Sea (ARAP, n.d.). Panama's territorial sea, includes the seabed, subsoil and airspace, has an area of 319,823.9 km^2, more than four times its terrestrial area (INEC, 2018). The Exclusive Economic Zone (EEZ) extends from the outer limit of the Territorial Sea to an offshore distance of 200 nautical miles (370.4 km) so that its total coastal-marine area is at least 540,200 km^2 (Arenas-Granados, 2012b; ANATI, n.d.). Its political-administrative territorial organization comprises 10 provinces, 5 indigenous comarcas, 81 districts and 699 townships (corregimientos) (Solano, 2024). All provinces have a seafront, as do the Ngäbe-Buglé and Guna Yala indigenous comarcas.

The coastal zone comprises extensive ecosystems, including mangroves, coral reefs, estuaries, coastal lagoons, seagrass beds, beaches and salt marshes. These ecosystems are extremely important for their role in the reproduction, frying, breeding,

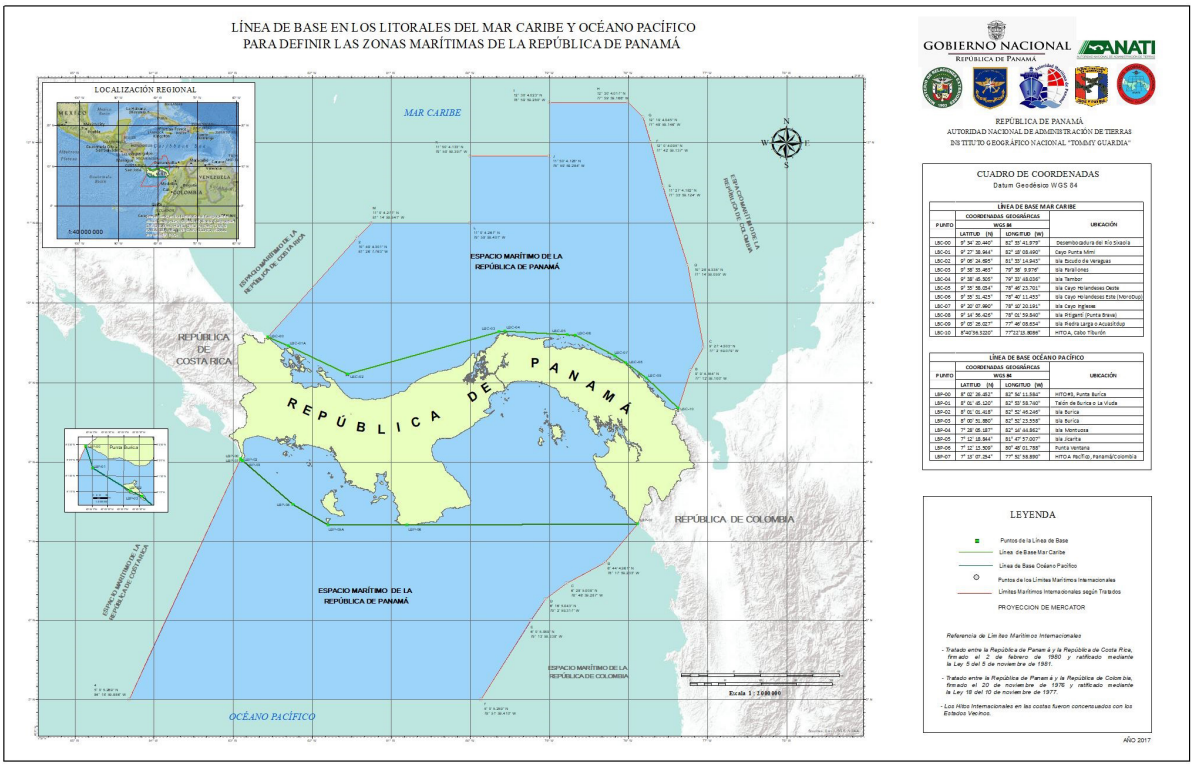

Figure 1. Maritime Zones of the Republic of Panama (ANATI, n.d.).

rearing, growth and protection of many vital organisms for the country's fisheries and aquaculture subsector (ARAP, n.d.).

At least 50% of Panama's population is based on its coasts, which depend mainly on tourism, artisanal and commercial fishing, transport and shipping (Tambutti and Gómez, 2020). Despite being an area of crucial economic productivity, it is constantly under intense pressure due to its use and exploitation for different purposes, generating adverse effects on the ecosystems and the populations residing in those areas. These impacts, which have been exerted since the beginning of the last century but have intensified in recent decades, have brought significant economic benefits to some sectors and increased ecological degradation and social inequality (Arenas-Granados, 2012b; Haas *et al*., 2021). Recently, in Panama, most of the society has become fed up with implementing projects that increase the environmental degradation of watersheds and coastlines and do not contribute to close the existing inequality gap. Evidence was observed in 2023 with the social rejection of the renewal of the "Minera de Cobre en Panamá" contract. Mass protests for over a month succeeded in getting the Supreme Court of Panama to declare the contract renewing the concession for the exploitation of the largest open-pit copper mine in Central America unconstitutional.

According to projections by the Economic Commission for Latin America and the Caribbean (ECLAC), Panama will lead economic growth by 6.1% in all Latin America by 2023 (ECLAC, 2023). In addition, the United Nations Development Programme (UNDP) indicates that the country has a high human development index-HDI (0.805) in terms of the three fundamental dimensions: healthy and increasing the lifespan, access to knowledge and decent standards of living. However, the HDI declines by 20.5% (0.640) when adjusting the country's inequality (UNDP, 2022), mainly regarding income distribution. For 2018, a Gini coefficient of 0.462 (simple average) was recorded for Latin America and the Caribbean (LAC); Panama's coefficient was 0.498, making it the third most unequal country in the region. Compared to other LAC countries, Panama shows a strong per capita growth; however, this growth has not been matched by a similar reduction in income distribution inequality, and high levels of inequality conspire against inclusive development (Cecchini *et al*., 2020).

Given this situation and considering the fundamental importance for the country of its coastal and marine spaces, the government is obliged to establish, apply and evaluate policies and management tools linked to the OG to ensure the adequate protection of this strategic territory and therefore the lasting well-being of all Panamanians.

