



# **BEST PRACTICES GUIDE**

## **HEMISPHERIC MARITIME SECURITY**

Prepared by the

**INTER-AMERICAN DEFENSE BOARD**



# **Best Practices Guide in Hemispheric Maritime Security**

**Inter- American Defense Board  
&  
Inter- American Defense College**

**Best Practices Guide in Hemispheric Maritime Security**  
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## **Best Practices Guide in Hemispheric Maritime Security**

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## PRESENTATION



**Major General César Augusto Macedo García**  
Chairman of the Council of Delegates  
Inter-American Defense Board

The Inter-American Defense Board, through its Council of Delegates, promotes technical cooperation among the states of the hemisphere, with the purpose of strengthening shared capabilities in hemispheric security and defense, given the current transnational threats in the maritime domain. In this context, the Guide serves as a strategic tool that systematizes procedures and lessons learned, providing technical inputs for planning and decision-making at the strategic, operational, and tactical levels. Its primary contribution lies in the harmonization of doctrines, the standardization of practices, and institutional strengthening, thereby improving interoperability among forces and institutions. From a systemic perspective, it coordinates actors and resources, optimizes capabilities, and strengthens regional resilience against maritime illicit activities, consolidating a cooperative architecture based on trust and shared responsibility.



**Lieutenant General Reinaldo Salgado Beato**  
Director General of the Secretariat  
Inter-American Defense Board

In today's world, where the seas are the focal point of strategic interests, critical trade routes, natural resources, and transnational hybrid threats, the need for coordinated hemispheric action has become imperative for hemispheric security and defense. This Guide serves as a valuable technical reference for those who bear the daily responsibility of protecting, regulating, and governing the maritime domain from a comprehensive perspective, consistent with the principles of multidimensional security. Its practical approach, grounded in proven experiences and common standards, directly contributes to strengthening regional maritime security. The Secretariat of the Inter-American Defense Board fully supports this initiative as an exercise in substantive and effective cooperation among the institutions of this hemisphere.



**Major General Richard J. Heitkamp**  
**Director and Commander**  
**Inter-American Defense College**

Maritime security is now a strategic and indispensable component of hemispheric security and defense, in a context characterized by threats inherent to a multidimensional security model. The challenges facing our maritime spaces—transnational illicit activities, environmental risks, port vulnerabilities, and tensions in maritime governance—require coordinated, sustained responses based on cooperation among states. In this regard, this Best Practices Guide represents a substantive contribution to strengthening capabilities, promoting interoperability, and consolidating a shared strategic vision, thereby contributing to institutional strengthening and hemispheric collective security.

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## **SUMMARY**

The Best Practices Guide in Hemispheric Maritime Security is a technical and collaborative tool, designed to support the States of the Americas in strengthening their institutional, operational, and regulatory capacities to address shared challenges affecting security in the regional maritime environment.

Its content is organized around a comprehensive analysis of the hemispheric context and progresses toward identifying concrete solutions based on successful experiences implemented across the continent. Through this systematization, the guide promotes adaptable and sustainable models that strengthen maritime governance and regional cooperation.

The proposed approach is structured around seven strategic pillars: ocean governance and regulations; defense against illicit threats; maritime economic development; technical protection of navigation; environmental and natural resource protection; ocean research, technology, and surveillance; and human and cultural security at sea.

Each pillar presents documented best practices, operational recommendations, international regulatory references, technical procedures, and implementation tools, aligned with multilateral frameworks and verified by regional experience. The following were also incorporated: monitoring mechanisms, evaluation criteria, and institutional models geared toward continuous improvement and replicability.

This guide was based on a qualitative and participatory methodology, developed under the technical leadership of the Inter-American Defense Board (IADB) and with the academic support of the Inter-American Defense College (IADC). It benefited from the active participation of experts appointed by the member states of the Organization of American States (OAS), as well as representatives of specialized agencies and allied countries with maritime interests in the hemisphere.

The document expressly acknowledges the diversity of institutional and geographical realities in the region and is closely aligned with the principles of national sovereignty, solidarity-based cooperation, and shared responsibility. In this sense, it constitutes both a technical reference instrument and a platform for strategic dialogue, aimed at strengthening a hemispheric vision of integrated, resilient, and sustainable maritime security.

## PROLOGUE



Major General Rogelio Jorge Amador Mendoza  
Head of Studies  
Inter-American Defense College

It is evident, from a professional and strategic perspective, that Maritime Security requires a comprehensive approach. The increasing complexity of the contemporary maritime environment demands coordinated efforts among armed forces, civilian authorities, international organizations, the private sector, and coastal communities. In this context, this Best Practices Guide in Hemispheric Maritime Security serves as a technical and conceptual reference to facilitate coordinated actions, anticipate emerging threats, and strengthen governance frameworks applicable to the hemisphere's ocean spaces.

The maritime domain of the Americas is configured as a strategic pillar for Hemispheric Security and Defense, regional integration, and sustainable development. Along extensive coastlines converge critical ocean routes, exclusive economic zones, high-capacity ports, highly productive marine basins, essential economic, scientific, and social activities, all contributing to the stability and prosperity of the States. However, these same areas face persistent challenges, such as illicit trafficking of goods, unsustainable exploitation of fisheries resources, marine pollution, port insecurity, and the emergence

of hybrid threats that transcend national jurisdictions.

Given this scenario, progress toward a cooperative and hemispheric maritime security model has become a strategic priority. This Guide responds to this shared need and offers a systematization of best practices and adaptable procedures to strengthen hemispheric coordination. Its purpose is not to prescribe a single model, but rather to provide maritime authorities, security institutions, and decision-makers with a practical tool based on international standards, common principles, and verifiable indicators.

The fundamental value of this work lies in its multidimensional approach. Its chapters integrate aspects related to regulatory design, maritime governance, defense against illicit activities, environmental sustainability, technological innovation, and international cooperation mechanisms. Each section presents operational inputs aimed to strengthen national capacities and promote regional interoperability, while respecting the institutional particularities of the participating States.

This Guide, developed through a specialized technical review and a comparative analysis of national experiences, aspires to be a dynamic and updatable instrument contributing to mutual trust among nations, institutional strengthening, and joint action in shared maritime spaces. We invite relevant authorities and stakeholders to adopt and adapt these best practices to preserve the oceans and the societies that depend on them.

In a century in which the oceans simultaneously concentrate strategic opportunities and common risks, the strategy to move toward a comprehensive vision of Maritime Security is not only a technical challenge but also a collective responsibility. This responsibility commits States, their institutions, and their communities to preserving the future of the seas and the societies that depend on them.

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## EDITORIAL NOTE

This *Best Practices Guide in Hemispheric Maritime Security* is the result of a joint academic and technical effort, grounded on the close collaboration among delegations from different countries in the hemisphere, whose contributions have been fundamental for the identification, systematization and analysis of useful experiences in matters of maritime security.

This document compiles information shared and developed collectively by national representatives, collaborating international organizations and experts from the work team tasked with its development. Its content is nourished by contributions from different institutional and operational perspectives, integrating legal frameworks, lessons learned, case studies and recommendations derived from technical dialogue.

It is worth noting that the information, approaches and recommendations contained in this guide have a strictly academic nature and should not be interpreted as official declarations or as an institutional position. **The opinions expressed herein do not necessarily represent the vision or mission of the Inter-American Defense Board (IADB) or the Inter-American Defense College (IADC), respectively.**

The intention of this publication is to offer practical, reflective and referential input for professionals, decision makers and stakeholders involved in the building of an integrated, cooperative and sustainable maritime security in the hemisphere.

## EPILOGUE



**Captain Fernando de Oliveira Marin**  
Head of the Research Division  
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Throughout history, the seas have been the stage of encounter, exchange and strategic projection, but also of disputes that marked the development of nations. In the American hemisphere, the sea constitutes an essential element for economic development, regional connectivity, the defense of sovereignty and the preservation of environmental balance. However, this breadth of resources and opportunities has converted the maritime environment into a space particularly exposed to transnational threats that exceed the isolated capacities of States and that demand collective responses.

This Best Practices Guide in Hemispheric Maritime Security is configured as a concrete effort to face this shared reality. More than a technical compendium, it expresses the regional consensus to conceive the sea as a common security area. By systematizing best consolidated practices, lessons learned, international standards and applicable legal frameworks, this work

offers realistic and transferable tools for those who have the responsibility for safeguarding the maritime interests of their respective nations.

I wish to express my recognition to those who contributed to the development of this document, offering their knowledge, experiences and perspectives from the different institutional spheres they belong to throughout the hemisphere. In particular, I thank the contributions of the delegations of Argentina, Chile, Ecuador and the Dominican Republic and of the representatives of CICAD, for their valuable participation. I also extend my special gratitude to Captain Ricardo Valdés Fernández, of the Spanish Armada, and to Dr. Rafael Zelesco Barreto, of the Brazilian Naval War School. Finally, my recognition to Lieutenant Alfonso Flores Rojas, of the Mexican Navy, whose rigorous work at the Research Division of the Inter-American Defense College, allowed this guide to sail into port.

Strengthening solid and sustainable hemispheric Maritime Security constitutes a continuous process that demands political will, technological innovation, real interoperability and permanent institutional commitment. This guide does not intend to alleviate the complexity of the topic, but rather to stimulate the exchange of knowledge, promote the adoption of best practices and consolidate a technical community capable of learning collectively.

The sea unites what geography separates. It is expected that this publication shall contribute to the construction of bridges among our nations and that its content favors a cooperative approach that will allow guaranteeing that our maritime spaces continue to be free, navigable, safe and sustainable for present and future generations.

# INTRODUCTION

A SHARED OCEAN, A COMMON MISSION



## 1. Context and Scope

The Americas constitute one of the largest and most complex maritime spaces in the contemporary international system. It comprises 35 sovereign states, more than thirty of which have coastlines on the Atlantic and/or Pacific oceans, or the Caribbean Sea, resulting in a vast and geographically diverse coastal network. The combined area of the exclusive economic zones (EEZs) of coastal countries exceeds 25 million square kilometers, establishing a sphere of maritime sovereignty and jurisdiction of global significance (International Maritime Organization [IMO], 2023; United Nations, 2021). Added to this geospatial dimension is a robust and heterogeneous port infrastructure. The continent is home to several hundred operational, commercial and logistics ports, among which world-class terminals stand out for their cargo capacity, operational efficiency, and interoceanic maritime connectivity. Examples such as the ports of Santos (Brazil), Manzanillo (Mexico), Cartagena (Colombia), Balboa (Panama), and the Port of Los Angeles (United States) reflect a strategic platform that facilitates hemispheric trade, the movement of essential goods, and the integration of global supply chains (ECLAC, 2023; World Bank, 2023).

Taken together, the vastness of the coastlines, the extent of the EEZs, and the density of port facilities make the Americas a region of high strategic value for international trade, maritime security, and regional cooperation. Its maritime configuration, in addition to responding to economic and technological dynamics, also impacts governance, regulation, and sustainable development, reinforcing its importance in the global maritime landscape.

This shared ocean environment has given rise to a renewed hemispheric maritime awareness in the 21st century. The process of maritimization—that is, the growing importance of the oceans in political, economic, environmental, and security agendas—has led states to recognize that the challenges of the seas cannot be addressed in isolation, but rather through cooperative, multidimensional, and sustained approaches.

Hemispheric Maritime Security is now presented as a key dimension of the regional architecture. Its approach includes the defense and protection of resources, as well as the fight against illicit activities, environmental preservation, cybersecurity, the protection of critical infrastructure, and the response to transnational threats. No single state can guarantee the control and stability of maritime spaces of such magnitude and complexity.

The legal and political pillars for cooperative maritime governance were established by both the International maritime law, through the United Nations Convention on the Law of the

Sea (UNCLOS), as well as by the principles of the Inter-American Security and Defense System. The obligation to preserve the marine environment, prevent illicit activities, and cooperate in the peaceful use of the oceans underpins a vision of regional security based on co-responsibility, technical solidarity, and respect for sovereignty (OAS, 2003; IADB, 2019; UN, 1982).

Despite multilateral commitments, structural inequalities persist in technological, legal, and operational capabilities among the States of the hemisphere. While some nations have consolidated highly specialized maritime monitoring, patrol, and control systems, others face difficulties in exercising effective surveillance in their jurisdictional zones. These asymmetries create shared vulnerabilities that require joint responses, technical assistance, and strengthened horizontal cooperation. In response to this situation, several countries and regional organizations implemented best practices in coastal surveillance, port management, maritime information systems, inter-agency coordination, and specialized technical training. Although these experiences vary in scale and approach, many have proven to be effective, sustainable, and adaptable.

The Best Practices Guide in Hemispheric Maritime Security is intended as a technical tool for policymakers, maritime authorities, international organizations, research centers, and operational communities in the sector. Its objective is to identify, systematize, and disseminate established practices that have demonstrated effective results in addressing common maritime security challenges.

The geographic focus is on North, Central and South America, and the Caribbean. The practices included in the Guide address the following:

- Combatting illicit maritime trafficking and smuggling
- Preventing IUU (illegal, unreported, and unregulated) fishing
- Protecting critical maritime infrastructure
- Ocean knowledge management and surveillance
- Technical and operational cooperation among States

Priority was given to those initiatives that are technically validated or effectively operational, excluding those in the design stage or without evidence of application. This Guide is not intended to be an exhaustive compilation, but rather a representative sample aimed at fostering technical cooperation, mutual learning, and the convergence of standards at the regional level.

The guiding principle behind this publication is that strengthening hemispheric maritime security depends on a common vision, based on cooperation, trust, and shared operational excellence. This collective effort seeks to build a more resilient, safe, and equitable ocean environment for the benefit of present and future generations.

## **2. Goals of the Best Practices Guide**

The overall purpose of this document is to provide the Maritime Community of the Hemisphere and those responsible for formulating and implementing public policies on maritime security with a technical and operational tool aimed at identifying, systematizing, and disseminating consolidated best practices in the field of Hemispheric Maritime Security.

The approach adopted is built on the premise that when the various States of the Americas that face the same transnational challenges develop successful solutions, these will become a strategic resource for strengthening regional capacities. This Guide therefore seeks to contribute to the improvement of institutional, operational, and regulatory frameworks by promoting more coordinated, resilient, effective, and adaptive maritime management, in line with the principles of international cooperation, national sovereignty, and shared responsibility.

In accordance with this general goal, the development of the Guide was steered by the following specific objectives:

- A. Document successful national experiences that have demonstrated concrete results in critical areas such as prevention, surveillance, operational response, and maritime security governance. Based on these experiences, the aim is to identify common elements and technical patterns that can serve as a basis for formulating guiding criteria for best practices adaptable to different institutional contexts.
- B. Offer practical and contextualized recommendations that facilitate the transfer, adoption, or adaptation of these practices, considering the legal, administrative, and operational particularities of each State. The emphasis is on replicable solutions that respect the hemisphere's regulatory diversity while promoting shared minimum standards.
- C. Foster the technical exchange of information, institutional cooperation, and mutual strengthening among the countries of the hemisphere, contributing to the development of regional synergies in response to transnational maritime threats

such as drug trafficking, illegal fishing, smuggling, pollution, piracy, and other forms of organized crime.

- D. Make visible sustainable, scalable and innovative approaches to maritime governance, coastal surveillance, port control, resource management and environmental protection, highlighting those models that incorporate technology, interagency cooperation and community participation as pillars of modern and equitable maritime security.

Thus, this Guide was consolidated as an instrument aimed at strengthening regional maritime awareness and providing useful operational references for decision-makers, at a historical moment in which ocean security is shaped as one of the essential components for the stability, integration and sustainability of the hemisphere.

### **3. Methodological Approach of the Research**

This Guide was developed using a qualitative and documentary methodology, aimed at identifying, analyzing, and systematizing national best practices in Hemispheric Maritime Security. Priority was given to concrete experiences developed by the States of the Americas that have demonstrated operational effectiveness, institutional sustainability, and verifiable impact on the management of maritime spaces.

The process was structured around the collaborative research cluster model, led by the Inter-American Defense Board and the Inter-American Defense College. This methodological approach facilitated the articulation of inter-agency capabilities, consolidating a technical space for joint reflection, policy analysis, and the formulation of operational proposals with a regional basis. The methodology was based on principles of horizontal technical cooperation, sovereign participation, and the production of collective strategic knowledge.

The direct contributions from experts of various nationalities, appointed by the member states of the Organization of American States, were integrated throughout the development of this document. These contributions were essential to ensure the technical validity, political relevance, and regional representativeness of the selected practices. For this reason, this guide not only reflects a technical compendium but also a legitimate exercise in operational diplomacy and shared governance in matters of maritime security.

The documented best practices constitute an authoritative synthesis of accumulated institutional knowledge and respond to the structural and emerging challenges of the

hemispheric maritime environment. The following methodological stages were developed for their identification and analysis:

- A consensus-based definition of Hemispheric Maritime Security, incorporating common terminology, operational dimensions, and legal foundations shared by the participating countries.

- Identification of strategic lines of action, based on common threats and regional priorities.

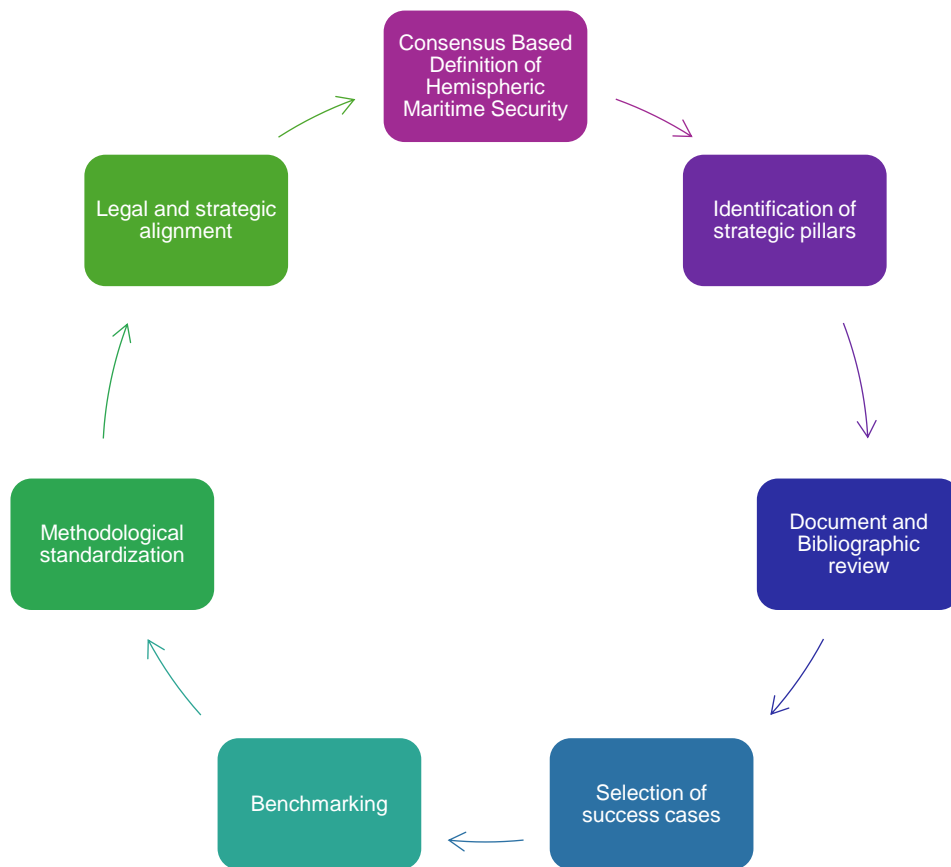
- Documentary and bibliographic review, which included institutional sources (operational manuals, national doctrines, strategic plans), technical reports, academic literature, and hemispheric and international regulatory frameworks.

- Selection of success cases, guided by criteria of: verifiable impact; sustainability over time; operational adaptability; and replicability in diverse contexts.

- Comparative analysis of selected practices, focusing on: factors of institutional success; interagency coordination mechanisms; supporting regulatory structures; and transferable lessons learned. Methodological standardization in the presentation of each best practice, using a general template that includes: context, objectives, key stakeholders, results, resources used, sustainability elements, and implementation recommendations.

- Normative and strategic alignment, integrating relevant references from the Inter-American Security and Defense System, the International Law of the Sea, and other current international and national instruments on maritime security and regional cooperation.

Based on the above, it can be stated that the added value of this Guide lies in the fact that its content was collectively developed based on real and verifiable experiences. The active participation of national experts not only allowed for the validation of information from the field but also enhanced the technical, legitimate, and representative nature of the final product. In this way, it is consolidated as a reliable, practical, and adaptable tool for the continuous improvement of maritime management on the continent.



**Figure 1.** Stages of the GBP-SMH methodological process

#### **4. Legal Framework**

From its onset, the Best Practices Guide in Hemispheric Maritime Security was based on the principles, mandates, and institutional frameworks established by the Organization of American States (OAS), as the main regional political forum for the multilateral handling of the continent’s affairs. In this context, the Guide aligns with the OAS’s efforts to strengthen cooperative security in the hemisphere, in accordance with the principles of the OAS Charter and current inter-American instruments on defense, sustainable development, and regional peace.

Within this framework, the Inter-American Defense Board (IADB)—the OAS’s technical and advisory body on defense and security matters—plays an essential role. According to its Statute (2006), Chapter I, Article 2, the IADB’s purpose is to provide technical, educational, and strategic advice to member states, promoting cooperation and institutional strengthening. The same article underscores the importance of considering the particular conditions of States with fewer capabilities, which face greater vulnerability to traditional and emerging

threats, such as illicit trafficking, illegal fishing, marine pollution, and cyberattacks on port facilities.

The geographical, operational, and economic complexity of the coastal states of the Americas imposes a growing need for integrated and coordinated responses. The transnational nature of maritime threats demands a security architecture based on shared frameworks, technical cooperation, information sharing, and mutual trust. In this regard, the IADB's mandate not only institutionally empowers the development of tools such as this guide but also reinforces its legitimacy as a practical instrument for standardizing processes, disseminating best practices, and contributing to capacity building among States.