3.2 Panama and the International Landscape for Ocean Governance

The conventions are fundamental as they play a role in influencing the development of national initiatives aimed at the sustainable use of the oceans. This international support establishes objectives, principles and a roadmap that must be reflected in the actions of States Parties, including activities supported by external sources (Kimball, 2003). The Republic of Panama complies with international treaties through Article 4 of its 1972 Constitution, where it agrees to abide by the norms of international law. Likewise, Law No. 6 of 1976 approved the Vienna Convention, recognizing the importance of international treaties. Panama has adhered to and adopted more than 30 conventions since the 1970s that should support better management towards the sustainability of its coastal and oceanic spaces. Table 1 presents a summary of the leading international conventions currently in force.

The conventions presented in Table 1 and various for OG (UNEP, 1995; Post and Lundin, 1996; Barusseau *et al*., 1997; Lemay, 1998) respond to results obtained by different international bodies. For example, the Division for Ocean Affairs and the Law of the Sea (DOALOS) of United Nations, the International Maritime Organization (IMO), the International Seabed Authority (ISA) and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO) are exclusively devoted to ocean issues, such as shipping and oceanographic components. On the other hand, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the International Union for Conservation of Nature (IUCN) have broader mandates, but also address ocean issues, such as marine resources, environmental education, integrated management of marine and coastal ecosystems, and others.

International technical and financial cooperation promotes specialized arrangements to help nations achieve their regional and international obligations. Examples include the Marine Protection Alliance (MPA), WildAid, Migramar, Global Fishing Watch, MarViva Foundation, and the Regional Fisheries Management Organizations (RFMOs).

One of the most significant challenges facing us in this century is the management of the seas and oceans that extend beyond

Table 1. Main international conventions, protocols and other instruments signed by Panama and linked to OG.

Instrument	Description	Adoption
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)	Promotes the control of all sources of pollution of the marine environment and the adoption of measures to prevent pollution of the sea by dumping of wastes and other materials	Law No.18 October 23, 1975
International Convention for the Safety of Life at Sea (SOLAS)	It lays down minimum standards for the construction, equipment, and operation of ships, consistent with their safety. The 1978 and 1988 Protocols have amended it.	Law No.7, October 27, 1977 / Law No.12, November 9, 1981 / Law No.31, July 11, 2007
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Ensuring that international trade in specimens of wild animals and plants is not allowed to enter international trade	Law No. 14 October 28 1977
Convention for the Protection of the Marine Environment and the Coastal Zone of the South-Eastern Pacific Ocean	Recognizes the importance of conserving the marine-coastal ecosystems of the Southeast Pacific by setting general objectives and actions	Law No.4 March 25, 1986
International Convention for the Prevention of Pollution from Ships (MARPOL)	They establish rules to prevent and reduce pollution from ships, both accidental and from normal operations. Amended by Protocols of 1978 and 1997.	Law No.17, November 9, 1981 / Law No.1, October 25, 1983 / Law No.30, March 26, 2003
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	It specializes in conserving migratory species, their habitats, and migration routes.	Law No.5 January 3, 1989
The Convention on Wetlands of International Importance (Ramsar Convention). Convention on Wetlands of International Importance (Ramsar Convention)	Promotes conservation and the wise use of wetlands	Law No.6 of January 3, 1989
Convention on Biological Diversity (CBD)	It seeks to conserve biological diversity through the sustainable use of its components and the fair and equitable sharing of benefits from utilizing genetic resources.	Law No.2 January 12, 1995
United Nations Convention on the Law of the Sea (UNCLOS)	It sets the rules for the use of the oceans and their resources.	Law No.38 June 4, 1995
International Convention for the Conservation of Atlantic Tunas (ICCAT)	Proposes recommendations for conserving and managing tuna and tuna-like stocks in the Atlantic and Mediterranean.	Law No.74 November 10, 1998
Kyoto Protocol to the United Nations Framework Convention on Climate Change	It builds on the principles of the Convention but places greater responsibility on countries to address the high levels of greenhouse gas (GHG) emissions in the atmosphere.	Law No.88 November 30, 1998
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	It focuses on the transboundary movement of living-modified organisms resulting from modern biotechnology, which may adversely affect biological diversity's conservation and sustainable use.	Law No.72 December 26, 2001
Stockholm Convention on Persistent Organic Pollutants (POPs)	Aimed at protecting human health and the environment from chemicals that remain intact for long periods.	Law No.3 January 20, 2003
Protocol Concerning Pollution from Land-based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	Promotes activities and international cooperation to address the problems posed by pollutants entering from land-based sources. Encourages research, technology development, and scientific training, among others.	Law No. 26 March 26, 2003
Nagoya Protocol to the Convention on Biological Diversity	Promotes transparent and effective implementation of Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising from their Utilizations at all levels.	Law No.57 October 4, 2012
Minamata Convention on Mercury	Seeks to protect human health and the environment from anthropogenic emissions and releases of mercury and its compounds.	Law No.21 April 27, 2015
Paris Agreement	It sets out measures to limit this century's global temperature rise to 2°C and limit it to 1.5°C.	Law No.40 September 12, 2016
International Convention for the Control and Management of Ships' Ballast Water and Sediments	It seeks to stop the spread of potentially harmful aquatic organisms and pathogens in ballast water.	Law No.41 September 12, 2016
Regional Agreement on Access to Information, Public Participation and Access to Justice in Environmental Matters in Latin America and the Caribbean (Escazu Agreement)	Place the people at the center. Enabling the implementation of access to environmental information, public participation in environmental decision-making processes and access to justice in environmental matters.	Law No.125 February 4, 2020

the Exclusive Economic Zone (commonly called High seas). Its protection is alarming because millions of species thrive in these waters and although they belong to all humanity, no one protects them, which can lead to devastating activities (WWF/IUCN, 2001).

In June 2023, the United Nations Intergovernmental Conference adopted the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity in Areas Beyond National Jurisdiction (BBNJ Agreement) (UN, 2023), which establishes four transversal elements:

- Marine spatial management tools, including marine protected areas (ABMTS/MPAs);
- Environmental impact assessment (EIAs);
- Marine genetic resources (MGRs);
- Capacity creation and transfer of technology (CCBT).

Although this new treaty still has some obstacles to face, it is a fact that the BBNJ Agreement opens a new chapter in high seas governance, as it succeeds in establishing common rules, involves States, creates spaces for sustainable management and overcomes the disadvantages of fragmented ocean governance (Jiang and Guo, 2023). In September 2023, the Republic of Panama signed the Agreement and ratified it in September 2024.