The strategic relevance of this effort was endorsed by the IADB Council of Delegates, which approved strengthening the maritime capabilities of member States as a priority line of action through Resolution No. 251/2023. This orientation was consolidated by means of Resolution No. 259/2023, which established the Hemispheric Maritime Security Program as a permanent, evolving, and cooperative activity, with the direct participation of navies, coast guards, and maritime security forces of the region.

The process was supported by the Inter-American Defense College (IADC), the IADB's academic body, which provided methodological assistance, technical coordination, and analytical content. In accordance with its educational mission, the IADC contributed a cohesive vision that fostered the development of a guide with conceptual rigor, a multidisciplinary approach, and operational utility for those responsible for maritime management.

Therefore, this Guide represents a collective effort by the key stakeholders involved in the management, protection, and governance of the Americas' maritime spaces. Its development responds both to immediate operational needs and to sound regulating principles, reaffirming the commitment of the States of the hemisphere to peace, shared security, and the sustainable protection of their maritime spaces.

## **5. Target Audience**

The Best Practices Guide in Hemispheric Maritime Security is addressed to institutional and social stakeholders directly or indirectly responsible for the management, regulation, surveillance, and cooperation in the maritime environment of the Western Hemisphere. Its content has been structured based on a functional and inclusive approach, taking into

account the diversity of capabilities, levels of responsibility, and relevant audiences in the region. In particular, this document is addressed to:

- Maritime and port authorities, responsible for the planning, supervision, and regulation of activities in coastal zones, ports, and areas under national jurisdiction, with key competencies in security, trade, and sustainable development.

- Naval forces and coast guard services, strategic actors in maritime surveillance, interdiction of illicit activities, search and rescue, and response to emergencies and hybrid threats.

- Security and Defense institutions, involved in protecting the maritime environment against transnational crimes such as drug trafficking, human trafficking, smuggling, and other risks that compromise regional security. Customs and border control agencies, responsible for inspecting, monitoring, and overseeing the maritime transit of people and goods, and for ensuring regulatory compliance in economic, health, and environmental matters.

- Regional security and defense cooperation agencies, committed to strengthening joint capabilities, developing common regulations, and promoting operational synergies among the States of the hemisphere.

- Decision-makers, technical advisors, and public policy designers, whose role is essential in formulating national and international strategies on maritime security and integrated ocean space management.

- International organizations, that provide technical, institutional, and financial assistance to the countries of the hemisphere in maritime security capacity building processes.

- The general public, whom we seek to bring closer to the work of specialized agencies, by promoting a greater understanding of the strategic value of ocean spaces, as well as the impact that Hemispheric Maritime Security has on the daily lives of millions of people in the Americas and around the world.

Overall, this Guide is intended as a technical, practical, and educational reference tool that will facilitate collaborative learning, knowledge sharing, and capacity building to more effectively address common challenges affecting maritime security. It also contributes to strengthening a hemispheric maritime culture based on shared responsibility, regional cooperation, and a commitment to the security of shared ocean spaces.

# CHAPTER I

## PRINCIPLES FOR MARITIME SECURITY IN THE 21ST CENTURY



Hemispheric Maritime Security is currently constituted as a comprehensive and multidimensional concept. Addressing it requires moving beyond purely operational or technical approaches to incorporate perspectives that recognize the interaction between legal, political, environmental, social, and technological factors. This chapter establishes the guiding principles that laid the foundation for the identification, selection, and analysis of best practices included in this Guide, based on a strategic understanding shared by the States of the Americas.

The global “maritimization” process was consolidated in the 21st century. It is understood as the growing dependence of countries’ economic, environmental, and political well-being on the sustainable and safe use of ocean spaces (Bueger & Edmunds, 2020). In the case of the Western Hemisphere, this process acquires a unique geopolitical dimension, integrating multiple coastal zones, strategic corridors, and shared challenges. This interdependent environment demands maritime governance that transcends national management, promotes regulatory harmonization, strengthens institutional capacities, and fosters a cooperative security vision, in accordance with the principles of the Inter-American system.

## **1.1 Maritime Governance in the 21st Century**

Contemporary maritime governance is conceived as the set of institutional, regulatory, and cooperative processes through which States regulate, protect, and coordinate the sustainable and safe use of their jurisdictional ocean spaces. More than an administrative function, it constitutes a strategic framework for managing multiple, often conflicting, interests, ranging from security and economic development to environmental protection and international cooperation (Chirinos-Burgos & Camargo, 2023).

This Guide adopts a maritime governance approach based on five fundamental pillars, identified through a comparative analysis of national and international experiences, in line with recommendations from multilateral organizations such as the International Maritime Organization (IMO), the Food and Agriculture Organization of the United Nations (FAO), and the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO):

- a. Multilevel and inter-institutional coordination: The security and sustainability of the maritime domain depend on cooperation among different levels of government (national, subnational, and local) and institutions with diverse mandates: defense, customs, environment, migration, ports, among others. Interoperability among these

entities has proven to be a determining factor for the success of integrated maritime policies (Cisneros-Montemayor et al., 2024; ECLAC, 2021).

- b. Cooperative sovereignty: Although States retain full sovereignty over their maritime zones, common threats—such as illegal fishing, drug trafficking, or human trafficking—require coordinated responses. Regional cooperation, through joint patrols, intelligence exchanges, or combined exercises, strengthens the principle of shared sovereignty (Serbin, 2018; OAS, 2022).
- c. Legality and respect for international law: Compliance with the international law of the sea, particularly the United Nations Convention on the Law of the Sea (UNCLOS), provides the legal basis for the delimitation of maritime areas, the peaceful settlement of disputes, and the harmonious regulation of ocean use. Legality is, therefore, an essential condition for predictability and trust among States (Tomassini, 2012; UN DOALOS, 2021).
- d. Sustainability and ecosystem approach: Effective maritime governance must incorporate an ecosystem approach, guaranteeing the conservation of marine biodiversity, the rational use of resources, and the control of the environmental impact caused by human activities. Programs such as the UNDP’s Project “Focal Points for Ocean Governance” demonstrate the need to integrate environmental protection into maritime security strategies (De Miguel & Tavares, 2015; IOC-UNESCO, 2023).
- e. Institutional resilience: In a context characterized by climate change, accelerated digitalization, and new threats (such as cyberattacks or extreme weather events), states need flexible, technically capable, and legally up-to-date institutions. Institutional resilience is key to ensuring the continuity of critical functions in the maritime sphere (Bueger & Edmunds, 2020).

These principles allow us to transcend a fragmented or sectoral view of maritime security by integrating governance, defense, sustainability, and cooperation. They also constitute the analytical framework upon which the strategic pillars of this Guide were built, facilitating its adaptability to diverse contexts within the hemisphere.

# PRINCIPLES FOR A MARITIME GOVERNANCE



Figure 2. Principles of Maritime Governance

## 1.2 Hemispheric trends in the management and governance of the Maritime Space

As mentioned in the previous section, the notion of maritime governance has evolved toward a holistic approach that recognizes the interdependence among security, sustainability, economic development, and international cooperation in the management of ocean spaces. Within this framework, numerous states in the Americas have adopted their own maritime administration models, aligned with international principles promoted by specialized agencies and the United Nations (UN) agencies linked to the blue economy and ocean sustainability.

These experiences reflect both the level of institutional maturity of each country and its commitment to maritime governance guided by legality, intersectoral coordination, resource protection, and the management of emerging threats. Some prominent models are presented below:

### **Brazil: From the “Blue Amazon” to a comprehensive National Maritime Policy**

Brazil consolidated a maritime governance model with strong institutional and strategic support. The recent enactment of Decree No. 12,481/2025, which establishes the new National Maritime Policy (NMP), marks a milestone in the integration of sectors such as defense, environment, economy, transportation, health, tourism, and education under a common vision: the sustainable and safe use of the so-called Blue Amazon, which represents more than 60% of Brazilian territory (Brazilian Navy, 2025). The NMP establishes clear guidelines to guarantee national sovereignty, promote sustainable economic development,

preserve marine ecosystems, and strengthen scientific research. It also promotes innovation in the shipbuilding industry, the expansion of nautical tourism, and the development of public policies geared toward coastal communities. On the geopolitical front, it reinforces Brazil's regional leadership in forums such as the South Atlantic Peace and Cooperation Zone (ZPCAS). "The new Maritime Policy transforms this heritage into concrete opportunities: sustainable jobs, scientific innovation, national security and environmental protection" (Brazilian Navy, 2025).

### **Peru: Governance led by the Multisectoral Commission for State Action in the Maritime Sphere (COMAEM)**

COMAEM crafted the National Maritime Policy 2019-2030, which is now a solid platform for the management and development of maritime interests. This policy aims to enable the comprehensive and systemic development of maritime activities in a balanced and coherent manner, taking into account the various public and private organizations that interact in this field. These organizations represent a diversity of specializations necessary for the comprehensive administration of maritime spaces. Maritime interests are the expression of the nation's collective desire to use, protect, and benefit from the resources of the maritime domain and inland waters, as well as to fulfill the functions incumbent upon the State in the areas under its responsibility, as stipulated by treaties to which it is a party. This is achieved through activities in the political, social, economic, legal, scientific, cultural, and other fields, with the goal of contributing to national well-being and security on an ongoing basis, and strengthening the State's management capacity in the maritime sphere.

### **Chile: Governance focused on sustainability and marine protected areas**

Chile stands out for its well-established marine conservation policy. Through a regulatory and operational approach based on sustainability, the country has protected more than 40% of its territorial waters by creating marine protected areas (MPAs). Its governance system integrates environmental monitoring, community participation, and scientific management under an institutional structure led by the Armed Forces Undersecretariat, the Chilean Navy, and the Ministry of the Environment (Government of Chile, 2023). Chile has been a proactive participant in international forums such as the Our Ocean Conference and promotes regional collaboration to address overfishing, marine pollution, and the effects of climate change in coastal areas.

### **Ecuador: Island governance and strategic protection of the Galapagos ecosystem**

The Ecuadorian experience focuses on a comprehensive island-based approach, centered around the Galapagos Marine Reserve, one of the most biodiverse in the world. Ecuador has combined naval security efforts, environmental diplomacy, and satellite surveillance to counter threats such as illegal, unreported, and unregulated (IUU) fishing, particularly from foreign fleets. These actions are complemented by cooperation within the framework of the Galapagos Agreement with Colombia, Panama, and Costa Rica, strengthening regional governance over critical marine corridors such as the CMAR (Eastern Tropical Pacific Marine Corridor).

### **The United States of America: Technological governance and integrated maritime security**

The United States has incorporated maritime governance into its national security architecture through policies such as the National Ocean Policy, U.S. Coast Guard programs, and regional strategies driven by U.S. Southern Command (Southcom). Its model prioritizes freedom of navigation, technological dominance, interoperability, and the protection of critical infrastructure. The United States promotes joint patrol initiatives, multilateral training (PANAMAX), and maritime intelligence cooperation, thus maintaining significant influence in the Caribbean and the Eastern Pacific.

### **Mexico: Governance led by the Secretariat of the Navy (SEMAR)**

Mexico adopted a centralized maritime administration model under the leadership of the Secretariat of the Navy (SEMAR). This model comprises port security, marine environmental protection, the combat against transnational organized crime, and the safeguarding of human life at sea. In addition to its active participation in UNCLOS, Mexico promotes cooperation frameworks such as the Cartagena Agreement and participates in combined maritime interdiction exercises on a regular basis, including Operation Orion. It also strengthened the protection of areas such as the Gulf of Mexico and the South Pacific through coastal surveillance technology and maritime traffic control.

Despite these advances, the region faces structural challenges that hinder the consolidation of a fully functional hemispheric maritime governance system:

- Regulatory and technological asymmetries among States with different capabilities.
- Unresolved jurisdictional disputes that limit operational cooperation.

- Budgetary constraints for developing capabilities in ocean surveillance and emergency response. Faced with transnational threats affecting maritime domains—such as drug trafficking, illegal fishing, trafficking in persons, cyberattacks, and pollution—countries in the Americas have moved toward collaborative maritime governance models. These are expressed both in the strengthening of institutional networks and in the periodic execution of joint exercises, which consolidate capabilities, interoperability, and mutual trust.

The Operative Network of Regional Cooperation of Maritime Authorities of the Americas (ROCRAM) is one of the most relevant institutional pillars. It was founded to facilitate technical dialogue and coordinated action among national maritime authorities. ROCRAM promotes the exchange of regulatory information, the standardization of procedures, and mutual assistance on issues such as inspections, vessel control, and port security. This network enabled the establishment of a community of practice in regional maritime governance, where countries share progress and challenges from a horizontal perspective of technical cooperation (Sánchez, Bernal & Osorio, 2004). In parallel, multinational maritime security exercises are steadily gaining relevance as operational tools for collaborative governance. Among the most significant are:

- Operation ORION, an initiative originally launched by Colombia, which has now evolved into a multinational coalition against transnational maritime crime. More than 40 countries participated in its 2021 edition, achieving record drug seizures, dismantling criminal networks, and improving coordination among naval, customs, and intelligence forces (Cuesta, 2021). ORION is now a platform for operational diplomacy, where national capabilities converge with shared regional security interests.

- Exercise PANAMAX, led by the United States through the Southern Command (SOUTHCOM), but with increasing regional prominence, simulates Panama Canal defense scenarios against hybrid and conventional threats. It includes joint training, C4ISR (command, control, communications, computing, intelligence, surveillance, and reconnaissance) interoperability, and coordinated maritime operations among the navies of different countries in the Americas. PANAMAX strengthened strategic trust between maritime forces in Latin America and the Caribbean, favoring the institutionalization of integrated responses (Ospina Arias, 2022).

These initiatives demonstrate that hemispheric maritime security cannot be addressed in isolation or solely at the national level. Its nature demands multi-level responses that combine regulatory coordination, tactical cooperation, and operational diplomacy. The consolidation of

networks like ROCRAM and the implementation of exercises such as PANAMAX and ORION not only strengthen capabilities but also foster a shared maritime culture based on prevention, transparency, and strategic solidarity.

### **1.3 Contemporary Challenges in Hemispheric Maritime Security**

Despite advances in institutional integration, regulatory standardization, and regional operational cooperation, the countries of the Americas continue to face a set of structural, emerging, and multidimensional challenges that limit their capacity to exercise effective, sustainable, and sovereign control over their maritime spaces. These challenges not only affect governance and security in the strict sense but also compromise marine biodiversity, regional stability, and human well-being linked to the seas. Addressing them requires coherent legal frameworks, updated technical capabilities, and a sustained political will for intergovernmental cooperation.

#### **a) Transnational Crime and Hybrid Threats**

The continent's maritime routes continue to be used by transnational criminal networks that combine drug trafficking, smuggling, human trafficking, arms trafficking, and money laundering. These organizations have increased their levels of sophistication through the use of semi-submersible vessels, AIS signal spoofing, falsified fishing vessel documentation, and commercial camouflage strategies (Rivera-Páez & Ceballos, 2023). Just recently, a merge among illegal activities has been observed, such as corruption in port environments, cyber threats, and the infiltration of legitimate sectors such as tourism and commercial fishing, thus creating a hybrid environment that is difficult to counteract through traditional means (Ibáñez Gómez et al., 2024; IADB, 2024).

#### **b) IUU Fishing and Pressure from Non-Cooperative Fleets**

Illegal, unreported, and unregulated (IUU) fishing represents a growing threat to the ecological sustainability, food security, and economic sovereignty of coastal states. In the South Pacific, several nations face systematic pressure from highly technological foreign fleets operating at the limits of their exclusive economic zones (FAO, 2023). Countries such as Ecuador, Peru, and Chile have reported repeated incursions by unidentified vessels or vessels flying flags of convenience, which have forced them to reinforce patrols, establish temporary exclusion zones, and resort to regional diplomacy mechanisms (Americas Quarterly, 2024).

#### c) Exposed Port Infrastructure: Physical, Logical, and Climatic

The continent's ports present significant vulnerabilities in terms of physical security (sabotage, smuggling, industrial pollution), logical security (cyberattacks on logistics or customs control systems), and climatic security (storms, erosion, sea-level rise). The Inter-American Committee on Ports (CIP, 2024) has pointed out a worrying gap in port cybersecurity, especially in medium and small terminals in the Caribbean and Central America. This is compounded by a lack of resilient infrastructure to withstand extreme weather events, which compromises the continuity of logistics operations (MAPFRE Global Risks, 2024).

#### d) Regulatory Fragmentation and Low Interoperability

The absence of a hemispheric legal framework that harmonizes criminal typologies, boarding protocols, data exchange mechanisms, and operational doctrines limits effective cooperation among navies, coast guards, and other maritime agencies. Differences between national legal frameworks also hinder joint mission planning, technological interoperability, and communications standardization, as recognized by the Inter-American Defense Board (IADB, 2024). This directly impacts the capacity to respond to shared threats, reducing the effectiveness of existing agreements (Quevedo, 2023).

#### e) Ecological Threats without a Coordinated Response

The deterioration of marine ecosystems in the Americas—due to acidification, overfishing, pollution, loss of critical habitats, and extreme weather events—has not allowed to fully integrate most states into the maritime security doctrines. Despite the essential role of the oceans in energy security, fisheries, biodiversity, and coastal protection, many institutional frameworks lack the capacity for environmental monitoring, oceanographic analysis, and rapid response to climate emergencies (De Miguel & Tavares, 2015; IOC-UNESCO, 2023). This puts at risk both coastal populations and marine-dependent economic systems.

#### f) Technological Asymmetries and External Dependence

Latin America presents an uneven landscape in terms of naval technology, remote surveillance, port automation, and artificial intelligence applied to maritime security. These asymmetries hinder technical cooperation, deepen operational gaps, and increase dependence on foreign solutions (Motta do Carmo, 2023). While some countries have made progress in integrating satellite monitoring technologies, cyber defense, and underwater robotics, others face budgetary, training, or technological upgrade limitations, which weaken their ability to respond to complex threats.

# CHAPTER II

## LEGAL ANCHORES: MARITIME SECURITY LEGAL FRAMEWORK



Maritime security in the Americas is closely determined by the existing legal framework at the international, regional, and national levels. The effective implementation of best practices is not possible without a comprehensive understanding of this regulatory framework, including the practical application challenges faced in diverse state contexts.

This chapter presents an analysis of the main international legal instruments that regulate maritime security, identifies common trends across comparative maritime law in the Americas, and examines the persistent legal barriers that hinder the consolidation of a coherent and functional regulatory architecture for hemispheric maritime security.

## **2.1 Binding International Instruments**

The international maritime security regime is based on a set of multilateral treaties, technical protocols, and regional agreements adopted by States. These instruments define principles, obligations, State rights, and mechanisms for intergovernmental cooperation, facilitating their progressive incorporation into national legislation. The following main treaties and conventions that legally underpin maritime security policies in the Americas stand out:

- The United Nations Convention on the Law of the Sea (UNCLOS, 1982): This constitutes the universal legal framework for ocean governance. It establishes the competencies of coastal states, flag states, and port states; defines maritime zones, navigation rights, criminal jurisdiction, and mechanisms for resource conservation and combating illicit activities.

- International Convention for the Safety of Life at Sea (SOLAS, 1974), and its amendment through the ISPS Code (2002): These provide standards for the security of ships and port facilities. The ISPS Code, in particular, has been key in preventing illicit acts and threats such as maritime terrorism. Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA, 1988) and its 2005 Protocol: Criminalize conduct such as the use of maritime transport for terrorist activities, including the trafficking of weapons of mass destruction.

- United Nations Convention against Transnational Organized Crime (Palermo Convention, 2000) and its Protocol against the Smuggling of Migrants by Sea: Directly link maritime security with the fight against transnational organized crime, incorporating a human rights approach.

- Inter-American cooperation agreements on maritime interdiction, promoted within the framework of the Inter-American Drug Abuse Control Commission (CICAD), and various

bilateral treaties on joint patrols, shared intelligence, and operational jurisdiction in adjacent areas.

The effective implementation of these instruments has allowed many states in the hemisphere to strengthen institutional capacities in surveillance, port infrastructure protection, combating drug trafficking, and controlling maritime routes. However, their practical application remains uneven and faces challenges related to internal regulatory adaptation and cross-border cooperation.

## **2.2 Compared Maritime Law for Maritime Security in the Americas<sup>1</sup>**

This chapter presents an initial study comparing national legislation related to maritime security in a selection of countries in the Americas. Its objective is to offer an overview that allows the reader to identify the different approaches adopted by these states in addressing various critical aspects of maritime security.

The sample analyzed includes the national legislation of Argentina, Brazil, Chile, Colombia, Ecuador, the United States, and Peru. This selection allows for a broad comparative perspective, considering the diversity of legal traditions and maritime realities present in the Americas. These countries were chosen due to their geopolitical relevance in the inter-American context, the accessibility of their legal frameworks, and the collaboration of experts and military personnel from the countries that contributed to this Best Practices Guide.

From a methodological perspective, the research aimed to limit itself, as far as possible, to the analysis of national laws or their equivalent—that is, excepting their constitutions, the highest-ranking legal instruments in each country. However, recognizing the complexity of legal systems, lower-level decrees and regulations were also included when they established rights and obligations not covered by the main laws, or when they regulated matters lacking specific treatment in the higher legislative framework. This layered reading of the legal order was designed to facilitate a more complete understanding of the laws and the legal system in which they are embedded, thus allowing for the identification of common trends and particular features among the countries analyzed.

The research systematically analyzes and compares the national legal frameworks relevant to maritime security, organizing them by key themes. To this end, the following areas were defined as pillars of the detailed research:

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<sup>1</sup> Article by Dr. Rafael Zelesco Barretto.

- Maritime and waterway security: In general terms, this section examines how each country conceives maritime security as an object of regulation and public policy. It analyzes the level of regulatory development, the authorities responsible for its application, the rights and duties established for the regulated actors, as well as references to supplementary laws or secondary regulations.
- Illegal, unreported, and unregulated fishing (IUU fishing): This section examines how national legislation regulates fishing based on the different maritime zones defined by the United Nations Convention on the Law of the Sea. It explores whether IUU fishing is classified as an administrative offense or a crime, whether the term is used explicitly or through a functional translation, and how the actions of vessels flying national or foreign flags are penalized.
- Maritime drug trafficking: This section analyzes whether national legal frameworks include specific provisions on the transport of illicit substances by sea, differentiating it from the generic criminal offense of drug trafficking. This distinction is relevant given the growing role of the sea in transnational organized crime routes.
- Other topics covered include piracy and armed robbery, marine pollution, marine protected areas, marine scientific research, and the protection of underwater cultural heritage.

The selection of these topics follows a logic that seeks to combine combating specific threats to the stability of maritime order with policies aimed at actively strengthening hemispheric maritime security. The overall objective is to build a comprehensive vision that considers both the strategies of the countries to confront destabilizing factors and measures aimed at consolidating that order through environmental, scientific, cultural, and other initiatives.

This comparison is expected to offer useful analytical insights into the various legal and political tools adopted by American countries to safeguard their maritime interests, thus contributing to greater regional stability.

Furthermore, it is noted that it is considered desirable for this study to be expanded in future editions of the Best Practices Guide in Hemispheric Maritime Security. The knowledge compiled here can be enriched by including more countries, and it is hoped that the matrix of

topics and subtopics developed will serve as a methodological reference for the analysis of new national legislation in future editions.

### **Comparison of National Maritime Security Legislation**

The first criterion for comparing national legislation is how each country generally conceives maritime security as an object of regulation and specific public policies. To this end, national laws addressing maritime security are considered.

The objective is to achieve a sufficiently deep understanding of these regulations to identify common trends and particular characteristics. The review of these laws was organized based on the following criteria: Level of regulatory detail; Identification of authorities responsible for actions or oversight; the method of establishing rights and duties for recipients; and references to supplementary or lower-ranking regulations that develop specific aspects.

#### **a. Level of detail of national legislation on maritime security**

##### **Argentina**

The Navigation Law (Law No. 20,094) presents a high degree of regulatory detail regarding maritime security and navigation, serving as the central legal framework for water transport and related activities in the country. It establishes specific requirements for the registration, nationality, and documentation of vessels, as well as the responsibilities of the Maritime Authority, captains, and other officials regarding navigation, discipline, and vessel maintenance. It also regulates the mandatory use of pilotage and towing services for safety reasons.

Furthermore, this law covers a wide variety of topics such as general navigation, vessels, ports, maritime personnel, contracts (chartering, transport, leasing), accidents, and ship mortgages. The procedures for handling maritime accidents (collisions, groundings) are detailed, including investigation processes to establish causes and responsibilities. It also addresses the management of shipwrecks and their potential appropriation by the State in cases of abandonment. Furthermore, it includes provisions on marine pollution, aligned with international conventions such as MARPOL, and establishes both civil and administrative liability, as well as the requirement for spill insurance. Penalties are expressed in national currency or in units of account.

##### **Brazil**

Brazil has the Waterway Traffic Safety Act (Lei 9,537/1997) in force. It was drafted with a good level of detail, and particularly focused on the operational aspects of navigation,

environmental protection, and the oversight powers of the Brazilian maritime authority. The law clearly defines its objective: to safeguard human life at sea, guarantee navigational safety, and prevent environmental pollution, both in the open sea and in inland waters. Its application extends to vessels, platforms, and support facilities.

The law details the duties of the maritime authority, including the licensing and registration of maritime personnel, the control of naval traffic, inspections, the determination of freeboard, and the approval of maritime facilities. Furthermore, it regulates administrative measures such as the retention of certificates, the suspension of sailing, and the seizure of maritime works. A relevant aspect is that it authorizes the maritime authority to define areas where the complementary use of pilotage is required, based on operational parameters.

It also establishes a structure for investigating maritime accidents, including procedures to identify causes, determine responsibilities and impose sanctions, as well as the possibility of appeal (Art. 24).

### **Colombia**

The Colombian government does not yet have a comprehensive law regulating navigation, although it has a draft Maritime Code that has been widely circulated within the national maritime community, particularly by the General Maritime Directorate (DIMAR), the country's maritime authority. This draft proposes establishing a comprehensive legal framework for maritime activities, addressing aspects related to navigation safety, human life at sea, and the protection of the marine environment. It is based on principles such as assistance, the autonomy of maritime law, good faith, the integrity of the vessel, internationality, the prevalence of technical criteria over commercial ones, and the "polluter pays" principle.

Although Colombia has not acceded to the United Nations Convention on the Law of the Sea (UNCLOS), the draft bill incorporates numerous elements of that convention, reflecting an effort to align with international practices. It regulates access to maritime areas (territorial waters, the contiguous zone, and the exclusive economic zone), and establishes rules on innocent passage, prohibiting certain activities in territorial waters.

It also includes provisions on navigation, flag flying, licensing, flag reservation for certain activities (such as coastal shipping, offshore support, dredging, and towing), and specific rules for fishing and research vessels. The contractual provisions are comprehensive, covering charter parties, the transport of goods or passengers, towing, ship mortgages, and shipbuilding or repair contracts.

The draft bill strengthens DIMAR's authority, granting it judicial and enforcement powers regarding maritime accidents and incidents. It provides for measures addressing collisions, groundings, and pollution, and regulates the removal of wrecked or grounded vessels, including their declaration of abandonment and the required financial guarantees.

The penalty regime is detailed, with dozens of violations classified by type (safety, environment, vessel size) and specific penalties, including provisions on recidivism and preventive measures (Articles 364 et seq.). Compared to the other regulations analyzed, this draft bill appears to be the most comprehensive and ambitious, although it has not yet been approved. However, DIMAR appears to be applying many of its provisions de facto, which could facilitate its future legislative approval.

## **Chile**

Chile has a comprehensive Navigation Act (Decree-Law No. 2,222 of 1978) that extensively regulates activities related to navigation. It establishes the General Directorate of Maritime Territory and Merchant Marine (DIRECTEMAR) as the national maritime authority, responsible for enforcing national laws, international conventions, and regulations related to navigation and marine environmental protection. It defines the responsibilities of maritime authorities at various levels: director, maritime governors, port captains, and prefects.

The law addresses the registration and nationality of vessels, distinguishing between different types of ships and the procedures for acquiring and maintaining the Chilean flag. It also establishes rules for the clearance and reception of vessels in domestic and foreign ports.

Regarding maritime accidents, the law establishes a framework for their handling, including the obligation to report, investigation procedures, and the creation of maritime courts (Art. 153). It also incorporates preventive measures such as the classification of navigation zones, the mandatory use of autopilots, surveillance cameras, and recording systems. It regulates the mandatory use of pilotage and pilot services, specifying when they must be used and the duties of those responsible.

Regarding shipwrecks and navigation risks, the obligations of owners, operators, and the State concerning the marking and removal of debris are described in detail, as well as financial liabilities and the requirement for environmental studies. The legal text devotes a specific section to marine pollution, with tight restrictions on discharges, a civil liability regime based on international treaties, and mandatory insurance requirements for large vessels.

Penalties are provided for various violations, covering both safety and environmental protection.

### **Ecuador**

The Organic Law on Navigation, Safety Management, and Maritime and Riverine Protection in Water Areas (2021) constitutes Ecuador's legal framework for maritime and riverine activities. Its objective is to regulate and guarantee sovereignty, the safety of human life at sea, navigation, maritime protection, and the prevention of illegal acts and pollution. The law defines principles such as the preservation of human life at sea, conservation, prevention, precaution, and sustainable development.

The law establishes the National Maritime Organization System, defines the structure of the National Maritime Authority (Ecuadorian Navy), and details the responsibilities of agencies such as the National Directorate of Aquatic Spaces (DIRNEA) and port authorities. It regulates registration, certification, and the issuance of licenses, including provisional navigation documents. It also establishes procedures for investigating maritime accidents, determining causes and liabilities, imposing sanctions, and defining the role of port authorities or port captains' boards (Art. 23).

The penalty regime establishes classifications for administrative violations (first, second, and third class, in addition to oil spills), specifying fines as well as the possibility of temporary or permanent suspension of licenses. Provisions exist regarding repeat offenses and the requirement for financial guarantees to cover damage repairs. A distinctive feature of Ecuadorian legislation is the specific regulation of river navigation in the Amazon region, including speed limits, communication requirements, and vessel registration in those areas.

### **Peru**

Legislative Decree No. 1147 regulates the strengthening of the Armed Forces within the purview of the National Maritime Authority - General Directorate of Port Authorities and Coast Guard (2012), establishes the Peruvian legal framework for activities in aquatic areas, both maritime and riverine. The General Directorate of Port Authorities and Coast Guard of the Peruvian Navy, in its capacity as the National Maritime Authority, maintains jurisdiction over aquatic areas, activities carried out in the aquatic environment, vessels, naval craft, aquatic facilities, and watercraft in general, with the aim of ensuring the safety of human life at sea, on navigable rivers, and lakes; protecting the aquatic environment; and suppressing illicit activities within its jurisdiction, which must be strengthened to address the current context of threats in the aquatic environment. The aim is to ensure adequate safety and security

conditions for the conduct of activities in the aquatic environment, in accordance with national regulations and international instruments to which Peru is a party.

### **The United States of America**

The Maritime Transportation Security Act of 2002 is extremely detailed, stressing the protection of maritime transportation from security threats. The Act was drafted in response to the 9/11 attacks and establishes measures such as vulnerability assessments, the development of national and regional maritime security plans, and the designation of security coordinators. Among the most extensively addressed topics are:

- Procedures for assessing vulnerabilities in ports and vessels
- Requirements for security plans
- Physical performance standards for cargo containers, including seals and locks
- Transportation security card system
- Security equipment and personnel

In addition, the law establishes the possibility of assessing foreign ports and taking action if they do not meet adequate anti-terrorism standards. Civil penalties are imposed for violations of the law and its regulations.

The regulations focus primarily on protection against terrorism, rather than on general aspects of maritime security or environmental protection. Other sections of Title 46 of the U.S. Code address relevant issues but delegate their implementation to federal authorities such as the Secretaries of Transportation or Defense. U.S. legislation seeks to guide federal, state, and local authorities in developing effective maritime security models, with a special emphasis on port management.

#### **b. Identification of the authorities responsible for oversight or enforcement**

The six regulations examined clearly identify the authorities responsible for overseeing and enforcing legal obligations regarding maritime safety. In all cases, there is a central maritime authority that delegates responsibilities to regional or local bodies and has the power to oversee, impose sanctions, and order preventive or corrective measures.

### **Argentina**

The Navigation Act (Law 20,094/73) designates the Maritime Authority—currently exercised by the Argentine Naval Prefecture (Decree 457/2025)—as the primary entity responsible for overseeing and enforcing safety regulations. Its responsibilities include conducting routine and special inspections, authorizing the entry, stay, and departure of

vessels in ports, and removing obstacles to navigation, such as shipwrecks or debris. In the event of non-compliance, it may declare the vessel abandoned in favor of the State and proceed with its disposal. The captain of each vessel is required to comply with all instructions issued by this authority. Although the law establishes penalties and procedures, it does not provide an exhaustive list of violations or a detailed penalty system as in other countries in the region.

### **Brazil**

The Waterway Traffic Safety Act (LESTA, Law 9,537/1997) grants the Brazilian Navy, as the maritime authority (Art. 39), the power to adopt administrative measures with immediate effect. These include:

- Seizing certificates
- Preventing vessels from leaving port
- Suspending maritime works or activities, including underwater mining
- Seizing or removing vessels from traffic

The Navy may also mediate disputes regarding pilotage and towing services. Although LESTA does not provide a detailed list of violations like other legal frameworks, it clearly establishes the enforcement powers and administrative measures available to the maritime authority.

### **Peru**

Legislative Decree No. 1147 establishes that the General Directorate of Port Authorities and Coast Guard of the Peruvian Navy, in its capacity as the National Maritime Authority, has jurisdiction over waterways, activities carried out in the aquatic environment, vessels, naval craft, aquatic facilities, and watercraft in general, with the aim of ensuring the safety of human life at sea, on navigable rivers, and on navigable lakes; protecting the aquatic environment; and suppressing illegal activities within its jurisdiction, in accordance with national regulations and international instruments to which Peru is a party. The General Directorate of Port Authorities and Coast Guard exercises the National Maritime Authority through the Director General of Port Authorities and Coast Guard at the national level, the District Chiefs of Port Authorities at the regional level, and the Port Captains at the local level.

### **Chile**

The Navigation Act (Decree-Law No. 2,222/1978) confers maritime authority to the General Directorate of Maritime Territory and Merchant Marine (DIRECTEMAR), a body under the Chilean Navy, whose responsibilities are carried out through maritime governors and port

captains (Art. 2(c)). DIRECTEMAR oversees compliance with national standards, international conventions, and regulations pertaining to navigation and the protection of the marine environment. It has jurisdiction over vessel registration, departure authorizations, and traffic restrictions in sensitive areas, and may order the use of services such as towing or pilotage for safety reasons. DIRECTEMAR personnel perform maritime police duties with public authority and may impose penalties for disobedience. In the event of accidents, it conducts preliminary investigations to determine causes and assign liability. It may also order the removal of shipwreck debris and penalize non-compliance with fines or a declaration of abandonment. In cases of pollution, it imposes administrative sanctions based on the joint and several liabilities of the captain, shipowner, and port operator, requiring financial guarantees to cover damages.

### **Colombia**

The Draft Maritime Code reaffirms the General Maritime Directorate (DIMAR) as the National Maritime Authority, with broad powers and jurisdiction over all of the country's maritime areas, including Colombian vessels at high seas (pursuant to Decree 5057/2009). DIMAR issues the Colombian Maritime Regulations (REMAC), a binding technical standard, and has the authority to inspect, detain, divert, or stop vessels, as well as to impose operational restrictions in the event of risk. Port authorities, as delegated bodies, authorize the entry and departure of vessels and may suspend operations for safety or environmental reasons. They may also declare vessels that have not been removed as abandoned. DIMAR has jurisdictional powers to resolve civil and contractual disputes related to maritime accidents, acting as a court of second instance. The proposed penalty regime is detailed, with fines based on the type of violation and the vessel's characteristics. Recidivism may lead to the suspension or revocation of licenses. Violations may be documented directly by inspectors or members of the Coast Guard, and fines are enforced through coercive measures.

### **Ecuador**

The Organic Law on Navigation, Management, Safety, and Protection of Maritime and Inland Waterways designates the Ecuadorian Navy as the national maritime authority, operating through the National Directorate of Aquatic Spaces (DIRNEA) and its subordinate bodies: regional directorates and port authorities. DIRNEA defines and implements the country's maritime policy, performing maritime police and inspection duties, as well as boarding and apprehending domestic and foreign vessels. The port authorities manage

vessel registration, authorize flag changes, declare ships as abandoned, and oversee compliance with regulations. They are empowered to restrict the entry of vessels in situations posing environmental risks, impose administrative sanctions, and even suspend port operations. Minor infractions are judged by the captaincies; serious accidents or those involving loss of life fall under the jurisdiction of a jury of captains. Repeated offenses result in harsher penalties and may lead to the suspension of licenses. In cases of pollution, joint and several liability is established for the captain, owner, shipowner, agent, and operator, who must cover remediation costs.

### **The United States of America**

The Maritime Transportation Security Act of 2002 assigns responsibilities to federal officials designated by the Secretary of Homeland Security, who are required to implement maritime security measures, assess vulnerabilities, and require security plans (§70103(b)). Although the law does not expressly designate a “national maritime authority,” the U.S. Coast Guard de facto assumes that role. The Coast Guard establishes criteria for vessel inspections, coordinates responses to threats, enforces physical security standards, and controls access to port facilities. Title 46 of the U.S. Code supplements this law, delegating regulatory responsibilities to the Departments of Transportation and Defense. This body of law regulates everything from vessel certification to accident investigation, maritime trade oversight, and environmental penalties. Particular attention is given to tankers and sustainable practices such as ballast management and discharge.

## **2.3 Current Legal Challenges**

A comparative analysis of national regulatory frameworks in maritime affairs reveals common trends that demonstrate a regional commitment to strengthening maritime security through legislation. Among the key commonalities are:

- The gradual incorporation of multilateral treaties—particularly the United Nations Convention on the Law of the Sea (UNCLOS) and the ISPS Code—as the regulatory basis for national legislation.
- The enactment of specific laws addressing maritime crimes, coastal surveillance, environmental protection, and control within exclusive economic zones (EEZs).
- The consolidation of integrated maritime authorities—such as port authorities, coast guards, and naval commands—with administrative, operational, and judicial powers.

However, this same analysis highlights structural limitations and legal asymmetries that directly affect the effectiveness of interstate cooperation. Some of the persistent gaps include:

- Disparities in the capacity for enforcement, prosecution, and imposition of sanctions, particularly regarding crimes committed on high seas or in areas of ambiguous jurisdiction.
- Absence or weakness of regulatory frameworks in response to emerging threats such as illegal, unreported, and unregulated (IUU) fishing, the use of semi-submersible vessels, or maritime cybercrime.
- Limited regulatory coordination in maritime border zones, where the lack of binational protocols or joint operational agreements hinders an effective response to incidents.

Based on these findings, contemporary legal challenges that limit the development of a coherent hemispheric legal architecture can be identified. Among the most relevant are:

- a) Jurisdictional ambiguity in complex maritime zones: The absence of precise boundaries or overlapping jurisdictions in contiguous areas, shared routes, or disputed spaces hinders coordinated action and creates legal uncertainty regarding surveillance, interdiction, or the enforcement of sanctions.
- b) Insufficient criminalization of new threats: Not all states have adequately criminalized conduct such as IUU fishing, migrant smuggling by sea, the use of unmanned vessels, or cyberattacks on port infrastructure, which limits intervention and prosecution capabilities.
- c) Regulatory lag in the face of technological advancement: The development of emerging technologies—such as autonomous vehicles, artificial intelligence applied to maritime traffic, encryption systems, and surveillance drones—often outpaces current regulatory capacity, creating legal loopholes that criminal organizations can exploit.
- d) Disconnection between criminal and maritime law: In several countries, the criminal law framework does not specifically address the particularities of the maritime environment, resulting in procedural gaps, evidentiary difficulties, and limitations on the effective prosecution of crimes committed at sea
- e) Poor implementation of International Treaties: Despite the signing of relevant agreements, many States have not developed the required internal implementation

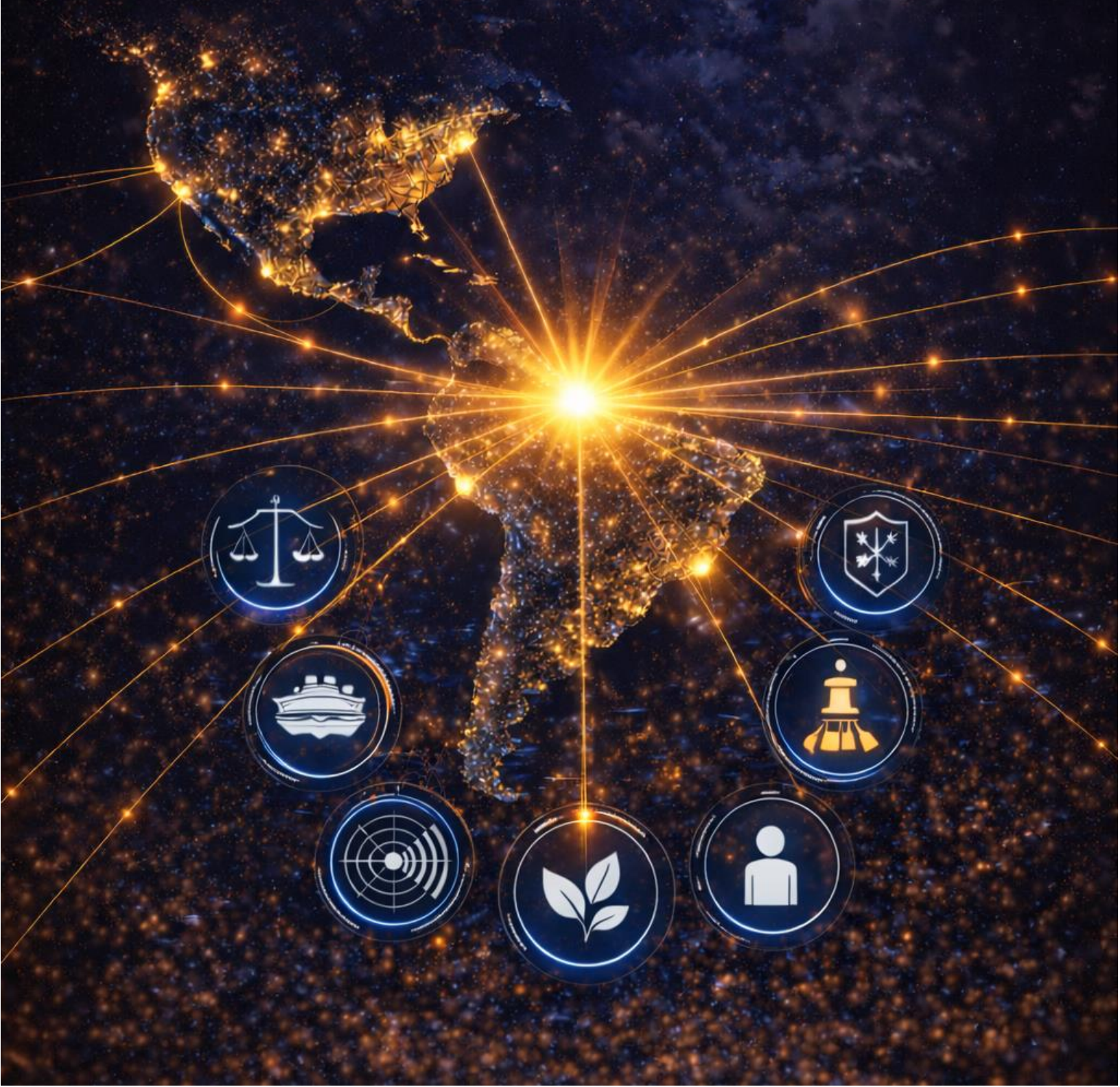
rules or compliance mechanisms, thus reducing their operational applicability and their real impact on the ground.

In conclusion, it can be stated that these regulatory weaknesses reflect not only legislative disparities but also institutional, budgetary, and technical constraints that affect the region's legal coherence in the area of maritime security. Furthermore, the legal framework serves as a fundamental enabler for the effective implementation of best practices in maritime security. Its robustness, clarity, and up-to-date nature are indispensable for ensuring legality, interoperability, and international cooperation.