3.3 Panama and the Decalogue issues for OG

3.3.1 Public policy

Public policies refer to the mechanisms, implemented through laws, lines of action and allocation of resources, promulgated by a governmental entity with the objective of solving problems that compromise the well-being of society, or to satisfy the necessities of society (Lahera, 2004; Weimer and Vining, 2017). This paper, therefore, refers to the identification and analysis of the expressed willingness of the national government to address viable and integrated responses aimed at achieving the sustainability of Panama's coastal and marine spaces. Table 2 shows the central public policies most closely related to managing the country's coastal-marine resources and zones. It should be noted that, until 2022, Panama needed an ocean policy. The creation in October 2018 of the Commission for the Formulation, Development and Monitoring of the National Ocean Policy and the approval by Executive Decree No.27 of March 15, 2022, of the Policy is a milestone in the right direction towards OG. Prior to this, there were only some elements related to OG, with emphasis on resource management and with less spatial and integrated perspective. Present in Decree Law No.7 of February 10, 1998, which created the Panama Maritime Authority (AMP in Spanish), in Law No.41 of July 1, 1998 (General Environmental Law) which created the National Environmental Authority (ANAM in Spanish) and in Law No.44 of November 23, 2006, which created the Aquatic Resources Authority of Panama (ARAP in Spanish) (Arenas-Granados, 2012).

Mention that the National Ocean Policy (PNO in Spanish) is in line with the National Strategic Plan with State Vision 2030, with the National Wetlands Policy, with the National Biodiversity Strategy and Action Plan 2018-2050 and particularly with the National Land Use Planning Policy of Panama (MIRE, 2022). This necessary coherence and harmonization are subsequently established between the PNO, the National Environmental Strategy (2021-2031) and the recent National Climate Change Policy.

For example, the priority nature of coastal and marine systems in addressing Nationally Determined Contributions to reduce carbon emissions is expressly indicated (MiAmbiente, 2023b). It is now necessary to ensure that this evident articulation of national public policies overcomes the common weaknesses observed in Panama in implementing, monitoring and evaluating previous strategic management instruments with an impact on its coasts and seas.

3.3.2 Regulations, Institutions and Competencies

In this section, it is worth specifying the primary normative basis (rules) that regulate the OG, as well as the public institutions (administration) and their competencies (responsibilities) for the management of resources and coastal-marine activities in Panama. It also briefly analyses the regulatory field's situation concerning the integrated nature required to manage these spaces.

The 1972 Political Constitution of the Republic of Panama is the country's fundamental Charter. As amended in 1993, Article 255 declares that the following, among others, belong to the state and cannot be privately appropriated: the Territorial Sea, beaches and their banks, navigable rivers, ports, marshes, the submarine continental shelf, the bed and subsoil of the Territorial Sea.

However, the constitutional mandate, the sectoral solid perspective in the management of the coasts and the sea of the country favored through Law No. 23 of April 21, 2009, that individuals who demonstrate housing, residential, environmental, tourist, commercial or productive possession,

Table 2. Central public policies and their legislative mechanisms related to Ocean Governance in Panama.

Instrument	Legislative and strategic mechanism	Description
National Policy on Environmental Supervision, Control and Oversight	Executive Decree No.33 February 26, 2007	It dictates environmental monitoring and control guidelines for coastal and marine areas.
National Water Resources Policy	Executive Decree No.84 April 9, 2007	Establishes principles and objectives for the coordinated management and development of water, land and related resources.
National Cleaner Production Policy	Executive Decree No.36 March 1, 2007	Proposes general initiatives for waste disposal and final treatment, considering its impacts on marine resources.
National Policy on Decentralization of Environmental Management	Executive Decree No.82 April 9, 2007	It calls for the transfer of environmental functions to local authorities. Mentions general problems of marine and coastal areas but needs to specify something regarding their management.
National Environmental Information Policy	Executive Decree No.83 April 9, 2007	Establishes the principles and objectives to be carried out to operate an environmental information system.
National Maritime Strategy	Resolution No.55 September 18, 2008	This corresponds to the update of the Strategy approved in 2004. It presents strategic objectives for the management and development of the maritime sector.
National Biodiversity Policy	Executive Decree No.122 December 23, 2008	Proposes lines of action for the conservation of flora and fauna, including coastal and marine flora and fauna.
State policy on aquatic resources for fisheries and aquaculture	Executive Decree No.97-A November 16, 2009	Establishes the basis for the sustainable use of aquatic resources through fishing and aquaculture.
National Science, Technology and Innovation Policy Panama 2040	Cabinet Resolution No.29 March 17, 2015	Presents objectives and indicators relevant to the need for research in the country, including coastal and marine areas.
National Strategic Plan with a State Vision 2030	Executive Decree No. 393 September 14, 2015	The governance framework institutionalizes the SDGs/Agenda 2030 monitoring mechanisms.
National Wetland Policy of the Republic of Panama	Executive Decree No.127 December 18, 2018	Establishes measures for the restoration and protection of wetlands, as well as planning, research and awareness-raising.
National Biodiversity Strategy and Action Plan 2018-2050 (EPANB)	Executive Decree No.128 December 18, 2018	With axes of conservation, restoration, reduction of pressures on biodiversity, knowledge, environmental education, use, sustainable management and integration and Governance.
National Forest Strategy 2050	Executive Order No.20 March 28, 2019	Proposes action plans for forest conservation in the country, including coastal forests
Panama's National Land Use Planning Policy	Resolution No.468-2019 June 27, 2019	It proposes objectives and actions for a harmonious relationship between society and the territory without explicitly referencing the coastal-marine space.
Panamanian Fisheries and Aquaculture Law	Law No. 204 March 18, 2021	Establishes the objectives for administering and promoting the sustainable use of aquaculture and fishing resources, based on the principles of management, promotion, regulation and integrated management.
National Ocean Policy	Executive Decree No.27 May 15, 2022	Proposes actions to foster the necessary synergies between the different sectors involved with OG
National REDD+ Strategy Panama	Executive Decree No.10 June 16, 2022	Defines measures and actions to reduce deforestation and forest degradation, including coastal forests.
National Policy on Integrated Disaster Risk Management (PNGIRD) 2022 - 2030	Cabinet Resolution No.001-2022, October 27, 2022	Defines lines of action and programs to address the difficulties of disaster risk in the country, including coastal and marine areas.
National Environment Strategy 2021-2031	Executive Decree No.12 September 12, 2022	Proposes measures to conserve and develop natural resources, including coastal and marine resources.
Marine Litter Action Plan 2022-2027	Executive Decree No.18 December 30, 2022	It establishes measures to eliminate sources of generation and reduce marine litter.
Education for Sustainable Development Policy	Law 378 May 3, 2023	Guidelines for the implementation of the policy in schools
National Climate Change Policy	Executive Decree No.3 June 8, 2023	Promotes decarbonization in all economic sectors, including coastal and maritime sectors

for at least five years of the insular territory and the coastal zone can obtain possession as owners of these national patrimonial real estate assets with some exceptions. For this law, the coastal zone is understood as the area of two hundred meters from the high tide line to the mainland (Arenas-Granados, 2012b).

It is worth mentioning that private property rights were recognized on beaches, the coastline and even the seabed at the beginning of the Republic. This began to change with the annulment of these rights in the Political Constitution of 1941, which managed to formally establish this matter until the 1960s after multiple confrontations with the private owners (Suman, 2002). Law No. 23, mentioned above, demonstrates the urgency for Panama to address the challenge of having specific legislation to regulate its coastal and marine spaces in an integrated manner and with a perspective focused on more than just the exploitation of resources. Its relevance is based on the need to ensure that the objectives, strategic lines and goals of the National Oceans Policy can be achieved.

In Panama, therefore, there is a diffuse and overlapping sectoral regulation related to the public management of its coastal, maritime and island territory (Arenas-Granados and Garces, 2010). These regulations include three different authorities: The Panama Maritime Authority (AMP in Spanish) created by Decree-Law No.7 of February 10, 1998; the Panama Aquatic Resources Authority (ARAP in Spanish) created by Law No.44 of November 23, 2006; and Law No.8 of March 25, 2015, creating the Ministry of Environment. The latter law also modifies the ARAP's provisions about the so-called integrated marine-coastal management (ICM) and Law No.41 of July 1, 1998: General Law on the Environment.

AMP established the National Maritime Strategy by Cabinet Resolution No.3 of January 28, 2004, which was subsequently updated in 2008. The creation of AMP was undoubtedly an opportunity to develop OG in the country. It should now be noted that the General Environmental Law (Law 41) that created the National Environmental Authority (ANAM in Spanish), which has now become the Ministry of the Environment, excluded the Panamanian coastal, island and maritime territory from its jurisdiction and competence, which was left to the AMP. Only the coastal and marine territory within the National System of Protected Areas is under the jurisdiction of the Ministry of the Environment. Even this authority, which is also responsible for managing the country's hydrographic basins, has yet to have jurisdiction over the interoceanic canal basin, including Gatun Lake, the exclusive jurisdiction of the Panama Canal Authority.

From 2002 to 2004, the AMP's General Directorate of Marine and Coastal Resources formulated, promoted, and submitted the Preliminary draft law on marine and coastal resources for public discussion, which emphasized the integrated management of the Panamanian coastal zone. Among other objectives, it sought to delimit the country's marine coastal zone in the face of the confusion, given that various national authorities had been defining their delimitation. Figure 2 presents some concepts and spatial delimitations related to coastal management in Panama according to current regulations.

However, in 2005, the draft mentioned above bill was withdrawn by the country's Executive Body and in its place, a bill was proposed to create the ARAP and unify the different competencies on marine-coastal resources, integrated management of these spaces, aquaculture, fishing and related activities of the public administration. Until Law No.8 of 2015, the ARAP had exclusive competence for the ICM, which was transferred to Ministry of Environment in Article 82 of that law. Thus, all the competencies initially foreseen for the AMP (Law No.7 of 1998) oriented to the ICM and some elements of the draft bill that was withdrawn were passed in 2006 to the ARAP and in 2015 transferred again to the Ministry of Environment. However, Law No.8 of 2015 establishes that one of the functions of the General Directorate of Planning and Integrated Management of the ARAP is to prepare, execute, direct, supervise and evaluate, in an integrated manner, the management plans for aquatic resources (including coastal-marine resources), and at the same time, this law establishes the exclusive competence of the Ministry of Environment for ICM.

The need for specific legislation for OG is evident. Legislation that is also harmonized with Resolution No.468 of 2019 that approved the National Land Use Planning Policy of Panama (PNOT in Spanish), with the Fisheries and Aquaculture Law (Law No.204 of March 18, 2021) and with Executive Decree No.3 that approved in 2023 the National Climate Change Policy (see Table 1). This need became evident as early as 2018 when the National Assembly, through Law No.47 of august 28, 2018, set the straight baselines from which the width of the Territorial Sea of the Republic of Panama in the Caribbean Sea and the Pacific Ocean is measured.

It should now be noted that the 2006 Law creating the ARAP defined the scope of the marine-coastal zone for this authority and managed to include ICM at least at a sectoral level, also recognizing the need to formulate the National ICM Plan to guide activities and actions towards the country's coastal-marine sustainability. Such a cross-sectoral and spatially