For this reason, this guide relies on this regulatory framework as its structural backbone, proposing practices aligned with international law, multilateral commitments, and the institutional realities of the states in the hemisphere. Regional maritime security is promoted through this integrated legal approach, which combines respect for national sovereignty with the need to build solidarity-based, sustainable, and effective solutions to shared threats.

# CHAPTER III

## A SAFE SEA: STRATEGIC PILLARS OF HEMISPHERIC MARITIME SECURITY



### **3.1 Joint Definition of Maritime Security**

From the outset of the research, it was identified that one of the main challenges to reaching a shared understanding of maritime security was the multiplicity of approaches and the lack of uniformity in the terminology used by the various stakeholders involved. This reflects the diverse geopolitical, economic, and social realities of the countries in the hemisphere, as well as the evolution of their regulatory frameworks regarding security and defense. For example, while some countries in the Americas prioritize the protection of their trade routes and ports, others focus more on combating drug trafficking and transnational organized crime in their territorial waters.

Therefore, the first task for this research project was to establish a consensus-based definition of Maritime Security tailored to the project, taking into account the specific characteristics of the Americas, while also making an effort to develop a glossary of common terms that would facilitate the understanding and unification of key concepts among the various stakeholders, providing a solid conceptual foundation for the development of the rest of the project.

This process was essential for aligning the different perspectives and approaches of the participating countries, given the geopolitical diversity and varying national contexts of the region. Achieving a simplified and standardized understanding in international collaborative projects, especially in a multidimensional field such as maritime security, where stakeholders with diverse regulatory frameworks, priorities, and challenges are involved. Achieving this specific objective not only facilitates the effective implementation of joint policies but also promotes sustainable and operational integration among the countries of the Hemisphere.

Once the glossary was finalized, the project moved on to one of the most critical debates: the development of a consensus-based definition of the concept of Maritime Security. This process faced the challenge of integrating the multiple dimensions inherent to Maritime Security, especially in a context as complex and dynamic as the Western Hemisphere. The geopolitical diversity of the region, where states face different threats and adopt diverse approaches regarding the role of the state in protecting their maritime spaces, made it difficult to formulate a single definition capable of adequately addressing the concerns and priorities of all the countries involved.

The debate brought together security and defense specialists, maritime policy experts, and representatives of international organizations, who offered diverse perspectives ranging from protection against traditional threats, such as interstate conflicts, to emerging threats, such as transnational organized crime (drug trafficking, piracy, human trafficking), illegal fishing, and environmental degradation of the seas.

This interdisciplinary approach made it possible to identify a series of key elements that should be incorporated into a broad, practical, and operational definition of Maritime Security:

a) Protection of critical infrastructure

Maritime Security depends largely on the protection of strategic infrastructure such as ports, shipping routes, and international waterways, including the Panama Canal. These infrastructures are fundamental to international trade and the economic stability of countries in the hemisphere. According to the International Maritime Organization (IMO, 2020), any disruption or attack on these facilities can trigger a chain reaction that negatively impacts global trade and local economies.

b) Surveillance and response to illicit activities in territorial and international waters

The growing presence of illicit activities at sea, such as drug trafficking, illegal, unreported, and unregulated (IUU) fishing, piracy, and human trafficking, poses a direct threat to the security of coastal states and their trading partners. The United Nations Convention on the Law of the Sea (UNCLOS, 1982) emphasizes the responsibility of states to monitor and control these activities within their exclusive economic zones. In this context, maritime surveillance and intergovernmental cooperation are essential to deter, detect, and respond to these threats.

c) Preservation of the Marine Environment

Environmental degradation of the seas, caused by pollution, overexploitation of marine resources, and the impact of natural disasters, is a growing concern that affects not only biodiversity but also coastal economies that depend on sectors such as fisheries, tourism, and marine energy. The MARPOL Convention and other international instruments underscore the need to adopt environmental protection policies to mitigate the negative effects of human activity on the environment.

#### d) Multinational and Interagency Cooperation

One of the main conclusions of the debate was that maritime security cannot be achieved unilaterally. The transnational nature of the threats requires constant cooperation among states and the active participation of various agencies, both military and civilian, including naval forces, coast guards, ministries of defense, customs, and environmental agencies. Institutions such as the Inter-American Defense Board have highlighted the importance of establishing regional cooperation frameworks to share information, coordinate joint operations, and adopt common approaches to maritime challenges.

#### e) Safety, Security, and Defense of the Maritime Environment

To enrich the debate on the concept of Maritime Security, it is necessary to examine the terms “maritime safety,” “maritime security,” and “maritime defense,” which, although related, have clear differences in terms of their scope, objectives, and operational approaches.

This analysis is conducted from an interdisciplinary perspective that combines aspects of the law of the sea, international security, and the role of the Armed Forces and civilian agencies in the protection of maritime spaces. Likewise, it is important to note that in English there is a significant conceptual distinction between “Maritime Safety” (safety in navigation and protection against accidents) and “Maritime Security” (protection against intentional threats), which does not always have an exact translation in Spanish. This point is particularly relevant, as it can lead to ambiguities in regulatory and operational frameworks within the hemisphere.

#### **Maritime Security: A multidimensional concept**

Maritime Security is defined as the set of measures designed to protect the maritime environment and legitimate activities on the oceans against conventional and non-conventional threats. This concept has evolved over time, shifting from a primarily military concern to a comprehensive approach that encompasses economic, environmental, and human security aspects.

The International Maritime Organization has played a key role in this evolution, establishing regulatory frameworks such as the International Ship and Port Facility Security Code (ISPS Code) and promoting international cooperation.

Maritime Security encompasses the prevention of threats such as piracy, drug trafficking, arms smuggling, illegal fishing, and maritime terrorism. For example, international efforts to reduce pirate attacks in the Horn of Africa, through coordinated operations such as the European Union's Operation Atalanta, represent a successful model of preventive maritime security (Bueger, 2015). Another notable aspect of maritime security is its relationship with international law, particularly with the United Nations Convention on the Law of the Sea. Under this convention, states are responsible for ensuring security in their territorial waters and exclusive economic zones, which entails both the prevention of illicit activities and the protection of the environment (CONVEMAR, 1982).

### **Maritime Protection: A specific approach after 9/11**

Maritime protection takes a more specific approach and focuses on preventing intentional threats—such as terrorism, sabotage, and organized crime—that can affect both vessels and critical port and maritime infrastructure. This concept gained greater international prominence following the attacks of September 11, 2001, which highlighted the need to strengthen the security of ports and maritime routes against terrorist threats.

In response, the IMO adopted the ISPS Code in 2002, a mandatory regulatory framework requiring the implementation of specific security measures in international ports and on ships (IMO, 2003). The ISPS Code establishes measures such as access controls, surveillance systems, and emergency plans to protect maritime infrastructure against acts of terrorism and sabotage. For example, strategic ports such as Los Angeles in the United States or Santos in Brazil have implemented advanced monitoring and control systems to comply with international standards (González, 2018).

Unlike maritime security, which has a broader scope, maritime protection focuses primarily on the physical and operational security of critical facilities, which is an essential pillar for global trade and the economic stability of nations.

### **Defense of the Maritime Environment: The strategic role of the Armed Forces**

Maritime defense refers to a state's military capabilities to protect its sovereignty, maritime territory, and natural resources against external aggression or armed conflict. This concept has a primarily military focus and involves the deployment of naval forces and coast guards to ensure territorial integrity and the security of the state within its maritime areas.

In the Americas, national navies play a fundamental role in maritime defense, carrying out permanent patrols, deterrence, and rapid response to threats. For example, the Mexican Navy and the U.S. Coast Guard have cooperated in joint operations to combat drug trafficking in the Caribbean and the Gulf of Mexico, highlighting the importance of multinational cooperation in the defense of maritime areas (Hernández, 2019).

Defense in the maritime domain involves not only protection against direct military aggression but also the surveillance of strategic maritime areas, such as the Strait of Magellan and the Panama Canal, control of which is vital for the security of international trade and the projection of power in the region.

Although these concepts have clear differences, they are deeply intertwined. Maritime security requires adequate maritime protection to prevent specific incidents, while maritime defense may be necessary in extreme situations of conflict or external threats. Comprehensive management of maritime spaces calls for a coordinated combination of these three elements to effectively address risks and threats, ensuring regional stability and security.

In this sense, each term has its specific place within ocean management and regulation, but their integration is essential to addressing contemporary maritime challenges. After several rounds of discussions and analysis, two preliminary consensus definitions of Maritime Security were reached. These definitions not only reflect the complexity and multidimensional nature of the concept but are also tailored to the particularities of the Americas, where transnational threats and geopolitical diversity require specific approaches.

Concept	Main Goal	Scope	Main Stakeholders
Maritime Security	Protecting the legitimate and safe use of the oceans against multidimensional threats (piracy, illicit trafficking, environmental risks)	Civilian, environmental and multinational	International organizations (IMO, OAS), governments, Coast Guards, NGOs, the private sector
Maritime Protection	Prevent intentional criminal acts against vessels, ports, and critical infrastructure (terrorism, sabotage, organized crime)	Civilian, port, and physical security	Port authorities, shipping companies, security agencies, and national and local agencies
Defense in the Maritime Environment	Safeguard national sovereignty, territorial integrity, and the security of the maritime domain against external aggression or armed conflict	Military and strategic	Naval forces, national Navies, Coast Guards, Ministries of Defense

Table 1. Operational and conceptual distinctions between Maritime Security, Maritime Protection, and Defense in the maritime environment.

**First mutually agreed-upon definition of Maritime Security:**

Maritime Security is defined as the ability of states to protect and safeguard their maritime spaces—including their trade routes, ports, marine resources, and ecosystems—against both conventional and asymmetric threats. This is achieved through multinational cooperation, interagency action, and the implementation of coordinated maritime defense and governance policies, for the benefit of regional stability and economic development.

**Second mutually agreed-upon definition of Maritime Security:**

Maritime security is defined as the set of coordinated policies, strategies, actions, and measures aimed at protecting maritime areas, people, vessels, port facilities, and assets associated with maritime activities against threats and risks of various kinds.

This definition includes, but is not limited to:

- a) Natural threats: Extreme weather conditions, natural disasters, and environmental risks that affect the safety of maritime activities. Examples of this include hurricanes in the Caribbean and tsunamis in the Pacific.
- b) Human threats: Criminal activities such as piracy, maritime terrorism, illicit drug trafficking, illegal, unreported, and unregulated (IUU) fishing, smuggling, and any action that compromises the stability of maritime operations and regional security. For example, piracy in the Gulf of Guinea and drug trafficking in the Caribbean.
- c) Critical infrastructure protection: The safeguarding of strategic ports, shipping channels, interoceanic corridors, and other facilities essential to international trade and the regional economy. The Panama Canal and the ports of Santos and Veracruz are examples of infrastructure whose protection is vital.
- d) Compliance with international standards: The adoption of standards and regulations established by organizations such as the International Maritime Organization and the United Nations Convention on the Law of the Sea, which ensure the safety of life at sea, safe navigation, and the protection of the marine environment. The ISPS Code, for example, regulates the physical security of ships and ports.

### **Consensus based on a comprehensive and multidimensional approach**

Maritime security, as outlined above, is grounded on a comprehensive and multidimensional academic perspective that encompasses:

- International cooperation: Collaboration among states to share information and coordinate joint operations, which is essential in the face of transnational threats.
- Development of technical and technological capabilities: Implementation of advanced monitoring, surveillance, and rapid response systems, such as the use of drones, satellites, and automatic ship identification systems.
- Implementation of public policies: Focused on risk prevention and mitigation, promoting the resilience of states and the sustainability of the maritime environment.

The logic of comprehensiveness and multidimensionality has the ultimate goal of ensuring that the term enables all actors in the maritime sphere to ensure the functionality, sustainability, and protection of maritime spaces as essential components of economic, social, and environmental development, both at the hemispheric and global levels.

This definition reflects how Maritime Security encompasses multiple dimensions:

- National defense: Through the ongoing role of the Armed Forces, such as navies and coast guards, which are responsible for patrolling, deterring, and responding to military and criminal threats. The Colombian Navy, for example, has played a key role in combating drug trafficking in the Caribbean, while the U.S. Coast Guard is constantly engaged in maritime interdiction operations.

- Regional cooperation: Given that many maritime threats are transnational in nature, cooperation among the states of the hemisphere is essential. Initiatives such as the OAS Regional Cooperation System for Maritime Surveillance and Security are clear examples of collective efforts.

- Environmental preservation: Protecting the marine environment is crucial not only for biodiversity but also for local economies dependent on fishing and tourism. Illegal fishing and pollution pose significant threats that must be addressed through sustainability policies and compliance with international standards such as MARPOL.

The consensus reached made it possible to develop a definition that reflects the complexity and multidimensional nature of the concept of maritime security:

“Maritime Security is the set of policies, actions, and measures aimed at protecting maritime spaces and their resources against conventional and non-conventional threats, ensuring the protection of critical infrastructure, the monitoring of illicit activities, the preservation of the marine environment, and multinational cooperation for sustainable development and regional stability.”

This definition not only provides a common conceptual framework but also lays the groundwork for the development of coordinated policies and operational strategies. By incorporating the priorities and perspectives of all stakeholders, it ensures its applicability in various national and regional contexts, thereby promoting maritime governance and comprehensive security in the hemisphere.

The consensus-building process was not merely a theoretical exercise, but a practical effort aimed at building an operational understanding that enables countries in the hemisphere to work together. This achievement is essential for effectively addressing threats such as drug trafficking, illegal fishing, and environmental degradation, as well as for

strengthening the resilience of coastal economies and the security of international trade flows. In this way, the consensus-based concept of Maritime Security is not merely an academic tool but a strategic pillar for coordinated regional action.

The achievement of this specific objective represented a significant step forward for the project, as it provided a solid, consensus-based conceptual foundation that facilitated the development of future activities. The creation of the glossary of common terms and the consensus-based definition of Maritime Security not only improved communication and understanding among stakeholders but also established a shared vision regarding the challenges and opportunities in the field of Maritime Security in the hemisphere. This process highlighted the value of effective cooperation among countries and disciplines, achieved through a research cluster-based strategy, which proved suitable for addressing complex and multidimensional problems.

The agreed-upon definition of Maritime Security provides a useful framework for both public policy formulation and operational cooperation among States. By integrating aspects of national defense, environmental protection, and regional governance, this framework promotes stronger and more coordinated maritime governance. Thus, it contributes to the stability, security, and sustainable development of the hemisphere, laying the groundwork for future collaborative initiatives and resilience in the face of transnational threats.

Finally, it is important to highlight that the concepts mentioned above do not conflict with or supersede those established by each Navy or Coast Guard. As an academic document, this Best Practices Guide is part of a collaborative effort to address common hemispheric challenges and does not seek to standardize concepts that may differ depending on the specifics of each country, such as the concept of “Maritime Security.”

### **3.2 Main Aspects Regarding Hemispheric Maritime Security**

This chapter outlines the results obtained from the strategic and operational analysis conducted within the framework of this guide, with the aim of identifying and interpreting the key aspects that constitute the scope of the consensus-based definition of maritime security for the Americas.

The analysis begins with the recognition of maritime spaces as complex, interdependent, and transnational environments where traditional and emerging threats converge, as well as strategic opportunities for development, environmental protection, and international

cooperation. Consequently, the approach adopted focused on the identification, assessment, and management of risks, threats, and factors contributing to instability linked to the various uses of the sea in the region.

This framework allows for an analysis of the maritime environment in light of 21st-century challenges, considering its direct impact on regional stability and its potential to foster sustainable and inclusive development. Key aspects of maritime security are defined, in this context, as those strategic elements that enable states and the international community to effectively prevent, mitigate, and respond to the obstacles that threaten regional maritime governance.

These aspects include both traditional threats, such as piracy, smuggling, and the protection of critical infrastructure, as well as emerging threats, such as cyberattacks on port systems, IUU fishing, and the effects of climate change on coastal security and livability. Identifying and addressing these issues appropriately is essential for political stability, environmental protection, institutional resilience, and the strengthening of international cooperation. From this perspective, maritime security issues are not viewed as isolated elements, but rather as interdependent components that require a coordinated, inter-agency, and multinational response, based on integrated public policies, international standards, and regional cooperation mechanisms.

Recognizing the geographic, economic, and regulatory diversity of the states in the hemisphere, this chapter organizes the main aspects of hemispheric maritime security into seven strategic pillars, which have served as cross-cutting categories of analysis for the identification, classification, and documentation of the best practices compiled in this guide. Each of these pillars represents a critical area of action, and addressing them in a coordinated and integrated manner allows for progress toward a multidimensional, sustainable, and solidarity-based maritime security model, aligned with the values and priorities of the inter-American community.

### **3.2.1 Strategic Pillar I: Ocean Governance and Regulation**

This strategic pillar focuses on strengthening the legal and institutional framework that underpins the management of maritime space in the countries of the hemisphere. Contemporary ocean governance requires a comprehensive, cross-cutting, and multilevel

approach capable of harmonizing the strategic, economic, ecological, and social interests associated with the sustainable use of the ocean.

Effective maritime governance rests on the following fundamental pillars:

- Legal alignment with international law of the sea: The consistent implementation of instruments such as the United Nations Convention on the Law of the Sea is essential to ensure a shared legal framework regulating sovereignty, jurisdiction, conservation, and the rational use of marine resources (Radovich, 2018).
- Robust maritime institutions: It is necessary to consolidate public entities with clearly defined responsibilities, equipped with sufficient human and financial resources, and capable of inter-agency coordination (Vivero & Mateos, 2010).
- Marine spatial planning: The adoption of instruments such as maritime and marine spatial planning enables managing conflicting uses, protecting ecosystems, and promoting a sustainable blue economy (Rivera-Páez, 2018; Murillo-Zamora, 2021).
- Active participation in regional and global governance: Collaboration within multilateral organizations such as the IMO, UNESCO-IOC, and the International Seabed Authority strengthens the ability to influence regulatory and strategic processes that directly affect national maritime interests (Sánchez-Terán, 2025).

The consolidation of this strategic pillar signifies a decisive step toward strengthening ocean governance in the hemisphere. The promotion of regulatory frameworks that are clear and consistent with international maritime law reinforces legal certainty and fosters an environment of cooperation and trust among coastal states. This shared vision enables addressing common challenges with effective tools and coordinated approaches. Likewise, by fostering marine spatial planning processes based on technical evidence and strengthening national institutional capacities, it enables decision-making that is more informed, inclusive, and sustainable.

Taken as a whole, this pillar helps to cement a governance architecture that not only organizes and protects maritime spaces but also reaffirms the commitment of the countries of the hemisphere to the peace, prosperity, and sustainability of our oceans.

### **3.2.2 Strategic Pillar II: Defense in the Face of Illicit Threats**

The countries of the Americas face growing threats from transnational criminal organizations that use the sea as a venue for illicit activities, such as:

- Illicit trafficking of drugs, weapons, and people.
- Smuggling of goods and the use of unregistered vessels.
- Use of underwater technologies to evade controls (such as semi-submersibles).

The best practices documented in this section highlight coordinated maritime interdiction efforts, the creation of intelligence fusion centers, and the establishment of bilateral and multilateral operational agreements for joint patrols, aerial surveillance, and extraterritorial pursuit.

### **Illicit Drug Trafficking**

The use of maritime routes has emerged as one of the primary threats to hemispheric security. Various modes of transport—containers, speedboats, and semi-submersibles—are used by criminal networks to transport narcotics from producing countries to consumer markets in North America, Europe, and Africa.

This phenomenon affects coastal and island states, with implications for national security, institutional stability, and port logistics integrity. In response, various countries in the hemisphere have developed sustained and coordinated responses, which serve as a reference for the formulation of shared best practices.

### **Context and Analysis**

Maritime drug trafficking has increased significantly since the early 2000s, particularly in the Caribbean, the Eastern Pacific, and the South Atlantic. Key factors include:

- Porosity of maritime routes with limited surveillance.
- Limited enforcement capacity on high seas.
- Use of ports as consolidation and transit points.
- Technological sophistication of criminal networks.

This persistent risk environment compels States to design integrated strategies to deter, intercept, and prevent the illicit use of their maritime spaces.

#### **Objectives of the case analysis**

- Identify best practices in the fight against maritime drug trafficking.
- Document successful experiences of bilateral and multilateral cooperation.

- Analyze opportunities for strengthening national and regional capacity building.
- Provide a technical-political reference framework for decision-making.

### **Documented Success Stories**

**Peru:** The Interdiction of a Semi-Submersible Vessel on High Seas: Strengthening Peru's Oceanic Control Capabilities (2019).

Among the most relevant operational experiences in the field of maritime interdiction in the southeastern Pacific, the action carried out by the Peruvian Navy through the General Directorate of Port Authorities and Coast Guard, on December 7, 2019, in its capacity as the National Maritime Authority. This operation marked an institutional milestone as the first successful interception of a semi-submersible vessel used for drug trafficking in ocean waters far from the national coast.

The operation took place approximately 178 nautical miles from the coast, in front of Talara, highlighting the expansion of criminal activity into high-seas areas traditionally considered difficult to monitor. The intercepted vessel had set sail from Machala (Ecuador) and, according to its estimated course, intended to sail south of the Galápagos Islands with Mexico as its final destination, using ocean routes with low maritime traffic density to evade surveillance systems.

The vessel used was a semi-submersible platform of artisanal construction, built of fiberglass and wood, with a low profile and reduced radar signature, designed specifically for the clandestine transport of large volumes of narcotics. These technical characteristics, combined with a long range provided by fuel tanks holding up to 4,000 gallons and speeds of 12 to 15 knots when fully loaded, allowed it to operate for extended periods at open sea, reducing the likelihood of detection by conventional means.

Four foreign crew members were arrested during the intervention, and a total of 1,117 kilograms of cocaine hydrochloride were seized. The transport capacity of the vessel was estimated at four tons of illicit cargo. The operational result not only represented a significant blow to the transnational drug trafficking networks but also confirmed the growing technological and logistics sophistication of these criminal organizations.