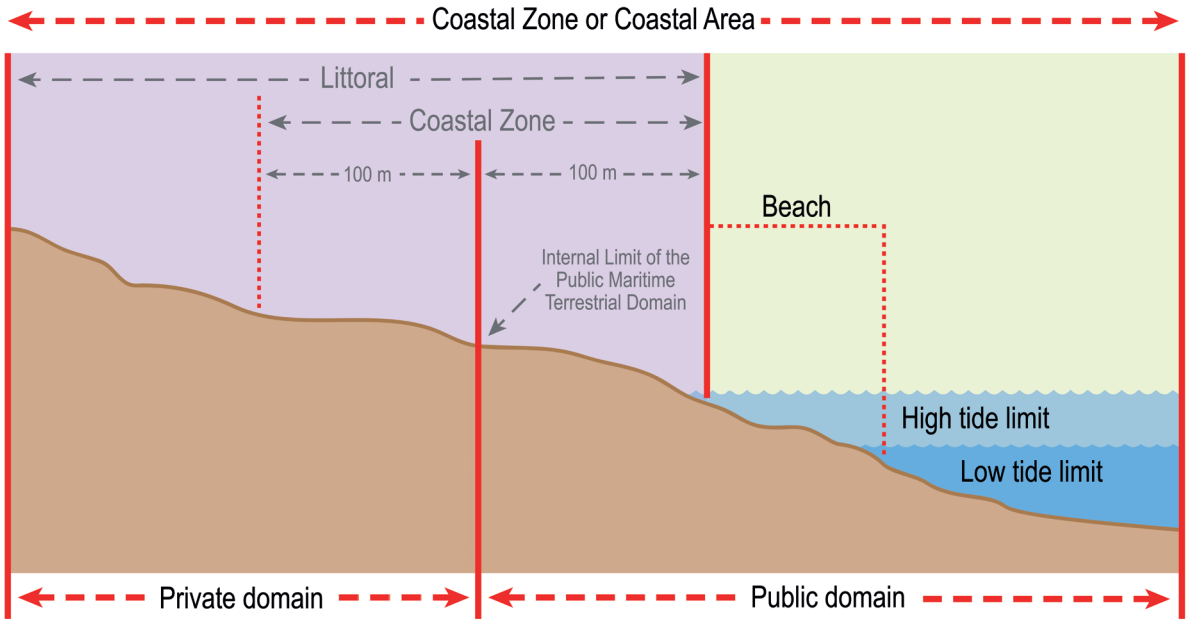

Figure 2. Summary of some concepts and spatial delimitations related to coastal management in Panama, according to current regulations. Adapted (Arenas-Granados, 2012b)

integrated plan, which is relevant, currently needs a process to be formulated. This plan should be articulated with the National Plan for the Conservation and Management of Fisheries and Aquaculture proposed in Law 204, with the Tourism Master Plan periodically prepared by the Panama Tourism Authority and with the instruments established for implementing the PNOT.

Now, it is also essential to overcome the recurrent weakness in Panama regarding the regulation and effective implementation of several normative instruments, as has already been pointed out by the Ministry of Environment itself (MiAmbiente/UNDP, 2022). This ministry, the other entities that made up the Commission for the Formulation, Development and Monitoring of the National Ocean Policy and the public institutions that make up the Inter-Institutional Environmental System (SIA in Spanish) have the mandate to ensure that while producing lasting benefits for the population, this is achieved without detriment to its natural marine-coastal infrastructure: the ecological support of the Nation. This higher purpose, which is indicated in current public policies and strategies, requires that the regulations that support them are, in turn, fully complied with Panama needs and based on scientific evidence and data.

As the Food and Agriculture Organization of the United Nations (FAO) points out (FAO, 2012) that public institutions and processes at the national level directly impact ocean governance and the proper implementation of rules. This is because they provide a more direct regime based on the country's legal framework, which can be enforced with more excellent order and directionality.

The clarity of competencies and jurisdiction of the public entities involved in coasts and seas is critical for the good Governance of these complex and dynamic spaces. A general analysis of the regulations about competencies reveals several aspects to be highlighted:

- Competences in the maritime and coastal spheres are strongly centralized in Panama. The provinces and municipalities, as well as the indigenous coastal comarcas, basically play the executors of state decisions, all of which are centralized in Panama City.
- Nobody promotes and encourages a public ICM policy in Panama. The public bodies and institutions linked by current legislation address coastal, littoral and maritime management from eminently sectoral perspectives: environment, maritime transport, ports, defense and national sovereignty, education, fisheries, aquaculture and tourism.
- There is a varied set of definitions of coastal zone,

coastal area, coastal-marine resources, coastal-marine management, and coastline in the legislation, which needs to be clarified regarding the jurisdictions and competencies of the different public entities.

- There are frequent cases of overlapping competencies between public institutions about the management of the Panamanian coastline and some competency gaps.

It is also clear that the direction of ocean governance cannot be attributed in its entirety to a single entity, as it must be an interplay, promoted from the head of government, between the public administration (with a variety of institutions and multiple sectors), the citizenry and private enterprise. Based on the three dimensions of sustainability (ecological, social-economic and cultural-historical), real governance demands to be open, inclusive and participatory. For the country to take real steps towards OG, it is therefore necessary to take ownership of the vision, objectives and principles of the Oceans Policy (MIRE, 2022) as well as the target objectives of the National Strategic Plan (Panama 2030): Good life for all; Growing more and better; Environmental sustainability; Strategic partnerships for development; Democracy, institutionality and governance (CCND, 2017).

3.3.3 Strategic instruments

The public administration in Panama, which is involved in the coastal-marine territory, has multiple operational and less strategic instruments for managing the territory of interest and the integrated management of this space and its resources. These essential tools for OG, always of a subnational nature, have been promoted mainly by the AMP and ANAM during the period 1998-2006, by the latter and ARAP until 2015 and by the Ministry of the Environment right after this year.

Among the strategic instruments, the subregional and local Integrated Coastal Management Plans (ICMPs), initially promoted by the AMP, then by the ARAP and taken up by the Ministry of Environment after Law No. 8 of 2015, should be highlighted for their relevance. These specific management tools should be integrated in a National Management Plan for natural resources of the Panamanian coastline (IOC-UNESCO/CPPS, 2016). These plans, oriented towards managing hydrobiological, fishing, forestry and beach resources and less towards integrated coastal management, have almost always been formulated through external consultancies for some coastal areas of high natural value with problems of environmental degradation and quality of life of the communities. Table 3 presents a synthesis of the ICMPs under preparation or adopted.

The formulated ICMPs follow the GESAMP methodology (GESAMP, 1996) through five Phases: Integrated diagnosis of the area and institutional/legal framework; Proposals and legitimization; Formulation and official adoption of the plan; Implementation; and finally, Monitoring and evaluation. Implementing these plans could be more robust, as they require heavy funding. However, progress has been made in some areas thanks to the support of the Global Environment Facility UNDP and the Ministry of Environment-ARAP alliance.

Another strategic instrument for OG is Coastal Marine Protected Areas (MPAs). They are one of the main tools for the conservation of oceans worldwide, aiming at protecting biodiversity and promoting healthy marine ecosystems (Grorud-Colvert *et al*., 2021). They strengthen the governance process since they are public policy instruments that require effective citizen participation for their proper management, both for biodiversity conservation and in response to climate change, pollution, and improving the quality of life of the traditional communities settled there (Christie *et al*., 2017; UN, 2020).

Table 3. Summary description of some Integrated Coastal Management (IMC) Plans in Panama.

Plan Name	Location	Planning Stage
ICM Plan for the Gulf of San Miguel and adjacent areas. Darien Sustainable Development Programme	Gulf of San Miguel. Pacific Region Gulf of Panama	Elaborated and adopted by Resolution No.41, March 17, 2006.
ICM Marine Plan for Bocas del Toro	Coastal zone Province of Bocas del Toro Western Caribbean Region Bocas del Toro-Colón	Plan formulated but not yet adopted by regulation
ICM Plan for the Special Management Zone of the Perlas Archipelago	Pearl Archipelago. Pacific Region Gulf of Panama	Established as Special Management Zone (Law No.18, 2007) Plan formulated, but without formal approval
ICM Plan of the Special Marine-Coastal Management Zone of the Southern Zone of Veraguas	Southern Zone of Veraguas Province. Pacific Region Chiriquí-Veraguas	Established as a Special Management Zone (Resolution No.07, August 8, 2008). Plan in formulation
ICM Marine Plan for Pocrí, Pedasí and Tonosí-Península de Azuero	Districts of Pocrí, Pedasí and Tonosí, Province of Los Santos.	Established as a Special Management Zone (Resolution No.095, August 18, 2010). Plan formulated

In Panama, the National Institute of Renewable Natural Resources (INRENARE in Spanish) has, since its creation in 1992, the national body responsible for strengthening protected areas through the National System of Protected Areas (SINAP in Spanish). The General Environmental Law of 1998 pointed out the importance of this system by granting the Directorate of Protected Areas and Wildlife the stewardship of SINAP. After Law No.8 of 2015, the Ministry of Environment became the supreme institution responsible for the system under the Direction of Protected Areas and Biodiversity.

In 1994, 17 management categories were defined for Panama's protected areas. Later, in 2013, new management categories were established to govern the SINAP. The various management categories under which the country's protected areas have been created (more than 30 different designations), as well as the multiple regulations for their management, even with the same management category, make SINAP's Governance and governability difficult. As of today, the National System of Protected Areas (SINAP in Spanish) encompasses approximately 121 protected areas. However, some lack a formal legal framework, while others are established solely through municipal resolutions that are neither recorded in the SINAP database nor assigned to any official management category (Valdés, 2020). According to SINAP, the country has 26 MPAs (Cabrera and Dawson, 2017). In 2019 a new one was created, which completes currently 27 MPAs. However, in its document "Contribuciones determinadas a nivel nacional de Panamá" (MiAmbiente, 2020), the Ministry of Environment identifies "at least" 46 MPAs but does not provide a definitive list, nor does it ensure that all of them have updated and effectively implemented management strategies. Nonetheless, there is a lot of uncertainty regarding the actual number of MPAs in the country. Thus, the absence of comprehensive and specific management plans for all MPAs poses significant challenges to their conservation. Addressing this issue urgently requires updating databases, clarifying the institutional and legal frameworks for each MPA.

Marine-protected area management plans have become a strategic tool for OG. They are the product of a planning process, stakeholders discussions and documenting the proposed management approach for a particular area. Thus, decisions are taken, and these decisions are the guidance for future management (Thomas and Middleton, 2003). In the case of Panama, only 4 MPAs have management plans, and others are governed only by the rules established during their creation. This prevents the establishment of good governance in these areas and results in weak governance processes, harming the conservation of coastal marine zones and make the human populations more vulnerable.

Panama has positioned itself as a blue leader in the last five years, protecting 54% of its Exclusive Economic Zone through regulatory instruments (Gaceta Oficial, 2023; STRI, 2023). However, this success must go beyond a simple legal administrative act, effectively ensuring these areas are fully understood and described based on scientific data about their ecological and biodiversity attributes to establish effective control, surveillance and conservation plans.

The legitimacy and usefulness of the plans, both MPAs and ICMPs, rely on the harmonization and pooling of tasks and resources by all public and private actors involved in their implementation and monitoring. Proper interinstitutional coordination is a vital issue for the success of these tools for OG. Guidelines such as the manual to strengthen these activities elaborated by the MarViva Foundation for eleven MPAs and ICMPs in southwestern Panama (MarViva, 2022) are an excellent contribution in this regard.

3.3.4 Ocean Research and Information

The national public institution responsible for funding and promote science and technology through scientific and sustainable development projects, and also through the development of national protocols, conservation actions and conservation plans for Panama is the National Secretary for Science, Technology and Innovation (SENACYT in Spanish). Created by Law No.13 of April 15, 1997, and amended by Law No.55 of December 14, 2007. SENACYT, therefore, also promotes OG oriented research in the country. However, this research, both from the exact and natural sciences, as well as from the social sciences and humanities, must converge in interdisciplinary information and knowledge, given the complexity and spatiotemporal dynamics of coastal and marine areas. Moreover, finally, this knowledge must be accessible to decision-makers and society.

This is where research plays a key role, as it allows us to understand and analyze the driving forces and the social, economic and cultural activities that generate changes in coastal-marine ecosystems, their dynamics in time and space, as well as the impacts on the well-being of coastal societies (Elliott *et al*., 2017; UNESCO-IOC, 2020). It is in the identification, legitimization, implementation and evaluation where OG takes place.

SENACYT was a key member of the Commission that formulated Panama's National Ocean Policy (PNO in Spanish), approved in 2022. One might believe then that the PNO, the National Science, Technology and Innovation Policy Panama 2040 (see Table 2) and the National Strategic Plan for Science, Technology and Innovation (PENCYT) 2019 - 2024 (SENACYT, 2021) would be properly articulated. However, the reality is that these last two mentioned do not have axes focused on marine components to date. However, currently national marine scientists have been called to make contributions on a new PENCYT where marine sciences are finally integrated (SENACYT, 2025).

In Panama, natural scientific publications began in the early twentieth century. Undoubtedly related to arrival of the Smithsonian Tropical Research Institute (STRI). It works began in Panama in 1910, when the institute led research on the flora and fauna in the Panama Canal area (STRI, n.d.). STRI, located in Panama, is the only Smithsonian office outside the United States. Over the years the Institute has carried out various research projects that support the increase of information in specific sites and promote capacity building (Robertson *et al*., 2009).

Marine capacity building and research led by Panama began in 1967 as a result of recommendations from the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Organization of American States (OAS), the Marine Biology Laboratory of the University of Panama was created as the first entity specialized in marine sciences, whose objective was to train national personnel for the management and evaluation of marine resources and the development of scientific research. Later in 1980, the laboratory was transformed into the Marine Sciences and Limnology Center. In 2005, the Panama International Maritime University was created, and since 2008, it has been training professionals specialized in marine biology.