From a strategic perspective, the case highlighted three central aspects for Hemispheric Maritime Security. First, the migration of drug trafficking toward low-detectability platforms and remote oceanic routes, which increases the complexity of state control. Second, the need to integrate maritime intelligence, air-sea surveillance, and long-range patrols as essential conditions for early detection. Finally, the importance of having ocean-going units with high autonomy and endurance at sea, capable of maintaining a sustained presence beyond the immediate coastline.

In this regard, the operation constitutes a national best practice in maritime interdiction, demonstrating the effectiveness of coordinated action by the Peruvian Maritime Authority in exercising sovereignty, protecting the maritime domain, and actively contributing to the regional fight against transnational organized crime. Likewise, it offers relevant lessons for other states in the hemisphere regarding the need to strengthen offshore surveillance capabilities, interoperability, and international cooperation in the face of emerging threats in the ocean environment.

**Colombia:** Consolidated strong maritime interdiction capabilities, reinforced through strategic partnerships with the United States and Panama, as well as through the intensive deployment of naval intelligence and coastal surveillance. Since 2018, this strategy has been structured under the Orion Naval Strategy, a multinational campaign that:

- Has achieved significant seizures: version 13 alone in 2024 resulted in more than 400 tons of drugs seized thanks to intelligence sharing and multilateral coordination.
- Has involved more than 60 countries and 125 organizations in joint operations, strengthening interoperability and hemispheric response capacity.

**Mexico:** Implemented a joint intervention model between the Navy and the National Maritime Authority, focused on the container program and the modernization of non-intrusive technologies for detecting maritime smuggling. This strategy has been complemented by the signing of key interinstitutional agreements, including NAMSII (North American Maritime Security Initiative), a trilateral framework with the United States and Canada that strengthens interoperability in regional maritime operations, and the Bicentennial Agreement with the United States (which replaced the Mérida Initiative), aimed at more comprehensive cooperation in security and the fight against maritime drug trafficking.

**Costa Rica and Panama:** Implemented binational strategies with international support, integrating aerial, riverine, and maritime surveillance.

**CARICOM and the Andean Community:** Promoted frameworks for intelligence sharing and regional regulatory harmonization.

### **Most relevant results and achievements**

- Steady increase in seizures along the main hemispheric maritime routes.
- More combined patrols and multinational exercises.
- Cooperation strengthening among the Navy, Coast Guard, Customs and Intelligence Agencies.
- International recognition of the models applied by Colombia, Peru and the Dominican Republic.
- Enhancement of inspection protocols and port control.
- Improvement of international cooperation based on national or institutional bilateralism.

### **Lessons learned**

- Permanent international cooperation is crucial in the face of transnational threats: the Orion Operation showed that a coordinated action among countries multiplies operational impact.
- Investment in technologies (AIS, VMS, drones) improves early detection: coastal, maritime and air intensive surveillance systems have significantly increased the capacity to identify suspicious vessels.
- The creation of merged interagency intelligence centers allows predicting criminal moves: data exchanges between customs, the Navy and intelligence agencies have been key to intercepting emerging routes.
- Specialized training increases efficiency in the detection of irregular operations. Continuous training in operational techniques and the use of new technologies enhances the success rates of maritime operations.

### **Contribution to the Best Practices Guide**

These cases provide a well-tested operational model to confront maritime drug trafficking, grounded in supporting state capacities and international alliances. It also taught

that it is possible to manage risk without compromising trade, and that a coordinated regional response is viable even in a context of limited resources, provided there is political will and international cooperation.

### **3.2.3 Strategic Pillar III: Maritime Economic Development**

The growth of maritime economies in the hemisphere presents both opportunities and vulnerabilities. This pillar is aimed at ensuring that strategic activities—such as maritime transport, legal fishing, coastal tourism, and resource exploration—are carried out in a safe, transparent, and resilient environment, free from illicit interference or predatory practices.

The consolidation of sustainable maritime economic development requires conditions that ensure legality, traceability of activities, and the protection of trade routes. In this regard, the best practices documented under this pillar highlight institutional and regulatory mechanisms that have enabled inclusive growth, consistent with the objectives of security, environmental protection, and regional stability.

Among the identified initiatives are the following:

- The strengthening of sector-specific regulatory frameworks that incorporate international safety, sustainability, and control standards in activities such as fishing, commercial navigation, and offshore energy exploitation.
- The promotion of public-private partnerships, particularly in the port sector, with a focus on joint investments to improve infrastructure, access controls, and coastal surveillance systems.
- The implementation of international certification programs aimed at ensuring cargo security, the traceability of maritime trade, and compliance with environmental and labor standards.
- The promotion of blue economy projects that balance wealth generation with the conservation of marine ecosystems, encouraging the responsible use of ocean resources.

This pillar reflects the commitment of the states of this hemisphere in linking economic prosperity with maritime governance, thus reaffirming the fact that the sustainable development of oceans requires both promotion policies and security and regulatory sound frameworks.

### **3.2.4 Strategic Pillar IV: Navigation technical protection**

Safe navigation constitutes an essential element for the operation of international trade, the protection of the marine environment, and the prevention of incidents that could endanger human life at sea. Within this framework, Strategic Pillar IV addresses the technical, regulatory, and operational aspects that states in the hemisphere have strengthened to ensure the safety of navigation in jurisdictional waters and international routes.

The International Maritime Guidelines are the main references for this pillar, particularly regarding Automatic Identification Systems (AIS) and Vessel Traffic Services (VTS). These tools have become global standards for improving situational awareness, facilitating coordination between vessels and coastal authorities, and preventing collisions or groundings.

The best practices documented in this guide reflect a growing adoption of these technologies and technical approaches, including:

- The implementation of AIS systems, in accordance with the provisions of Chapter V of the SOLAS Convention, which requires vessels of a certain size to continuously transmit their position, course, and speed to coastal authorities and other ships.
- The installation of VTS systems in ports and high-traffic maritime areas, in line with the guidelines of the IMO Vessel Traffic Services Manual (IMO, 2013), which contribute to safer, more efficient, and better-monitored navigation.
- The modernization of nautical charts and maritime signaling systems, improving navigational accuracy, especially in critical routes and restricted channels.
- The development of coordinated emergency response procedures such as accidents, groundings, or adverse weather conditions, involving port authorities, coast guards, maritime pilots, and maritime control centers.

Strengthening this pillar has proven key to reducing operational risks, improving crew safety, and protecting coastal ecosystems from potential accidental impacts. Likewise, by aligning with the IMO technical and legal guidelines, states in the hemisphere have been able to raise their standards of international compliance and facilitate interoperability with global actors.

### **3.2.5 Strategic Pillar V: Environmental and natural resource protection**

The protection of marine and coastal ecosystems constitutes an essential pillar of hemispheric maritime security, in line with United Nations Sustainable Development Goal 14: “Conserve and sustainably use the oceans, seas and marine resources for sustainable development” (United Nations, 2024). This pillar focuses on the prevention of ecological damage, the responsible use of marine natural resources, and the mitigation of emerging threats that compromise the sustainability of the oceanic and coastal environment.

States in the hemisphere have faced increasing pressure on their marine environments, caused by activities such as illegal, unreported, and unregulated (IUU) fishing, marine pollution, ocean acidification, and the effects of climate change. In response to this scenario, the best practices identified under this pillar include:

- Control of IUU fishing, in accordance with the Port State Measures Agreement and other FAO-derived instruments.
- The establishment and effective monitoring of marine protected areas (MPAs), in line with SDG 14.5 targets and the guidelines of the Convention on Biological Diversity.
- Regulation of maritime traffic in ecologically sensitive areas, in coordination with the International Maritime Organization (IMO).
- Response to oil spills and maritime pollution, through technically interoperable protocols among maritime, environmental, and civil defense agencies.

Likewise, this pillar promotes inter-agency cooperation for the use of technologies such as satellite imagery, ocean buoys, remote sensing systems, and autonomous sensors to monitor critical environmental variables, including temperature, salinity, acidity, and marine biodiversity.

The analysis highlighted that achieving SDG 14 requires not only regulatory actions but also sustained investment in ocean science, as indicated by the United Nations (2024), given that on average only 1.1% of national research budgets is allocated to ocean studies.

The practices documented under this pillar reinforced the notion that maritime security cannot be separated from environmental sustainability. The protection of marine ecosystems strengthens the resilience of coastal communities, in addition to the continuity of sea-dependent economic activities, and preserves the shared natural heritage of the hemisphere.

### **3.2.6 Strategic Pillar VI: Ocean research, technology and surveillance**

This strategic pillar promoted capabilities that strengthen anticipation, prevention, and response to maritime natural and human-induced threats throughout the hemisphere.

Among the highlighted practices are:

- The development of regional oceanographic observatories, integrated with international networks such as the Global Ocean Observing System (GOOS) and supported by organizations such as NOAA and UNESCO.
- The use of emerging technologies, such as unmanned vehicles (aerial and underwater drones), autonomous sensors, artificial intelligence applied to anomaly detection, and automatic identification systems (AIS).
- Integrated maritime surveillance, through command and control centers with multi-scale capabilities and inter-agency coordination.
- The strengthening of scientific capacities through South-South cooperation and training programs in oceanography, climate, and marine sciences.

These initiatives not only improved knowledge of the marine environment but also enabled the anticipation of phenomena such as storms, harmful red tides, ocean acidification, and the movement of illicit fishing fleets. Additionally, they have contributed to the achievement of the 2030 Agenda, particularly Sustainable Development Goals 13 (Climate Action) and 14 (Life Below Water).

Cooperation in ocean science among American states has been a determining factor in reducing asymmetries in technical capacities and in consolidating evidence-based governance. Institutions such as NOAA's National Ocean Service led technology transfer and cutting-edge monitoring methodologies.

### **3.2.7 Strategic Pillar VII: Human and Cultural Safety at Sea**

Maritime safety, understood in its broadest sense, encompasses the protection of people, coastal communities, and their cultural relationship with the sea. This human-centered approach prioritizes the rights, well-being, and dignity of those who live, work, or transit within the ocean spaces of the hemisphere. In this context, this strategic pillar integrates two fundamental components: human security in a broad sense and maritime search and rescue (SAR) operations.

## **Human and cultural protection in the maritime environment**

The best practices documented in this dimension include:

- The protection of labor and human rights of seafarers, in accordance with the ILO Maritime Labor Convention (MLC, 2006).
- The protection of artisanal fishing communities, often vulnerable to threats from organized crime, labor exploitation, or illegal fishing.
- The safeguarding of maritime and cultural heritage, including ancestral routes, traditional seafaring practices, and coastal territories of Indigenous peoples.
- Ocean education programs aimed at fostering an informed, respectful, and committed maritime citizenship focused on the sustainable use of the sea.

## **Search and Rescue (SAR) operations**

In line with the International Convention on Maritime Search and Rescue (IMO, SAR, 1979), states in the hemisphere have assumed responsibility for providing assistance to persons in distress at sea within their SAR regions, which often extend up to 200 nautical miles—and in many cases even beyond, into high seas areas. Key practices identified include:

- The establishment of Maritime Rescue Coordination Centers (MRCCs), such as those operated by the United States, Brazil, Chile, Mexico, and Canada, with infrastructure and trained personnel capable of responding to complex maritime incidents.
- Participation in international SAR cooperation networks, such as Caribbean initiatives (e.g., CARIBE EWS) or subregional mutual assistance mechanisms.
- The use of advanced technologies, such as EPIRB systems, AIS-SART signals, drones, maritime surveillance aircraft, and satellites for emergency detection.
- Joint training and multinational exercises, which have strengthened interoperability among naval forces, coast guards, and civilian authorities.

Despite these advances, challenges persist in areas with more limited operational capacity, where SAR relies on bilateral agreements, combined patrols, or international assistance. Nevertheless, these efforts reflect a clear hemispheric commitment to safeguarding human life at sea, regardless of nationality, legal status, or the location of the incident.

## The Cross-cutting approach of this pillar

This pillar demonstrated that effective maritime security is not limited to strategic or material considerations, but requires a deep understanding of the human and cultural dimension. The integration of human rights policies, community protection, and SAR cooperation has strengthened the social and technical resilience of the maritime environment and has created more just and equitable conditions for those who interact daily with the oceans.

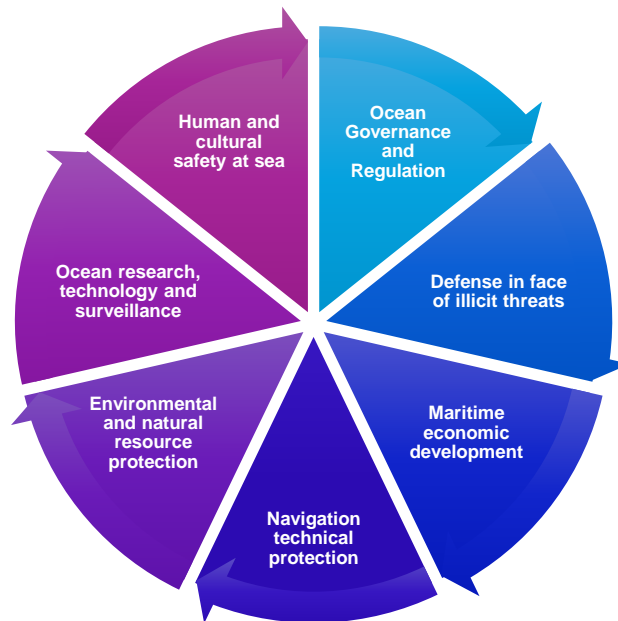


Figure 3. Strategic Pillars of Hemispheric Maritime Security.

## Common threats and risks in the region

Maritime Security in the hemisphere is becoming increasingly complex, as reflected in a broad set of shared threats and risks among the states of the Americas. While each country has its own geographic, institutional, and socioeconomic realities, there is a converging pattern of vulnerabilities that compromise sovereignty, environmental sustainability, human security, and regional stability.

This section identifies and systematizes the most relevant threats emerging from the comparative analysis of national experiences shared by participants in the Working Group of the Best Practices Guide, recognizing their interconnection and multi-scalar impact.

## **Illicit and deliberate threats**

Drug trafficking and transnational organized crime: The use of maritime space as a transit route for the transportation of drugs, chemical precursors, weapons, contraband, and human trafficking is a constant in national reports. Criminal networks exploit jurisdictional weaknesses, porous routes, and fragmented surveillance systems.

Illegal, unreported, and unregulated (IUU) fishing: Identified as one of the most persistent threats with the greatest economic and ecological impact. It affects endangered species, undermines maritime sovereignty, and weakens conservation efforts.

Intrusion of unauthorized vessels: Particularly in sensitive areas such as the Galápagos Islands or high-biodiversity border zones, illegal incursions have been recorded that violate national jurisdiction and pose environmental and security risks.

Piracy and maritime terrorism: Although not widespread, these crimes are considered latent threats. Institutional weakness, corruption, and political instability are factors that could catalyze their occurrence in crisis scenarios.

Cyber threats: Port, navigation, and monitoring systems are increasingly vulnerable to cyberattacks, posing risks to the operational integrity of maritime logistics chains.

Hybrid sabotage: Risks associated with sabotage of critical infrastructure—such as submarine cables, pipelines, platforms, and vessels—have been identified, particularly in contexts of geopolitical tensions or international strategic interests.

## **Accidental or incidental threats**

Natural and climate-related disasters: The region faces high exposure to phenomena such as tsunamis, tropical storms, earthquakes, and sea level rise. These events affect not only port and maritime infrastructure but also coastal communities.

Pollution and environmental degradation: Oil spills, plastic waste, the unregulated use of marine biotechnology, and the overexploitation of natural resources threaten ocean health and food security.

Substandard vessels and crews: The presence of ships with technical deficiencies and unqualified crews increases the risk of accidents and maritime disasters.

Climate change: A cross-cutting risk factor that exacerbates natural phenomena, alters navigation routes, and generates new threats, such as ocean acidification and the migration of invasive species.

### **3.3 Shared Structural Risks**

Regulatory deficits and legal gaps: The lack of legal harmonization among states and the existence of “gray areas” in the application of international maritime law hinder responses to transnational threats.

Limited monitoring and enforcement capacity: Despite technological advances, many countries still lack sufficient means to control their exclusive economic zones (EEZs) and to coordinate search, rescue, and interdiction operations.

Technological dependence and scientific asymmetries: Unequal access to monitoring tools, satellites, drones, and maritime intelligence systems limits the ability of less developed countries to anticipate and respond.

Social and cultural vulnerability in coastal areas: Poverty, informal economies, and limited state presence in coastal territories increase the exposure of local communities to criminal dynamics and environmental disasters.

## CHAPTER IV

# COMMON LIGHTHOUSE: BEST PRACTICES TOWARDS A SAFE NAVIGATION



## **4.1 Hemispheric Maritime Security: Best Practices and Lessons Learned**

Several best practices were identified within the framework of a shared vision among the states of the Hemisphere. These practices reflect innovative and coordinated approaches for strengthening security, sustainability and governance of the maritime domain and were tested in various national and subregional contexts, revealing a growing commitment to comprehensive ocean management, inter-agency cooperation and compliance with international commitments. Below is a structured synthesis of these experiences, based on the previously defined Maritime Security strategic pillars:

### **Pillar I: Ocean Governance and Regulation**

- Creation of Maritime inter-agency commissions (cases of Brazil, Chile, Mexico and Peru).
- Development of Maritime Security national plans (cases Brazil, Colombia and Peru).
- Incorporation of IMO standards in the national legislation.

### **Pillar II: Defense in the face of illicit threats**

- Joint maritime interdiction operations (Brazil-Colombia-Panama-USA).
- Capacity building for autonomy in shipbuilding (Mexico and Peru)
- Criminalization of the use of semi-submersibles (Colombia and Honduras).

### **Pillar III: Maritime economic development**

- ISPS certification for port terminals.
- Public-Private Partnerships to enhance safety.
- Container traceability platforms (Uruguay).

### **Pillar IV: Navigation technical protection**

- Interoperable AIS and VTS systems.
- Safe navigation unified protocols.
- Continuous training programs for pilots and crews.

### **Pillar V: Environmental and natural resource protection**

- Satellite surveillance of marine protected areas.
- IUU fishing control mechanisms (Argentina, Chile, Ecuador and Peru).
- Contingency plans in case of spills in coastal areas.

## **Pillar VI: Ocean research, technology and surveillance**

- Command and control centers with sensors, cameras and satellites.
- Ocean regional observation programs (GOOS-Americas).
- Academic cooperation networks for ecosystem monitoring.

## **Pillar VII: Human and cultural safety**

- Inclusion of indigenous peoples from the coastline areas in maritime management (e.g., Brazil, Panama, Canada).
- Maritime labor rights protection (ILO Convention No. 188).
- Coastal education campaigns on safety at sea.

These practices demonstrate that, beyond national particularities, there is a hemispheric convergence in the search for coordinated and effective solutions to contemporary ocean challenges. Their identification and dissemination not only strengthen the institutional capacities of each country but also foster mutual learning, regulatory innovation, and progress toward a safer, more resilient, and more cohesive maritime community in the Americas.

The shared vision in this project is complemented by a series of national experiences documented and analyzed by the participating delegations that identified specific best practices based on their individual research and technical contributions, which were implemented in diverse national contexts, resulting in innovative approaches to common challenges. Although these experiences are particular in nature, they align with the strategic pillars proposed here and contribute substantially to building an integrated perspective on maritime security in the hemisphere.

As part of the collaborative effort to develop this Best Practices Guide in Hemispheric Maritime Security, the technical inputs provided by each of the participating delegations in the research project were systematized and documented. This process made it possible to identify and select a set of well-established best practices implemented in diverse national contexts, yet sharing effective approaches to the prevention, mitigation, and response to maritime threats.

These practices reflect successful institutional efforts linked to both national policies and regional strategies, strengthening state capacities in addressing challenges such as illicit

trafficking, illegal fishing, human trafficking, piracy, environmental pollution, and port insecurity.

### **Maritime Surveillance and Control with Advanced Technology**

Several countries have made progress in the use of technological tools for maritime surveillance, as evidenced in their national reports:

- **Chile** highlighted the implementation of an integrated satellite monitoring system using AIS technology and Geographic Information System (GIS) platforms, complemented by coastal radars located in Maritime Traffic Control Centers (MTCCs). These tools enable efficient oversight both within and beyond the Exclusive Economic Zone (EEZ).
- **Peru** conducts continuous surveillance and control of activities within its maritime domain through satellite platforms—including the AIS system and Cospas-Sarsat, which together form the Maritime Traffic Information and Monitoring System (SIMTRAC).
- **The Dominican Republic** incorporated emerging technologies such as artificial intelligence, blockchain, biometric identification, and drone surveillance as part of its national strategy against illicit trade and actions derived from ORDENOP 04-2021 for the protection of maritime sanctuaries.
- **The OAS/CICAD** promoted the development of specific regulations to detect and sanction the use of semi-submersibles (SPSS), also proposing aerial patrols with thermal detection as an effective early surveillance measure.

### **Institutional Coordination and Regional Cooperation**

A recurring theme in the contributions was the strengthening of inter-agency and regional cooperation as pillars of maritime security:

- **Spain**, through its 2024 National Maritime Security Strategy, presented the functional structure of the National Maritime Security Council, which brings together public and private sector entities, with technical support from the National Security Department. The strategy includes creating a Maritime Risk and Threat Information Analysis Cell.
- **Ecuador** shared its experience in the planning and execution of the multinational Galapex Exercise, which integrates state and international capabilities to strengthen operational response.

- **Peru** established the Maritime Information Fusion Center for Latin America (IFC-Peru) through its National Maritime Authority—held by the General Directorate of Captaincies and Coast Guard of the Peruvian Navy. This center was created to provide timely, accurate, and effective maritime safety and security information to the national and international maritime community, as well as to other relevant sectors in Latin America.
- **The Dominican Republic** positioned itself as a key stakeholder in the Caribbean Basin Security Initiative (CBSI) and in the Alliance for Security, Justice, and Development, and serves as the regional headquarters of the Latin America and Caribbean Cyber Competence Center, based in Santo Domingo.