However, research efforts have not been limited to academia. In 2018, SENACYT created the first Public Interest Associations (AIPs) that execute interdisciplinary projects, and research programs related to the ocean in all its dimensions (plankton, benthos, and neckton) and all ecosystems present in the tropical coastal zone, Coiba Scientific Station (COIBA AIP). COIBA AIP specializes in marine sciences, develops, executes and promotes scientific research and promotes marine conservation activities focused mainly on the natural resources of the Natural World Heritage Site, Coiba National Park. COIBA AIP also generates research opportunities for local scientists and builds capacities for marine science infrastructure and human resources. In 2022, COIBA AIP inaugurated the first oceanography and marine ecology laboratory in the insular Pacific zone of Panama and in 2024 installed the first oceanographic buoy of the country at Coiba National Park (Díaz-Ferguson, 2024)

On the other hand, Panama has strategic NGO´s allies such as MarViva Foundation, National Association for Nature Conservation (ANCON in Spanish), Mar Alliance, Blue Nature Alliance, Conservation International, Biomuseo, and other international institutions, which provide scientific, technical and logistical resources for the proper understanding of the country's coasts and seas. Despite their impact, these organizations support and/or develop specific projects for a given period, so their participation is often not constant over time. It will depend on the interests that arise at each moment and even on the agreements established with governmental entities. Although marine research in Panama has been slow, it is a fact that it has taken important steps to increase the number of marine studies in the country. However, most of these have been focused only on natural science studies, without considering the social sciences (Arenas-Granados, 2012b).

Nevertheless, it remains a minority compared to the Nation's eminently coastal and marine character. SENACYT indicates that the country invests around 0.13% of gross domestic product (GDP) in research and development, making it one of the countries that invests the least in the region. Moreover, this percentage should be distributed to the various branches of knowledge, so the percentage allocated to coastal and ocean sciences and disciplines is low to adequately support decisions and actions to achieve the goals and targets of the 2030 Agenda. Globally, it has been proven that the countries with the highest welfare are those that invest the most in research; an example of this is Switzerland, which invests more than 3% of its GDP in research and leads not only the human development index but also the world index (Cecchini *et al*., 2020), and the global innovation index (WIPO, 2023).

Finally, it should be noted that in Panama, there still needs to be a formal program of interdisciplinary research and knowledge generation aimed at the integrated management of its coastal and marine areas (Arenas and Garces, 2010). This Decade of Ocean Science for Sustainable Development (2021-2030) is the right time to increase marine conservation efforts. This is only possible if marine research systems are strengthened in Panama, where it is able not only to define the species present

in the ecosystems, but also to evaluate their connectivity, which can be a major determinant of marine community structure and ecosystem functioning (Virtanen *et al*., 2020).

Marine connectivity is defined as the exchange of genes, organisms (propagules, juveniles and adults), nutrients, and energy (Balbar and Metaxas, 2019). This ecological parameter is considered an important ecological criterion for design and implementation of MPAs (Botsford *et al*., 2009; Cowen and Sponaugle, 2009).

The purpose of having connectivity studies is to understand how species use the environment for their daily activities and to implement management strategies based on that information, to ensure the protection of ecological functionality and productivity of populations, communities, and ecosystems.

In addition, there is an urgent need for the country to move from a focus on integrated management of aquatic resources to one of integrated management of its coastal-marine areas. This is a challenge yet to be taken up. However, the integrated management of these resources is an essential step in this direction, although it lacks a regional geographical analysis and, therefore, of the public and private territorial processes that take place there; a prior step for the integrated management required for the pursued sustainability.

3.3.5. Citizen participation

Citizen participation is versatile and controversial (Day, 1997). For this review, we are concerned with assessing whether there is a relationship between decision-making for OG and citizen participation itself, which is in line with the Decalogue methodology (Barragán-Muñoz, 2003; 2012). It analyses whether public authorities in Panama encourage citizens who do not hold public positions or functions to participate in decisions related to the territory and, therefore, to their well-being in the administrative and planning processes of the government (Díaz, 2017). It differs from political participation, which consists of voting or contacting elected officials. Also, it differs from the concept of civic engagement, where individuals support their community through volunteering and civic acts. In this context, citizen participation is seen as directly impacting the formulation and implementation of public policies (Callahan, 2007).

Several legal mechanisms related to environmental management and land use planning in Panama promote citizen participation. The Participatory Strategic Plan previously promoted by ANAM and currently by Ministry of Environment in the framework of the National Environmental Policy 2021-2031 (see Table 2) is a good example. Signed by national entities with competencies in environmental management and that are part of the Interinstitutional Environmental System, it has become, both in the first period of action, the participatory framework for reaching consensus on joint lines of action and implementation strategies to address national environmental problems. The process of workshops for the construction and periodic adjustment of this participatory plan, framed within the National Environmental Strategy, is the open instrument for the presentation and discussion of proposals for environmental action in the country.

However, it is common in other public sectors that citizen participation is temporary and structured. There needs to be a more robust participatory culture, with some exceptions. For example, the Inter-institutional Coordination Units and the Conservation and Surveillance Units in the Gulf of San Miguel (Darien), the Bocas del Toro Archipelago and the Las Perlas Archipelago (Panama), promoted by ARAP, were valid mechanisms for citizen participation in the implementation and monitoring of the Integrated Management Plans in these coastal areas.

As early as 2006, the United Nations Development Programme (UNDP) pointed out the problem of citizen participation in Panama (UNDAF, 2006). There needs to be more maturity of demands, the weakness of the grassroots community organizations themselves, and the authorities' lack of encouragement or promotion of citizen participation. This continues to generate little participatory culture, causing society to move towards a culture of conformism, of every man for himself. This weakness of the state in this area must finally be left behind, and participation must be appropriated as an exercise of citizenship, on which the well-being of the people who live and depend on the coasts and the sea in the country will also depend. Establishing the provincial, district and county Environmental Consultative Commissions or other similar inter-institutional mechanisms should be promoted to encourage citizen discussion on the relevant issues of integrated planning and management of these areas. These and other proposals for action identified and agreed upon by Panama officials, teachers and researchers within the framework of the propositional phase of the IBERMAR Network in 2011 are still valid today (Garcés *et al*., 2011).

Figure 3 proposes a schematic guide to orient interinstitutional coordination mechanisms for ocean governance in Panama. Note the relevant role of all stakeholders linked to the generation of

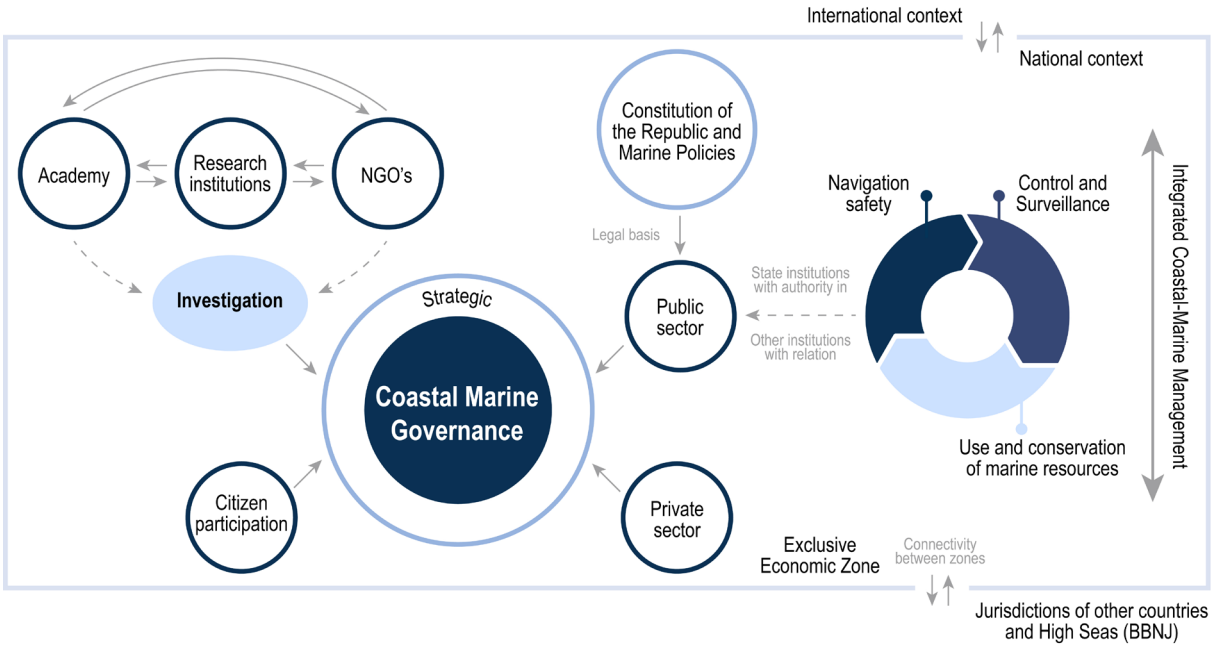

Figure 3. Schematic guide for inter-institutional coordination mechanisms for Ocean Governance in Panama.

research and knowledge, the convergence of crucial stakeholders for the common purpose, and the necessary harmonization of policies and actions with other national governments beyond the country's maritime borders.

4. CONCLUSIONS

Panama is an eminently maritime country. Its productive sectors are closely linked to these spaces: transport, navigation, tourism, fishing, aquaculture, and real estate development, among others. Even given its status as an isthmus, practically all the use and exploitation of the space and its resources in its continental watersheds directly impact its coastline and beyond. Thus, an integrated public policy oriented towards the governance of its strategic coastal and marine spaces that simultaneously pursues the restoration, conservation and protection base in sustainability and social justice will be key for the sustainability of the Nation as a whole. 2024 marks 110 years since the Canal came into operation; for 25 of those 110 years, Panamanians have controlled the interoceanic way, and this control has provided an important opportunity to redirect joint actions towards the country Ocean Governance.

Although more than 15 international agreements and protocols have been signed and more than 20 public policies (directly or indirectly related to GOs) have been developed, most of them do not have a direct approach to marine-coastal zones, which hinders the organization and management of these areas, as well as their progress in regulation and research (Scherer *et al*., 2014). The country does not have enough integrated coastal-marine management plans, very few zones contain written rules and there is no complete characterization of the coasts for the country.

The reality is that social gaps continue to divide Panamanian society. The OG has, first and foremost, a human face. Its indicators of success are closely related to overcoming poverty and inequality and the recognition, valuing and protection of all cultures. It is, therefore, clear that the country depends on an efficient, strong, and high level of institutional development. Education, research and the fight against corruption are the pillars of the required transformation.

Panama's recent National Oceans Policy is a significant step forward in OG; and now it is time to ensure its complete harmonization with the National Strategic Plan with a 2030 vision, and certainly connect this policy with other public policies and strategies such as the National Land Use Planning Policy in order to have a better management and sustainable use of the coastal and marine territory, including its EEZ.

The country needs a specific legal framework for its coastal and marine zones. Currently, the existing one allows for management based only on sectoral norms. Lacking an integrated vision, legislation is not helpful for conflict resolution, given the complex nature of these areas. Analyzing and evaluating the existing regulatory framework would be a valid support for subsequent legal decisions. It is necessary to identify new proposals for the competencies and jurisdiction of institutions to improve the efficiency of governance in these areas. Strengthening the mechanisms for coordinating actions between the public entities with responsibilities in the governance of the Panamanian coasts and sea is a priority. As mentioned by Taveira-Pinto (2004), the disorganization of these entities can lead to a dispersion of capacities and a lack of coordination, which in the end affects society, the ecosystem and governance systems.

The Integrated Coastal Management Plans and Coastal Marine Protected Areas are the main strategic instruments for implementing the approach and philosophy of OG at the sub-regional and local levels. Even with the progress achieved, it is first necessary to improve the articulation of actions between the Ministry of the Environment and ARAP substantially, to involve all other public and private sector stakeholders with interests in these areas, and at the same time to ensure the formulation, regulation and financing of the respective management plans. The legitimacy of these tools, and therefore their usefulness, is based on effective citizen participation.

Finally, local capacity building in terms of training and recruitment of human resources, as well as support for marine research by government decision-makers, the application of new technologies and innovation are essential to improving ocean governance, as indicated by the progress made by several maritime countries around the world.

ACKNOWLEDGMENT

We are grateful for the support in the information: Arnulfo Sánchez, Ramón González (AMP), Milagros Garrido, Marina Gallardo, José Victoria, Osvaldo Rosas (Ministry of Environment of Panama), Thelma Quintero, Alexis Peña (ARAP), Ilya de Marotta, Martín Mitre (Panama Canal Authority) and Dionora Víquez (Metropolitan Natural Park).

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