### **Operational Patrol and Coordinated Response**

The execution of permanent patrols and sustained presence in strategic areas was identified as an effective deterrent mechanism:

- **Chile** highlighted its Oceanic Fisheries Enforcement Operations (OFPO) and Oceanic Surveillance Operations (OVO), carried out in compliance with international standards and the United Nations Security Council resolutions.
- **Brazil** operates under an integrated model to exercise Maritime Law Enforcement through cooperation among the Brazilian Navy, the Federal Police, IBAMA, and other agencies.
- **Spain**, as a line of action and within the 2024 Strategy framework, decided to keep an active presence in maritime spaces under national sovereignty, in addition to the strengthening of port and supply chain security.
- **Peru** conducts constant reconnaissance flights and maritime patrols within its Maritime Domain in order to reinforce and validate the information provided by its Maritime Traffic Information and Monitoring System (SIMTRAC) of the National Maritime Authority. These patrol capabilities were strengthened in early 2026 with the commissioning of two Maritime Patrol Vessels—BAP Río Huarmey and BAP Río Nepeña—built at the shipyards of the *Servicios Industriales de la Marina* (SIMA PERU), as part of the efforts to strengthen the naval industry and partnerships with STX Corporation and Hyundai Heavy Industries (Korea).

## **Environmental Protection and Conservation of Marine Resources**

Sustainable management of the marine environment emerged as a shared practice in several countries:

- **The Dominican Republic** institutionalized the National System of Protected Areas (SINAP), which includes marine reserves, underwater parks, and Ramsar sites, managed by the Ministry of Environment and Natural Resources in coordination with the Navy.
- **Brazil** regulates and oversees marine conservation units, with responsibilities in biodiversity protection, environmental education, and licensing through the Chico Mendes Institute for Biodiversity Conservation (ICMbio) and IBAMA.

## **Updated Legal Frameworks and Comprehensive Protection Strategies**

Countries have reported the development of regulatory frameworks and multisectoral strategies to address emerging threats:

- **Spain**, through its National Plan for the Protection of Underwater Cultural Heritage, promotes regulatory updates in fisheries and maritime spatial planning.
- **Brazil** coordinates its institutional actions through specific laws (for example, those defining the competencies of the Ministry of Fisheries and Aquaculture) that regulate sustainable fishing, enforcement, and maritime traffic control.
- **The Dominican Republic** reported the use of the DIME-FIL framework (Diplomatic, Information, Military, Economic, Financial, Intelligence, and Law Enforcement), applied across all phases of illicit transit, from the point of origin to the final destination.

## **Maritime Culture, Drills, and Technical Training**

Best practices were also identified in strengthening maritime culture and human capacities:

- **Spain** promotes awareness of the maritime domain as a matter of national strategic importance in its 2024 Strategy, and fosters collaboration among government agencies, think tanks, and R&D institutions.

- **Peru** conducts various exercises addressing pollution from oil spills and other contaminants in maritime and riverine areas under its jurisdiction, all in compliance with the National Contingency Plan of the National Maritime Authority.
- **The Dominican Republic** develops emergency drills, training programs, and inter-agency initiatives to strengthen preparedness for chemical, biological, and marine pollution threats.

**Note to the Reader:**

The practices outlined in this section were carefully selected and validated based on individual research and technical inputs provided by the participating delegations within the framework of the project. This set represents a concrete expression of the hemispheric commitment to strengthening maritime sustainable, adaptive, and coordinated strategies.

These best practices also constitute a common reference framework that can be replicated, adapted, and scaled according to the realities, priorities, and institutional capacities of each Member State.

The detailed description and analysis of the identified best practices are still under development.

## **4.2 Procedures, Benchmarks, and Noteworthy Examples**

Maritime security in the Americas has progressively become more robust through the combination of operational practices, regulatory frameworks, and technological tools adapted to national contexts. This section systematizes actions that have proven effective and replicable across different countries.

### **Recommended Procedures**

#### **Brazil**

- **Contingency Plan (PLANCON):** Established under Law 12,608 of 2012 and Decree No. 10,950/2022, which creates the National Contingency Plan for Oil Pollution Incidents in Waters under National Jurisdiction. Together, they constitute the response protocol for maritime pollution incidents, including oil spills and illegal boarding.
- **Maritime Risk Zoning:** A national system to identify critical areas, implemented in collaboration with the Navy and environmental agencies.

## **Chile**

- Unified Port Inspection Procedures: Joint protocols were implemented under the ISPS Code in ports such as Valparaíso and San Antonio, and customs, maritime services, and regional Attorney General Offices were consolidated.
- Integrated Port Management System (SIGEP): A digital platform for planning and monitoring operations in Chilean ports, including security alerts and traceability.

## **Mexico**

- Maritime Merged Centers: Real-time information exchange among the Navy, Customs, and Civil Protection, with emphasis on hybrid threats and drug trafficking.
- Inter-agency Simulation Exercises: Coordinated by the Secretariat of the Navy (SEMAR), with regular training in crisis management and control of illicit trafficking.

## **Peru**

- South Pacific Maritime Interdiction Plan: A protocol developed jointly with Ecuador and Colombia to counter IUU fishing and illicit trafficking.
- Risk Map generated by SIGESTA: A statistical management system developed by the General Directorate of Captaincies and Coast Guard (DICAPI), as the National Maritime Authority, serving as a strategic input for the allocation of patrols and naval resources.

### **Suggested International Standards**

The following regulatory frameworks have been applied, in whole or in part, in the four countries analyzed:

- ISPS Code (IMO, 2004): The foundation for port inspection protocols and the protection of critical infrastructure.
- STCW Convention: Regulations on training and certification of maritime personnel, officially adopted in Mexico, Brazil, Chile, and Peru.
- ISO 28000: Security management standard for the logistics chain, applied in terminals in Brazil (Santos), Chile (Valparaíso), and Mexico (Veracruz).
- FAO Guidelines against IUU Fishing: Incorporated into the legislation of Chile and Peru, particularly for coordinated satellite monitoring in the South Pacific.

## Noteworthy Practical Examples (by Country)

### Brazil

- The Blue Amazon Management System (SisGAAz): A system developed by the Brazilian Navy to monitor, control, and protect Brazil's maritime domain, known as the "Blue Amazon." It integrates technologies such as radars, satellites, and sensors to monitor illicit activities, protect resources and strategic infrastructure, and support decision-making in defense, security, and sustainable development.
- Maritime Operations Center (COPMar): A Brazilian Navy infrastructure designed to coordinate, integrate, and oversee maritime traffic surveillance and control within national jurisdiction. It operates as a command center that centralizes information from sensors, systems, and naval units, enabling rapid response to threats and emergencies at sea, and strengthening security, sovereignty, and the protection of maritime interests.
- Ports certified under the ISPS Code: Ports in Brazil, such as Santos, Paranaguá, and Itajaí, have standardized protocols for inspection, access control, and anomaly management to ensure the security of port facilities against threats, in compliance with international maritime security standards.

### Chile

- Coastal Watch: Coastal Watch is a Chilean Navy technological platform that comprises cameras, AIS (Automatic Identification System) technology, and fisheries reports from coves and naval centers. Its objective is to strengthen coastal surveillance and maritime monitoring of activities in real time.
- Chilean Navy Maritime Command Center: This center provides operational response capabilities in emergencies and protects strategic maritime routes. It coordinates search and rescue operations and oversees maritime traffic, contributing to the security and sovereignty of Chilean jurisdictional waters.
- Cross-Surveillance Agreement with Argentina in the Southern Zone: Chile and Argentina cooperate in the control of illicit trafficking in the southern region. This collaboration includes joint patrols and information sharing to strengthen security in shared maritime areas, especially in the southernmost part of the continent.

## Mexico

- Modernization of the National Port System (ASIPONA): These administrations are decentralized public entities responsible for the management, operation, and development of the country's main ports. Since their reorganization under the Secretariat of the Navy in 2021, they have strengthened their capabilities in strategic planning, operational efficiency, and port security, aligning these entities with international standards.
- Implementation of the ISPS Code in strategic ports: Major Mexican ports, such as Altamira, Veracruz, and Manzanillo, have fully adopted the International Ship and Port Facility Security Code (ISPS). This implementation enabled the establishment of robust protocols for inspection, access control, and risk management, thus improving protection against transnational threats and ensuring operational continuity.
- National development and technology transfer in shipbuilding: The Secretariat of the Navy has successfully promoted the construction of offshore, coastal, and interceptor patrol vessels through the consolidation of a domestic naval industry. An example is the Long-Range Ocean Patrol Vessel (POLA) ARM *Reformador*, developed in cooperation with international shipyards and the incorporation of state-of-the-art capabilities. These units apply the maritime “trinomial” operational model (vessel, helicopter, and interceptor), optimizing surveillance, interdiction, and rescue tasks. In addition, they built domestically designed platforms—such as the Oaxaca, Sierra, and Durango classes—strengthening Mexico's technological and operational autonomy.
- Consolidation of the National Maritime Authority: Since 2017, the Secretariat of the Navy has fully performed the role of the National Maritime Authority, consolidating previously dispersed responsibilities related to maritime security, port protection, maritime traffic control, and marine pollution prevention. This reform has been recognized as a successful case of institutional reorganization, creating a more effective and coordinated governance model, aligned with Mexico's international commitments as a coastal, port, and flag State.

## Peru

- Satellite Monitoring and Control System (SCMS): This system, managed by the Ministry of Production, enables real-time tracking of fishing vessels within the country's

Exclusive Economic Zone (EEZ). It facilitates oversight of fishing activities, strengthens enforcement, and contributes to protecting hydrobiological resources against illegal practices.

- The Coast Guard Operations Command of the General Directorate of Captaincies and Coast Guard is responsible for monitoring and controlling all activities within Peru's maritime domain and conducting search and rescue operations to safeguard human life at sea. To fulfill its mission, it operates eight state-of-the-art maritime patrol vessels built by SIMA Peru in coordination with the South Korean shipyard STX, along with various satellite platforms and communication systems such as AIS and Cospas-Sarsat embedded into the SIMTRAC platform.
- Strengthening of the naval industry: Peru has developed an autonomous capacity for the construction and maintenance of vessels through the Industrial Services of the Navy (SIMA Peru S.A.). Notable projects include the BAP *Unión* (sailing training ship) and the construction of Río Pativilca-class patrol vessels.
- Peru is implementing the public investment project titled "Expansion of Surface Coast Guard Operational Capacity with Ocean Patrol Vessels in the Maritime Domain and SAR Area of Responsibility – Callao District" (CUI 2491416), within the framework of modernizing the National Maritime Authority and strengthening the State's effective presence in the maritime domain. This initiative aims to significantly enhance surveillance, control, and operational response capabilities on the high seas.
- The project includes the incorporation of three Offshore Patrol Vessels (OPVs), platforms designed for long-endurance operations with extended deployment capacity, capable of efficiently covering the vast maritime area under Peru's jurisdiction and responsibility, including the SAR area extending up to approximately 3,000 nautical miles.
- These units will comprehensively strengthen the permanent responsibilities of the Peruvian Navy, through the General Directorate of Captaincies and Coast Guard, in fields such as:
  - Ocean surveillance and patrol
  - Enforcement of national regulations and international maritime conventions

- Interdiction of illicit activities (illegal fishing, drug trafficking, smuggling, and other transnational threats)
  - Search and Rescue (SAR) operations
  - Protection of the marine environment and hydrobiological resources
- Operationally, OPVs enhance the country's deterrence and response capacity through detection, pursuit, interception, boarding, inspection, and escort procedures for non-compliant vessels, in accordance with national law and the International Law of the Sea. They also ensure a sustained sovereign presence in remote offshore areas, where control gaps have traditionally existed.
  - Agreement SP-2023-012 was signed on February 22, 2023, under a turnkey modality between the Peruvian Navy and IMA Peru for the construction of the first OPV unit, as part of the project's implementation. This contractual model simultaneously strengthens the national naval industry, promotes technology transfer, and consolidates strategic maintenance and logistical support capabilities within the country.
  - Overall, the future incorporation of these ocean patrol vessels represents a regional best practice in strengthening maritime capabilities, integrating security, sovereignty, industrial development, and environmental protection, in alignment with the principles of maritime governance, institutional resilience, and hemispheric cooperation as promoted by this guide.
  - National strategy against illegal fishing: Peru adopted a multisectoral approach to combat illegal, unreported, and unregulated (IUU) fishing. In 2017, the country acceded to the FAO Port State Measures Agreement (PSMA), which enables it to deny port access to vessels involved in illegal fishing. In addition, the Ministry of Production, in coordination with DICAPI and other entities, conducts fishing enforcement operations in ports and coastal areas, strengthening legality and traceability of these activities.

## **Operational Tools**

### Technologies

- AIS systems: Commonly integrated across all four countries for vessel monitoring.
- Drones and UAVs: Widely used in Brazil, Mexico, and Peru, particularly in remote or hard-to-access areas.

- Satellite platforms (e.g., Copernicus, SEAS): Used by Chile and Brazil in cooperation with the European Union for environmental and security monitoring.

#### Management Instruments

- Operational risk matrices: Applied in Chile and Peru to support naval planning.
- Port control dashboards: Brazil and Mexico implemented KPIs for traceability and security in ISPS-compliant ports.

#### Cooperation Mechanisms

- Regional patrol agreements (Brazil–Guyana–Suriname / Peru–Ecuador–Colombia).
- Multinational exercises PANAMAX and UNITAS: With active participation of Brazil, Chile, Peru, and Mexico.
- Maritime intelligence-sharing networks: Through initiatives such as Maritime Domain Awareness (MDA) and the Hemispheric Maritime Surveillance Network.

The practices systematized in this section do not constitute a single or rigid model; rather, they represent dynamic, adaptable, and context-sensitive experiences shaped by specific institutional frameworks, operational capacities, and strategic priorities. Despite their differences, all share a commitment to protecting maritime spaces and ensuring the sustainable use of their resources in face of common challenges such as illegal fishing, transnational crime, climate change, and the growing complexity of the geopolitical environment.

In this regard, the exchange of best practices, the strengthening of regulatory frameworks, and international technical cooperation will continue to be essential pillars for building comprehensive, sustainable, and shared maritime security across the hemisphere. The advance toward stronger, more resilient maritime governance aligned with long-term development and security objectives in the Americas will only be possible through collaborative, coordinated approaches that respect national realities.

### **4.3 Compliance Assessment**

The evaluation process is an essential condition for the effectiveness of best practices. Without mechanisms to measure their implementation, monitoring, and results, these

practices would lack the continuous improvement component necessary to maintain their relevance and adaptability.

This chapter focuses on three key components of compliance: the definition of verifiable indicators, the implementation of monitoring mechanisms, and the promotion of self-assessment models that enable States to identify their strengths and areas for improvement in maritime security.

### Indicators

Indicators make it possible to objectively measure the level of progress or effectiveness of implemented best practices. A combination of qualitative and quantitative indicators was proposed within the framework of this guide, and grouped by strategic pillar, providing a flexible basis for institutional and regional monitoring.

a) Characteristics of the suggested indicators:

- Specific: Must measure a concrete aspect of the practice.
- Measurable: Based on verifiable or traceable data.
- Comparable: Allow the establishment of baselines and follow-up.
- Adaptable: Can be contextualized according to the State’s capacities.

Strategic Pillar	Suggested Indicator	Measurement Unit
Governance and regulation	Number of regulatory frameworks harmonized with UNCLOS	# of laws or decrees
Defense against illicit threats	Maritime seizures carried out per year	Tons / cases
Maritime economic development	Percentage of ports certified under ISPS	% of total
Technical protection	Average response time to navigation incidents	Minutes
Environmental protection	Marine protected areas with active surveillance	Covered km <sup>2</sup>
Technology and surveillance	Areas covered by remote monitoring systems	% Maritime coverage
Human security	Number of active community training programs	# of programs

**Table 2.** Examples of indicators by strategic pillar

## **Monitoring and Verification Mechanisms**

Effective maritime governance requires more than the design of best practices; it demands clear mechanisms for evaluation, feedback, and sustained implementation. In this regard, several countries in the hemisphere have developed institutional structures and technological platforms aimed at continuous monitoring, technical validation, and the ongoing improvement of maritime capabilities. This section systematizes these mechanisms, distinguishing among national initiatives, regional efforts, and exemplary cases.

### **Suggested Mechanisms at the National Level**

- Inter-agency monitoring units: Composed of representatives from maritime authorities, customs, armed forces, and environmental agencies.
- Periodic compliance reports: Semiannual or annual self-reporting documents on the status of implementation.
- Cross-audits or technical visits: Exchange of experts between countries to verify compliance and share lessons learned.

### **Suggested Mechanisms at the Regional Level**

- Consolidated hemispheric reports: Coordinated by the OAS through the Inter-American Committee against Terrorism (CICTE), promoting technical evaluations and country-specific recommendations.
- Shared regional monitoring dashboards: With restricted access to facilitate joint analysis of emerging threats.
- Electronic platforms under development: Such as the Inter-American Maritime Security Network, designed for the exchange of data on operations, regulations, and critical events.

## **Specific Mechanisms**

### **Brazil – Maritime Traffic Information System (SISTRAM)**

SISTRAM is a strategic tool operated by the Brazilian Navy to monitor and control maritime traffic within the Search and Rescue (SAR) area under Brazilian jurisdiction. The system collects and processes navigation data from national and foreign vessels, enabling real-time tracking of their position and routes. It facilitates the coordination of search and

rescue operations, the prevention of maritime incidents, and the protection of the marine environment. In addition, it supports compliance with Brazil's international commitments in maritime safety and security. In Brazil, it is mandatory for all Brazilian-flag vessels to participate in SISTRAM, and it is optional for foreign vessels, although integration is recommended to enhance navigation efficiency and safety in Brazilian waters.

#### **Chile – DIRECTEMAR Port Inspection Platform**

In Chile, the General Directorate of Maritime Territory and Merchant Marine (DIRECTEMAR) leads a national port inspection system based on international protection protocols. This platform integrates audit processes in ports certified under the ISPS Code, ensuring compliance through periodic inspections. It also manages contingency plans for coastal risks and threats to critical infrastructure. The maritime authority annually submits technical and operational performance reports to the Ministry of Defense and the Undersecretariat for the Armed Forces, promoting transparency and institutional strengthening in port protection.

#### **Mexico – Coastal and Marine Information and Analysis System (SIMAR)**

Developed by the National Commission for the Knowledge and Use of Biodiversity (CONABIO), SIMAR is a comprehensive technological platform aimed at studying and monitoring marine-coastal ecosystems in the Greater Caribbean and the northeastern Tropical Pacific. SIMAR, its Data Center, manages environmental and biological information using open data from satellite sensors, field measurements, numerical and climate models, and cartographic databases. Its geospatial platform, known as SIMAR-Explorer, incorporates spatiotemporal analysis tools and operates early warning systems for phenomena such as coral bleaching, red tides, pelagic sargassum, marine water quality, and ocean acidification. This technological infrastructure supports evidence-based decision-making, biodiversity conservation, and national and international cooperation through networks such as MBON. It also contributes directly to global commitments such as the Sustainable Development Goals (SDGs), the Paris Agreement, and the Global Biodiversity Framework, aligning with Mexico's 2024–2030 environmental agenda.

#### **Peru – Maritime Information Fusion Center for Latin America (IFC-Peru)**

Peru's National Maritime Authority established the Maritime Information Fusion Center for Latin America (IFC-Peru) to provide timely, accurate, and effective maritime safety and

security information to the national and international maritime community, as well as to other relevant sectors in the region. IFC-Peru collects and analyzes maritime information to produce periodic reports aimed at enhancing safety and security in the maritime domain. It also integrates capabilities to address common threats through interoperability and information sharing with similar centers worldwide.

**Regional Mechanism – OAS Maritime and Port Protection Program (CICTE)**

At the hemispheric level, the Organization of American States, through the Inter-American Committee against Terrorism (CICTE), implements the Maritime and Port Protection Program. This initiative aims to strengthen the technical capacities of Member States through systematic evaluations, regional workshops, and specialized audits. Its activities include verifying compliance with the ISPS Code at port facilities, conducting workshops on risk management for complex threats (such as terrorism, transnational crime, and cyberattacks), and organizing regional simulation exercises.

Subsequently, technical assessments and tailored recommendations are generated for participating countries, promoting continuous improvement in the implementation of protective measures (OAS, 2024).

Country / Organization	Mechanism applied	Main Duty
OAS / CICTE	Evaluation of the PBIP Code, regional simulations	Technical and educational verification
Brazil	SISTRAM and ISPS audits	Monitoring in real time and regulation control
Colombia	MEAN – Evaluation by the Navy	Tactical-operational verification
Mexico	SIMAR / PBIP plans audit	Formal port control
Peru	Information Fusion Center (IFC)	Collects and analyzes timely maritime information
OAS (Hemisphere)	Hemispheric reports and technical visits	Regional coordination and recommendations

**Table 3.** Synthesis of follow-up and verification regional best practices

## **Self-Assessment Models**

Institutional self-assessment in the maritime domain has become an essential strategic practice to address the risks and threats that affect naval, port, and commercial operations. In the hemispheric context—where multiple jurisdictions, actors, and transnational threats converge—self-assessment models enable an introspective, systematic, and results-oriented evaluation of institutional capacities and vulnerabilities.

This type of mechanism has gained recognition among international organizations and naval study centers as a key tool not only to ensure continuous improvement but also to align institutional capabilities with international operational standards and foster regional interoperability (Arzola, 2020). In particular, models applied in the maritime environment must consider variables specific to the naval domain, such as ocean surveillance, response to transnational illicit activities, environmental control, naval cybersecurity, and port governance.

Self-assessment makes it possible to identify critical gaps in institutional response capacity to complex threats such as maritime drug trafficking, illegal fishing, coastal pollution, and modern piracy. It also contributes to strengthening shared doctrines and common approaches in the design of hemispheric strategies (Domínguez Silva, 2018).

An effective self-assessment model should incorporate an evaluation framework based on strategic dimensions. These include: (1) the existing regulatory and doctrinal framework, (2) the operational capacity and sustainability of maritime control systems, (3) the level of coordination with international organizations, and (4) the effectiveness of civil-military cooperation in the maritime domain. Each dimension should be assessed using institutional maturity scales, supported by empirical evidence, and followed by specific improvement plans with clearly defined responsibilities and timelines.

The value of these models is not limited to a diagnosis. Their true strength lies in their ability to close management cycles through continuous feedback, facilitating organizational learning and regulatory adaptation in changing contexts. As noted in the academic framework of the Naval High Studies Center, research and self-assessment should be central pillars of modern maritime defense and security policy, articulated through a systemic and multidimensional vision of security (Arzola, 2020).

A hemispheric approach to maritime security requires the institutionalization of internal evaluation practices as technical, adaptive, and transparent tools that not only strengthen

national capacity but also contribute to multinational governance efforts. Only through a sustained culture of self-assessment will it be possible to effectively address the maritime challenges of the 21st century.

Elements of an effective self-assessment model:

1. Dimension-based evaluation: Each strategic pillar is assessed using specific criteria.
2. Progress scales: For example, a scale from 1 (incipient) to 5 (consolidated).
3. Gap diagnosis: Analysis of the factors limiting implementation.
4. Corrective action plan: Including timelines, parties responsible, and estimated resources.

Example of a basic self-assessment template

<b>Dimension</b>	<b>Assessed Criteria</b>	<b>Current Level (1-5)</b>	<b>Evidence</b>	<b>Suggested Actions</b>
Governance	Existence of an updated legal framework	3	Maritime Law under review	Accelerate the Legislative reform
Defense	Response capacity in face of criminal actions	4	Regular seizures	Strengthen binational cooperation
Environmental	Monitoring of protected areas	2	Lack of surveillance in high seas	Request external satellite support

**Table 4.** Examples of basic self-assessment templates

Institutional evaluation and the achievement of strategic goals are essential elements for effectively closing the cycle of managing best practices in the maritime sector. It is not enough to just identify and document practices that have produced positive results; it is essential to guarantee their sustained implementation, operational consolidation, and continuous improvement. This process must be carried out under a governance approach that prioritizes transparency, organizational adaptability, and inter-agency cooperation, in line with the principles of comprehensive maritime security and institutional resilience.

Performance indicators, verification mechanisms, and self-assessment models presented in this chapter are not ends in themselves, but rather strategic means that allow States in the hemisphere to build measurable institutional capacities. These tools enable comparative analysis between countries and regions, promote accountability, and concretely inform strategic planning and technical cooperation processes. In contexts such as maritime defense, control of illicit activities, and environmental protection, this information becomes a critical basis for decision-making aimed at mitigating emerging risks.

A best practices guide in maritime security and governance should not be conceived as a closed or merely regulatory document. On the contrary, it should be a dynamic instrument, constantly updated, that reflects both lessons learned and new risk scenarios. Institutionalizing a culture of continuous evaluation strengthens the continent's maritime capacities and allows state and non-state actors to adapt to increasingly complex, interdependent, and transnational operating environments (Domínguez Silva, 2018).

Adopting a cyclical evaluation approach—based on diagnosis, planning, implementation, monitoring, and feedback—allows for the consolidation of effective, resilient, and long-term-oriented maritime governance. This cycle not only reinforces the capacity for immediate response but also strategic foresight in the face of threats that require coordinated regional responses, such as transnational organized crime, maritime migration flows, and the deterioration of ocean ecosystems.

# CHAPTER V

## LESSONS LEARNED: SUCCESS CASES IN HEMISPHERIC MARITIME SECURITY



The inclusion of success cases is key in the context of developing a best practices guide in hemispheric maritime security, since it has been proven to be an essential strategic element to back up the recommendations with empirical evidence. These cases, developed exclusively within the Americas, demonstrate how different states in the hemisphere manage to confront and overcome common maritime security challenges by implementing effective, innovative, or sustainable practices.

Each success case featured in the guide presents a concrete example of how a policy, operational action, technical procedure, or regulatory framework applied at the national level can produce verifiable positive results, in relation to issues such as the control of illicit trafficking, the protection of the marine environment, the surveillance of maritime spaces, emergency response, and the management of risks associated with port infrastructure and maritime routes.

These cases were not included as closed models or regulatory standards, but rather as adaptable possibilities. Their main purpose is to illustrate viable and effective alternatives that could be considered by other states in the Americas based on their respective operational realities, institutional capacities, and legal frameworks. In this sense, success cases broadened the range of options for decision-makers by offering proven references in comparable geographic, cultural, and political contexts.

Likewise, these examples strengthen the practical dimension of the guide by linking the proposed best practices with results obtained on the ground. Success cases serve as a form of technical validation, as the documented experiences demonstrate that the recommendations were not merely theoretical or aspirational formulations, but had proven their effectiveness when implemented under real-world conditions.

Furthermore, success cases contribute to reinforcing the logic of hemispheric cooperation and community in maritime security. An integrated regional perspective was promoted by focusing on national experiences from the Western Hemisphere—specifically from countries in North, Central and South America, and the Caribbean.

This research highlighted the wealth of approaches available within the continent itself, without relying exclusively on extra-regional models, thus fostering a vision of technical autonomy and inter-American solidarity.

In addition, success cases provided valuable operational lessons learned. Each experience analyzed revealed not only the achievements attained, but also the challenges faced, the adjustments made during implementation, the critical success factors, and areas for improvement. These elements provided useful strategic information for other countries interested in replicating or adapting the practices described, thus reducing uncertainty and increasing the likelihood of success in future applications.

It is important to note that national success cases have provided a fundamental dimension of veracity, applicability, and regional contextualization to this Best Practices Guide. Their inclusion not only facilitated the understanding of the recommendations but also encouraged their adoption through the exemplary power of real, documented, and successful experiences in national contexts across the hemisphere.

The following are the national success cases contributed during the research process of the team working on the Best Practices Guide in Hemispheric Maritime Security.

## 5.1 Cybersecurity and Cyber Defense in the Maritime Environment – Emerging Challenges and Strategies for the Protection of Critical Maritime Infrastructure

Colonel Eduardo Cunha, Brazilian Army.

Digitalization has profoundly transformed the way ports, ships, and the entire global trade logistics chain operate. This process has produced a series of clear benefits: faster, more efficient, and interconnected operations. However, as with any technological advancement, this modernization has also opened up new and significant vulnerabilities that did not exist previously. GPS-based navigation systems, automated port control platforms, and onboard communication networks are currently exposed to cyberattacks capable of paralyzing critical operations.

In Latin America and the Caribbean, this vulnerability is exacerbated, on the one hand, by the absence of consistent regulatory frameworks and, on the other, by the marked asymmetries in technical capabilities among the countries. For this very reason, it is essential to adopt a strategic and coordinated approach. It is not enough to implement isolated solutions such as antivirus software or firewalls; it is necessary to comprehensively protect the digital systems that constitute the operational core of ports and ships, invest sustainably in cyber intelligence focused on the maritime sector, establish clear incident response protocols, and, above all, strengthen cooperation mechanisms among the countries of the region. Without a solid security culture, any effort could prove insufficient (International Maritime Organization, 2023).

A recent case in Brazil illustrates the magnitude of the challenge. In May 2024, the Port of *São Francisco do Sul* was the target of a cyberattack that encrypted critical data stored on its servers, forcing the temporary suspension of systems as a containment measure. Thanks to the rapid response of the information technology team and specialized technical support, operations were restored in less than 24 hours, with the progressive reactivation of security systems. However, the incident exposed financial, accounting, and human resources information that should have remained protected, demonstrating that vulnerabilities persist and that potential losses can be significant (Port of *São Francisco do Sul*, 2024).

Likewise, cyberattacks in the maritime sector generate considerable costs. It is estimated that financial losses from digital crimes globally exceed six trillion US dollars annually, with ports being frequent targets due to the direct impact their disruption has on

international trade. In this context, investment in cybersecurity should not be viewed as an expense, but as an essential mechanism for strategic assurance. Technology, and in particular artificial intelligence, plays a fundamental role in this area: through 24/7 monitoring and active defense systems, it is possible to detect and neutralize threats before they cause significant damage (Cybersecurity Ventures, 2023).

Therefore, to make substantial progress, it is necessary to establish specialized maritime incident response centers, conduct regular vulnerability assessments, and implement practical exercises involving all relevant stakeholders, including governments, the private sector, and port operators. Furthermore, it is essential for States to adopt technical standards aligned with the International Maritime Organization, clearly ensuring regulatory frameworks that respect national sovereignty, at the time they are compatible, to guarantee effective regional protection (International Maritime Organization, 2023).



Some countries in the region have already begun to move in this direction. Brazil, Colombia, and Mexico, for example, have incorporated maritime cybersecurity into their national strategies. The exchange of information and experiences in regional forums has significantly contributed to the strengthening of incident response capabilities and to improving the protection of supply chains. Looking ahead, it will be essential to more deeply integrate cybersecurity with traditional maritime defense, foster the active participation of the private sector, and invest in the training of highly specialized professionals. Recognizing that

cyberspace constitutes an essential dimension of maritime security, and establishing harmonized regional standards creates a strategic step toward protecting commercial interests and hemispheric stability (OAS, 2024).

The challenge is considerable. Contemporary maritime security is not limited to the physical realm but integrates digital, human, and technological dimensions. Consequently, adequate preparedness, a clearly defined strategy, and effective cooperation among the nations that share this maritime space are indispensable to ensure safe and sustainable development.

## 5.2 Operation Atalanta: The European Union's Ongoing Fight Against Piracy in the 21st Century

Captain Ricardo Valdés Fernández<sup>2</sup>, Spanish Navy

*Maritime security is defined as “the combination of preventive and response measures aimed at both protecting the maritime environment from threats and intentional illegal acts, and limiting the effects of natural hazards, accidents, and damage to the environment and people<sup>3</sup>.”*

*National Maritime Security Strategy, 2024*

First, I would like to begin this article, which coincides with my arrival at the Inter-American Defense College (IADC) and my presentations to the Chair of the Council of Delegates and the Secretariat, all under the structure of the Inter-American Defense Board (IADB), by expressing my gratitude for the welcome I received upon my arrival in Washington, D.C. My mission on this “inter-American journey” is to support the IADC in its teaching activities, to promote collaboration between the IADC and the IADB Secretariat, and to support the IADB Secretariat on projects it deems appropriate. The project to draft a “Best Practices Guide in Maritime Security,” is part of this collaborative framework as a visiting professor at the IADC and as a temporary assignee to the Research Department.

Concerning maritime security, the Spanish Armed Forces (FAS), and the Navy in particular<sup>3</sup>, have many years of experience at the domestic, bilateral, and international levels, primarily within the framework of the European Union (EU) and the North Atlantic Treaty Organization (NATO). In this article, I intend to delve into that experience, in an attempt to add value to the IADB Secretariat’s project on maritime security, but in no way do I intend to lecture anyone or intend to assure it is the only way to solve the problem. We are now at a historical juncture where succeeding in international relations requires respect, generosity, and humility more than ever.

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<sup>2</sup> Captain Ricardo Valdés Fernández (O-6). Visiting Professor at the Inter-American Defense College (Research Department) and Head of the Geopolitical Analysis Area (Security and Defense Coordination and Studies Division), General Secretariat for Defense Policy, Ministry of Defense (Spain).

<sup>3</sup> First definition agreed-upon by multiple maritime security stakeholders in Spain.

In Spain, through the various Permanent Operational Commands<sup>4</sup> and their assigned missions, a certain level of well-being can be guaranteed to the public thanks to the contribution of the Armed Forces to National Security (which includes<sup>5</sup> National Defense, Public Safety, and Foreign Action), all in favor of the nation's interests. These interests are none other than creating a security bubble through constant surveillance of sovereign spaces, which affect different domains: land, sea, air, outer space, and cyberspace (Chief of the Defense Staff–JEMAD, 2020). Therefore, the Armed Forces conduct Presence, Surveillance, and Deterrence operations (24 hours a day, 7 days a week, 365 days a year), one of which consists of contributing to creating a safe and secure environment in those maritime spaces over which we legally exercise sovereignty or which, due to the activities carried out there, are of interest to us.

In recent years, Spain has actively promoted cooperation in the African continent, generally bilaterally, under the umbrella of what is called “Defense Diplomacy<sup>6</sup>” which is yet another tool available to our Armed Forces in support of the country's international projection. These initiatives vary and are carried out by both the Army and the Navy, but based on the content of this article, I will highlight the deployments of ships<sup>7</sup> whose missions involve maritime security and military cooperation with various West African coastal states. The ultimate goal is “to develop capabilities in African nations for the control of their own territorial waters through joint training exercises” (Spanish Joint Chiefs of Staff–EMAD, 2024).

The current pragmatic approach to minimizing risks and combating transnational threats involves a multinational collaborative strategy. Precisely because we are a member state of international organizations with responsibilities in Security and Defense, and in addition, due to our bilateral relations, we can utilize collaborative mechanisms and tools to influence potentially “high-risk” situations as opposed to those of “complete normality” (National Defense Directive–DDN, 2020). At the very least, this collaboration creates synergy in our

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<sup>4</sup> There are five permanent operational organizations directly subordinate to the Chief of the Defense Staff (JEMAD). These organizations are the Maritime Operational Command (MOM), the Air Operational Command, the Space Operational Command, the Land Operational Command, and the Cyber Operational Command. The MOM is responsible for maritime security.

<sup>5</sup> In Spain, until 2010, only the term “National Defense” was used. The term “Security” appeared with the 2011 Spanish Security Strategy.

<sup>6</sup> “A set of international activities based primarily on dialogue and cooperation carried out bilaterally by the Ministry of Defense with our allies, partners, and friendly countries to promote the achievement of defense policy objectives in support of the State's foreign policy” (Defense Diplomacy Plan 2011).

<sup>7</sup> This semester the Spanish maritime security vessel BAM “FUROR” has been deployed.

capabilities since it allows expanding our range of action and early warning, and then thanks to indicators and alerts other actors report regarding risks and threats at sea.

### Geopolitics and the Sea

We live in an era in which the global geopolitical landscape is shaped by a movement in which states are seeking their options among multilateralism (United Nations, UN), multipolarity (Global South), or “mini-multilateralism” (G7, BRICS+, AUKUS)<sup>8</sup>. Spain firmly supports effective multilateralism (DDN, 2020). These movements are also driven by the unfolding of various conflicts; one of them is in Ukraine. Two years have just passed since the large-scale Russian invasion, and many questions arise regarding the future of the war, heavily influenced by Western material support for Ukraine and a renewed Russian initiative on the front. Another conflict to consider is the one stemming from Hamas’ massive attack on Israeli territory and Israel’s subsequent reaction, which is increasing regional tensions daily.

In both conflicts, the sea has been a key element, as it is a vulnerable and globally connected shared space (seas and oceans are practically all interconnected) where sea lines of communication (SLOCs) must be protected<sup>9</sup>—a fundamental aspect of maritime security. In Gaza, the sea has facilitated the delivery of supplies, and this is likely further proof that the maritime route will be more effective than air and land deliveries<sup>10</sup>. We must therefore protect our maritime interests within our sovereign waters, and this requires coordination among the various state actors (a weakness in the domestic sphere, which the Navy has successfully addressed) with maritime responsibilities. It is also necessary to protect our interests beyond those areas where the United Nations Convention on the Law of the Sea assigns responsibilities to the signatory countries, from internal waters to the continental shelf.

The maritime environment not subject to national jurisdiction provides invaluable ecological, economic, scientific, and food security benefits. However, these areas are vulnerable to threats such as pollution, overexploitation, and the impacts of climate change. The growing demand for marine resources threatens to exacerbate this problem. On March 4,

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<sup>8</sup> G7 or Group of Seven: United States, Japan, Germany, United Kingdom, France, Italy, and Canada. BRICS+: acronym for Brazil, Russia, India, China, South Africa, plus Iran, Saudi Arabia, United Arab Emirates, Egypt, and Ethiopia. AUKUS: acronym for Australia, United Kingdom, and the United States.

<sup>9</sup> On March 29 of this year, exports from the Ukrainian maritime corridor surpassed those of the “grain initiative” agreed upon by the UN, Ukraine, and Russia (which withdrew from it last year).

<sup>10</sup> Jan Egeland, Secretary General of the Norwegian Refugee Council and former UN aid chief, told the BBC that during last March the World Food Program (WFP) stated that its convoys with aid deliveries faced “complete chaos and violence due to the breakdown of civil order.” “Airdrops are expensive, chaotic, and usually lead to the wrong people receiving aid.”

2023, the UN approved the draft Ocean Treaty<sup>11</sup>, whose articles would apply to two-thirds of the oceans (High Seas) and focus on protecting marine biodiversity, assessing environmental impacts, the risk of overexploitation of “marine genetic resources”<sup>12</sup>, and the transfer of marine technology.

This would be the most important multilateral environmental convention since Paris (2015). However, we should not cry victory yet, since it is expected to take years before it enters into force, and its effectiveness remains to be seen, given the many points of contention that affect the sovereignty of states.

The Treaty’s projection would cover almost two-thirds of the ocean beyond national sovereignty and jurisdiction, and would allow for the establishment of “Marine Protected Areas” in High Seas. These new protected areas would limit new SLOCs and exploration and exploitation activities, such as fishing on High Seas and “deep-sea mining”<sup>13</sup>, with the aim of better balancing conservation and resource use.

“That sea that belongs to no one”

While the Ocean Treaty is being implemented, it is worth highlighting the initiative of the IADB Secretariat to address a hemispheric project that tackles risks and threats beyond the maritime space under the jurisdiction of States, based on an international alliance<sup>14</sup>. Its implementation could be carried out through joint operations (one or more actors, if only one country participates) or combined operations (if it affects more than one country) within the framework of an agreement on issues of international maritime law. It seems simple at first glance, but the framework for action is very complex.

Coordination is fundamental in any maritime security operation. And it is absolutely necessary whether we are in maritime areas under jurisdiction (domestic sphere) or in those areas that we can conceptualize as “the sea that belongs to no one” (which the Oceans

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<sup>11</sup> “*Agreement under the UNCLOS on conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction*”.

<sup>12</sup> “Biological material from ocean plants and animals that can have benefits for society, such as pharmaceuticals, industrial processes, and food” (Ministry for Ecological Transition and the Demographic Challenge, Spain).

<sup>13</sup> “Deep-sea mining is a method for recovering minerals from the ocean floor at depths of 4,500 feet to 12,000 feet” (Higher Technical School of Mining and Energy Engineers in Madrid, Spain).

<sup>14</sup> The 2023 National Security Annual Report (Spain) states on page 185: “International cooperation is key to addressing the risks associated with criminal activity, both in the area of prevention and repression, with the aim of preventing its escalation and consolidation.”

Treaty seeks to define). However, there is little differentiation between the two due to the ubiquitous nature of risks and threats.

### The Spanish Maritime Security Framework

For Spain, the sea is of utmost importance, a country whose maritime dimension leaves no room for doubt<sup>15</sup>. I will explain why: some of the key SLOCs run along our coastline and connect Europe with the Americas and Africa. The Strait of Gibraltar is one of the world's major maritime traffic chokepoints, with over 300 ships passing through it daily, totaling more than 110,000 annually. Furthermore, Spain possesses two archipelagos, the Balearic Islands in the Mediterranean and the Canary Islands in the Atlantic, as well as several sovereign territories, Ceuta and Melilla, and islets off the coast of North Africa, for which maritime transport is vital to their survival (Navy, 2024).

Ultimately, Spain enjoys a privileged position as a crossroads for routes from Africa and SLOCs approaching Europe, and also serves as a vital link to the Americas. The maritime and tourism sectors are crucial to the Spanish economy, especially given that Spain has a long coastline and is surrounded by sea. Therefore, Spain needs a maritime security policy that, among other things, makes the seas much safer (Navy, 2024). In March, Spain's National Security Council (CSN<sup>16</sup>) approved the National Maritime Security Strategy (ENSM) 2024, an update to the initial strategy developed in 2013. Subsequently, the National Maritime Security Council (CNSM) held a meeting in April, chaired by the JEMAD. The CNSM is the body responsible for driving the actions that will lead to the implementation of the Strategy. I would like to highlight the importance that this new strategy places on understanding the maritime environment, where the development of surveillance systems is vital and will naturally rely on new technologies. The seabed and the protection of underwater infrastructure<sup>17</sup> also occupy a prominent place in this updated Strategy.

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<sup>15</sup> Over 90% of our hydrocarbons, 80% of our imports, and 60% of our exports arrive in Spain by sea; we have three of the ten most important ports in Europe in terms of traffic volume; sectors such as fishing and aquaculture are highly developed, with more than 8,000 fishing vessels operating, employing approximately 180,000 people directly or indirectly; a large part of our foreign tourism is attracted by the coasts and beaches and represents a high percentage of our GDP; we possess a rich underwater archaeological heritage, which needs to be protected.

<sup>16</sup> In Spain, Law 36/2015 on National Security "regulates the basic principles, senior bodies and authorities, and the fundamental components of National Security; the National Security System, its management, organization, and coordination; crisis management; and the contribution of resources to National Security."

<sup>17</sup> NATO created a "submarine infrastructure coordination cell" in March 2023 to protect them.

The CNSM is a catalyst for interdepartmental coordination, which is essential for addressing any risk or threat in maritime spaces. In addition, it supports the CSN (Nuclear Safety Council) advising the President of the Government on the development of their National Security Policy, always within the framework of maritime security (whose frame of reference is the National Security Strategy –NSS– 2021), one of the State’s key policies, as is also Defense.

The ENSM describes the set of risks and threats<sup>18</sup> to maritime security using a geometric analogy. The strategy groups them into the three vertices of a triangle, taking into account who is affected. The first, where national sovereignty and international law would be affected; the second, involving third-party states; and the third, focused on preserving the marine environment. The Strategy also establishes three objectives: “to protect Spain “in” and “from” the sea; to improve maritime capabilities; and to contribute to a safer ocean” (ENSM 2024).

I believe it’s worth mentioning that the new Strategy “depicts the maritime domain as a global space and prioritizes maritime areas according to three categories: maritime areas of priority interest (vital or of vital interest), areas of interest, and other maritime areas of interest” (ENSM 2024). The importance of this categorization lies in the fact that the entire national maritime community has agreed to divide the sea according to the responsibilities of all national actors at sea; the same process as when maritime security was defined. Once maritime areas are prioritized and their boundaries are known, it becomes much easier to coordinate all these stakeholders, who also develop numerous administrative provisions, as can be verified by simply glancing at the extensive bibliography accompanying this article. This division is not far removed from the approach undertaken by the military when conducting operations, where we define areas (of joint operations or operations) based on the responsibilities and tasks carried out within them.

Our Armed Forces constitute an essential instrument of the State to achieve an environment of peace, security, and stability in these maritime spaces, through their assigned missions. Maritime security is one of these missions. In the following paragraphs, I will refer

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<sup>18</sup> The EU Strategic Compass groups them into four blocks: first, “terrorism, violent radicalization, and the proliferation of weapons of mass destruction”; second, “hybrid strategies, cyberattacks, disinformation campaigns, external interference, and the use of disruptive technologies”; third, “vulnerabilities in global commons”; and fourth, “climate change, environmental degradation, natural disasters, and global health crises.” NATO’s Strategic Concept identifies Russia and terrorism.

specifically to maritime security operations from two perspectives: first, Operation ATALANTA, which is an example of how to address risks and threats from the High Seas, supported by international maritime jurisprudence based on the crimes committed, how to build a regional maritime security architecture, and how to approach the mission through alliances; my second perspective is to present some examples of Spain's participation in operations or activities related to maritime security from a national, bilateral, or international point of view.

#### How to Address Risks and Threats from the High Seas: Operation ATALANTA

Following this preamble, which reflects, in a way, the conceptual framework underpinning maritime security in Spain, it is time to share our experience in those maritime areas where we lack jurisdiction, but we have to face threats and challenges<sup>19</sup> and Operation ATALANTA<sup>20</sup> is, in my view, a good example of this. Furthermore, at the time, it was the first EU maritime operation carried out within the framework of the European Security and Defense Policy (PCSD<sup>21</sup>). The strategic-level Operations Headquarters (OHQ) is located at the Rota Naval Base, under the command of a Vice Admiral of the Spanish Navy.

Piracy activity increased exponentially and dramatically in the Indian Ocean and the Horn of Africa from 2005<sup>22</sup> onwards. This situation alerted the United Nations Security Council (UNSC), which was compelled to adopt a series of resolutions to minimize its effects, protect shipping and guarantee the right to freedom of navigation along the various maritime routes. The EU Council demonstrated its support for these UNSC decisions by approving the creation of a naval air force<sup>23</sup>, which later initiated Operation ATALANTA. The deployment of our Force<sup>24</sup> to the Area of Operations (AOO) was first authorized by the Congress on January 21, 2009<sup>25</sup>, and subsequently approved by the Council of Ministers. We have therefore been operating continuously in the Indian Ocean and Red Sea since 2008, with commendable

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<sup>19</sup> Articles 100 to 107 of UNCLOS contain provisions on piracy.

<sup>20</sup> 2,240 WFP vessels protected, 3,213,335 tons of food/aid delivered, 171 pirates transferred to competent authorities, 15,953 kilos of narcotics seized.

<sup>21</sup> Up to 95% of EU trade is transported by sea, and 20% of world trade passes through the Gulf of Aden.

<sup>22</sup> According to the International Maritime Bureau, 17 attacks/6 hijackings of vessels were recorded in 2006, 46/10 in 2007, 122/48 in 2008, and 202/47 in 2009.

<sup>23</sup> On November 10, 2008, the Council adopted Joint Action 2008/851/CFSP to launch Operation ATALANTA. On 12 December 2022, the Council adopted Decision (CFSP) 2022/2441 (2), which amended the previous Joint Action and extended the mandate of EUNAVFOR until December 31, 2024. Council Decision (CFSP) 2024/1059 of 4 April 2024 also amended the 2008 Joint Action.

<sup>24</sup> Framework for the Operations of our Armed Forces Abroad: Law 2/2014 on State Action and Foreign Service, and Organic Law 5/2005 on National Defense.

<sup>25</sup> Council of Ministers of 27 December 2023: "Agreement extending until 31 December 2024 the participation of Armed Forces units and military observers in military missions abroad."

results: 100% protection of more than 2,100 vessels belonging to the World Food Program (WFP); the vulnerability of vessel transit through the AOO has been minimized; we are working to eradicate illicit trafficking, including any activity that results in economic benefits for terrorism; we serve as the EU's "naval" ambassador for the entire Indo-Pacific; and our level of cooperation with certain coastal states allows us to establish a legal framework for handing over captured pirates. And EUNAVFOR has effectively complied with the International Convention for the Safety of Life at Sea (SOLAS), providing assistance to the entire maritime community in need in the AAO (EMAD 2024).

Spain has played a very active role in Operation ATALANTA, contributing the most resources and personnel. Furthermore, Spain has been the driving force behind the various decisions adopted within the framework of the UN Security Council against piracy<sup>26</sup>. At the same time, the EU promoted a military mission to provide Somali security forces with the capacity to act on land, primarily targeting piracy infrastructure and the launching points for attacks, thus giving a comprehensive character to all EU actions in the region. In the Indian Ocean, there is a Spanish fishing fleet, along with those of other EU Member States, that regularly fish in the area and has relied on Operation ATALANTA for its security. Port security has been fundamental, and action has been taken on land, primarily in those hubs that serve as launching points for attacks at sea. The AOO where EUNAVFOR operates is very extensive: it encompasses the Gulf of Aden, the Somali coast, the Red Sea, and the Gulfs of Suez and Aqaba (EMAD 2024).

Spain promotes a series of measures based on its experience in operation ATALANTA and also on those gained at the national level, whenever it participates in any national or international forum on the eradication of piracy and armed robbery. Measures are grouped into four areas. The first, and most important, is security, by preventing piracy from achieving its objectives. The second involves building capabilities in the field of maritime security. The third relates to the legal and regulatory framework. For example, when operating in an area far from national territory, you are able to reach agreements with coastal countries to detain and transfer a pirate captured at sea or to take action against their onshore facilities from which they operate. And the last, once again, relates to the coordination of the maritime community that has responsibilities or operates in the area (Defense, 2024).

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<sup>26</sup> The initial UN Security Council resolutions were: 1814 (2008), 1816 (2008), 1838 (2008), 1846 (2008), and 1851 (2008).

The EU is also aware of this reality and considers the Indo-Pacific as the new center of global geopolitical competition. Stability in this geographical area is critical for the Union's interests, including those directly related to maritime security and governance. The EU adopted its "Strategy for Cooperation in the Indo-Pacific" on September 16, 2021, expressing its interest in expanding its presence in the region and building partnerships to strengthen the rules-based international order. NATO, in its Madrid Strategic Concept adopted in June 2022 (the eighth since the Alliance's founding, which is celebrating its 75th anniversary), and which provides a clear set of guidelines for the Alliance in the medium term, recognizes the importance that the development of conflicts in the region has for Euro-Atlantic security. This is why the Alliance is striving to strengthen dialogue and cooperation (seeking those much-needed points of convergence that are so lacking today on the international stage) with regional security forums such as AP4 (the acronym NATO uses to refer to the Alliance's most important group of global partners: Japan, South Korea, Australia, and New Zealand). All these considerations appear repeatedly in the 2021 National Security Strategy (ESN), the EU Strategic Compass, and the Alliance's Strategic Concept.

Returning to Operation Atalanta, a benchmark international maritime security operation, it is important to note that the EU has not been able to act alone and has had to develop the operation in different phases, incorporating various coastal states in the region to achieve the mission. The operation is part of the EU's comprehensive approach to stabilizing Somalia. As such, it plays an active role in supporting other EU missions and programs in the region. Operation ATALANTA coordinates with the EU missions EUCAP Somalia and EUTM Somalia<sup>27</sup> to reinforce Somali security forces, aimed at strengthening Somali forces. In addition to fulfilling its objective, this executive operation is already enabling a wide range of collaborations with countries and organizations in the region, such as India, Japan, and Djibouti, to name just a few.

EUNAVFOR, deployed in the AOO, regularly collaborates with the US-led Combined Maritime Forces (CMF) (comprising more than 33 nations and based in Bahrain) and with another EU mission operating in the Strait of Hormuz, EMASOH (European-led Mission Awareness Strait of Hormuz), also known as Operation AGENOR, currently led by France (comprising eight European countries and headquartered in Abu Dhabi). Furthermore,

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<sup>27</sup> The EU Capacity Building Mission in Somalia (EUCAP Somalia) is a civilian mission that supports the development of Somali maritime and police security. The EU Training Mission in Somalia (EUTM Somalia) trains Somali security forces to combat terrorism and piracy.

Operation ATALANTA supports the implementation of various EU-funded Maritime Security Programs (MASE) in the region.

EUNAVFOR's contact with the maritime community is through the Maritime Security Center – Horn of Africa (MSCHOA), located in Brest and integrated into the EUNAVFOR Headquarters. MSCHOA is key to safeguarding freedom of navigation across the Horn of Africa (HOA), while also coordinating and providing alerts to maritime traffic that voluntarily participates in a well-established incident response process throughout the area. MSCHOA not only manages EUNAVFOR's voluntary registration system for vessels transiting the area, but also administers an interactive website that allows it to communicate the latest guidance on piracy protection to the maritime industry and enables shipping companies and operators to register their vessels' movements in the region. EUNAVFOR, and also CMF naval assets, can be deployed in case of emergency (EUNAVFOR 2024), as well as others deployed independently, given the level of cooperation in the area.

Recently, the EU increased its commitment to the Indo-Pacific, launching the Coordinated Maritime Presence (CMP) initiative for the Northwest Indian Ocean: A defense diplomacy initiative aimed at enhancing maritime security, initially along the Indian Ocean coast with the plan to expand to the Pacific. The EU is also focused on building maritime capabilities, such as CRIMARIO<sup>28</sup> (Critical Shipping Routes in the Indo-Pacific), established in 2015, to improve maritime situation awareness (MSA<sup>29</sup>) through maritime information dissemination, training, and the development of maritime security capabilities in the Western Indian Ocean. The project expanded, adding a second phase, extending its scope to the Pacific and its responsibilities.

The exchange of maritime intelligence takes place between maritime information centers and the platform called IORIS (Indo-Pacific Regional Information Sharing Platform), to which 19 agencies from 12 countries have subscribed. The EU constantly emphasizes strengthening partnerships with countries and regional organizations, among which the most important is with ASEAN, a relationship that has grown to the point of recognizing the Association as the cornerstone of the EU's Indo-Pacific Cooperation Strategy and granting it

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<sup>28</sup> CRIMARIO organized seventeen exercises in 2023.

<sup>29</sup> ENCOMAR (Collaboration Environment) is a Spanish Navy web portal managed by COVAM (Maritime Operations and Surveillance Center). COVAM, a tool used by the Maritime Action Force (FAM), merges and analyzes data received from a wide variety of sources, enabling a near-instantaneous visual overview of events in Spanish waters of interest.

the status of a “Strategic Partnership.” This Indo-Pacific Cooperation Strategy was recently reinforced with the revision of the Maritime Security Strategy, which the EU published last year. This strategy enhances the relationship with the Indo-Pacific through the deployment and strengthening of partnerships that will boost maritime security in the region, particularly against threats such as piracy, illicit trafficking, irregular migration, natural disasters, and the effects of climate change.

Significant progress has also been made in the legal framework. For example, at the national level, piracy was reintroduced in the Criminal Code, and at the EU level, support was given to the agreements already signed with Kenya, Seychelles, Somalia, Djibouti, and Montenegro, as well as those currently being negotiated with Mauritius, Mozambique, and Tanzania (Moncloa, 2024).

However, these agreements sometimes become strained, as the one with the Federal Government of Somalia that, since March, 2022, has refused to authorize EUNAVFOR vessels to enter its territorial waters. This undoubtedly has a direct impact on the operation because it prevents action on land before the pirates’ attack, as mentioned previously. Therefore, an increased effort at sea is necessary to achieve the operation’s objectives. Notwithstanding, the operation continues at full speed, as demonstrated by the EU Council’s approval of the extension of its mandate until December 31 of this year<sup>30</sup>.

The new mandate also expands the fight against illicit activities, such as illegal piracy (European External Action Service – EEAS – 2024), while maintaining the two main missions assigned to EUNAVFOR in Operation ATALANTA: combating piracy and protecting and monitoring UN and WFP vessels and other vulnerable vessels in transit through the AOO (EMAD 2024). The natural evolution of Operation ATALANTA is to become a benchmark as a regional maritime security provider (EMAD 2024), in a very similar way to what the IADB intends with the Best Practices Guide, integrating the maximum number of actors, from different countries, with responsibilities in a future regional maritime security architecture that can effectively face any risk and threat, guaranteeing freedom of navigation (as the main objective in that region) under a rules-based international order.

Despite the efforts of Operation ATALANTA, the international maritime community somewhat agrees that “piracy is contained, but not eradicated” in the region (Department of

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<sup>30</sup> Decision adopted following the comprehensive strategic review of CSDP operations in Somalia and the Horn of Africa.

Homeland Security–DHS, 2024). The number of pirate attacks has increased since the outbreak of the Israel-Hamas war and the subsequent attacks by the Houthis in Yemen on maritime traffic. As of March of this year, two ship hijackings and three other incidents were recorded<sup>31</sup>.

Criminal organizations operating in the Horn of Africa expanded their illicit activities and currently also engage in drug trafficking, smuggling illicit goods in sealed containers, human trafficking, arms trafficking (as a consequence of the conflict in Yemen and now with the Israel-Hamas conflict), and charcoal trafficking, the latter being a very profitable business for the terrorist group operating in the region, Al Shabab (La Vanguardia, 2018).

Other examples with Spanish participation and their importance for maritime security

#### Operation Sea Guardian (NATO)

This operation results from the evolution of the previous Article 5 (Active Endeavor) Operation, which was approved by the North Atlantic Council in July 2015, and is now a NATO maritime security operation (MSO) under the name Sea Guardian. Operation Sea Guardian is entrusted with the following types of operations: “MSA; deterrence and protection against terrorism; contributing to the development of regional maritime security capabilities; maintaining freedom of navigation; conducting maritime interdiction; combating the proliferation of weapons of mass destruction; and protecting critical infrastructure” (NATO 2024).

This operation transformed the Mediterranean into a collaborative arena between NATO and the EU, thanks to the presence of EUNAVFOR in the Indian Ocean<sup>32</sup>. Spain has significantly influenced the decisions made by the Atlantic Council regarding maritime security and strengthened all operations related to the MSA and MSO.

#### Coordinated Maritime Presence (EU)

The EU initiated its Gulf of Guinea Strategy in 2014. The EU imports hydrocarbons by sea from this area that has been threatened by piracy (on high seas) and armed robbery (in territorial waters and especially in anchorages off the Nigerian coast), in addition to other illegal activities such as IUU fishing and the illicit trafficking of drugs, weapons, and people by

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<sup>31</sup> The frigate F86 “Canarias” assisted in the liberation of the ship “Abdullah” and its 23 crew members on April 15, which had been hijacked by pirates in Somali waters.

<sup>32</sup> Operation Ocean Shield was NATO’s contribution (2008-2016) to the fight against piracy in the region.

criminal organizations linked to terrorism, particularly in the Sahel. As its name suggests, the concept is based on EU Member States coordinating to ensure a sustained (ideally permanent) presence of EU vessels and to avoid overlapping deployments, thereby improving maritime security in the area. As with Operation ATALANTA, there is close cooperation between the EU and the West and Central African States (EU Council 2022). This concept is also being implemented in the Northwest Indian Ocean since February 2022 (CMP-NWI, Coordinated Maritime Presence in the Northwest Indian Ocean), aimed at supporting the regional maritime security architecture initiated with Operation ATALANTA.

#### Defense Diplomacy (Bilateral)

As mentioned earlier, the Ministry of Defense's concept promotes stability through the bilateral relations with partners on maritime security matters. This activity consists of deploying a Navy vessel along the west coast of the African continent to collaborate bilaterally with coastal states in mitigating maritime insecurity by means of improving or developing their capabilities. This deployed vessel "typically makes port calls in Mauritania, Gabon, Ghana, Senegal, and Cape Verde, and was later extended to other countries in the region" (EMAD, 2024).

#### Expeditionary Group "Dédalo-24"

The Expeditionary Group "Dédalo-24" began a new deployment on April 3rd that will end its mission in mid-July. It will cover both the Mediterranean Sea and the Atlantic Ocean. The maneuver involves "the ships of the Fleet's Amphibious and Projection Group: the "Juan Carlos I", the amphibious assault ship "Galicia", the Frigates "Blas de Lezo" and "Reina Sofía", the Reinforced Landing Battalion 1 of the Marine Corps, an embarked air unit composed of Harrier AV8 aircraft and helicopters, and the LCM-8 type landing craft of the Naval Beach Group" (Defense 2024). One of the Group's missions during its deployment will be to sail the Mediterranean, strengthening regional maritime security, especially on the southern Mediterranean coast, but also in the Alboran Sea and the Aegean Sea, supporting Operation Sea Guardian, and, in addition, will work on other activities with France, Italy, Greece, and Turkey.

## MARSEC (national)

“MARSEC is an exercise aimed at improving cooperation and coordination among organizations, associations, and government agencies with maritime jurisdiction” (Admiral of Maritime Action –ALMART– 2023). This year’s exercise will take place between May 13 and 24, and will develop fourteen maritime safety and security incident resolution scenarios to foster mutual understanding and coordination among the various national stakeholders with responsibilities for maritime security and who also develop maritime legislation, which is compiled in the literature that assigns the competencies of each participant. The last preparatory meeting for the exercise, led by ALMART and held in December of last year, was attended by a large group of stakeholders from the national maritime community with diverse responsibilities at sea: customs, ports, judicial police, state security forces, the private sector, various ministries, maritime rescue services, and other civilian public institutions.

There is quite a large number of ministries with jurisdiction in the maritime sphere, each with its own administrative legislation. A similar situation, in terms of hemispheric maritime security, can occur within a single state, and also across different countries with different national legal frameworks.

In addition to the national agencies that stem from ministerial departments, international organizations and agencies with maritime jurisdiction must also be considered. The Navy, and specifically the Maritime Action Force (FAM), frequently interacts with most of these agencies to enhance its knowledge of the maritime environment, an essential activity for maritime surveillance and security operations and activities. Finally, it is worth mentioning the Navy’s participation, usually through the FAM, in the European, Mediterranean, and North Atlantic Coast Guard Forums. These forums were established to create synergies and provide guidance on coast guard functions among countries that share maritime security concerns.

## Conclusions

The characteristics of the maritime shared global space have taught us that maritime security is not a purely national matter; it transcends our borders, making it a matter of paramount importance for international organizations such as NATO and the EU, as well as many other agencies and initiatives with a growing presence in this field. Our concept of maritime security has evolved in parallel with that of the EU, thanks to the effort made to unify criteria and solutions. An example of this effort at the national level is the development of a National

Maritime Security Strategy (ENSM) and, after more than 10 years, a unified definition of maritime security as agreed upon by the entire national maritime community (this definition appears at the beginning of this article). Today, many institutions, bodies, and agencies have jurisdiction at sea, both nationally and internationally. Therefore, I firmly believe that only through cooperation, collaboration, and a coordinated action among all these stakeholders will information be received in a timely manner to effectively address risks and threats at sea.

At the European level, Spain has demonstrated its leadership through Operation ATALANTA, making the sea in that region a safer maritime space. Spain's sustained effort for more than ten years has promoted the development of a regional maritime security architecture thanks to the support to the Maritime Security Centers in Seychelles and Madagascar. Spain also maintains a coordinated relationship with Operation AGENOR and now with Operation ASPIDES<sup>33</sup>, and regularly collaborates with CMF Task Forces 150 and 151. The operation forms part of the EU's comprehensive approach to the Horn of Africa, providing support to the EUCAP Somalia and EUTM Somalia missions. Furthermore, Spain maintains close ties with EU delegations in the region.

The operations of our Armed Forces have caused an impact and influence that transcends mere operational results. Their actions abroad not only contribute to raising public defense awareness but also project an invaluable image of Spain in the countries where they deploy—where our soldiers and sailors have become our best ambassadors. In addition, in the eyes of our partners, our Armed Forces, with their prudent approach, respect for international law, high professionalism, and consistent teamwork and communication skills, have positioned our country as a reliable ally and an essential contributor to international security and stability.

The deployment of our forces at sea allows us to better understand where risks and threats originate, and become more aware of the problems and better prepared to understand, assist, and find solutions that project stability. There is no doubt that promoting cooperation strategies, with the aim of mitigating geopolitical competition and building partnerships with allies and friends, will create a safer maritime environment for the defense of our values and our societies, especially in the High Seas, where jurisdiction is less clearly defined. I am convinced that multilateralism must take precedence when it comes to minimizing risks and

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<sup>33</sup> The EU's Operation ASPIDES is the response to the threat to navigation in the Red Sea posed by the Houthi rebels in Yemen.

combating threats at sea, especially since we already know that these threats can exceed the capacity of any single state.

No effort should be spared to ensure that defense remains, as stated in our National Defense Declaration, “a public service that contributes to maintaining the security, rights, and freedoms of its citizens in any situation.” I already suspect that the various activities I am undertaking within the IADB will help me strengthen interpersonal relationships and forge friendships among people from sister nations. I am already learning a great deal from you, from your concerns, your ideas, your experiences, and your analyses when addressing a strategic context like the current one. We are bound by a sense of belonging to the same community, which is also valuable for its diversity. In Spain, we see Europe and America as interconnected vessels, because we share so much.



### 5.3 Container Control Program – The Uruguayan Case

Doctor Rafael Zelesco Barretto, Naval War College of Brazil

Uruguay's Container Control Program was a national initiative aimed at preventing the use of shipping containers for transnational criminal activities, such as drug trafficking, arms and merchandise smuggling, and money laundering. Initially developed in the Port of Montevideo, one of the most important logistics hubs in the Southern Cone, the program represented an effort to harmonize maritime security with the efficiency of international trade, under international standards and with strong inter-agency coordination.



#### Context and diagnosis

Uruguay experienced a sustained increase in international maritime trade, which translated into new challenges in port security. Montevideo became a high-value transit point for criminal networks, especially for drug trafficking to Europe and West Africa, due to its strategic location and connectivity.

Given this scenario, the authorities identified the need for a robust control system that would allow them to anticipate, detect, and mitigate risks associated with the illicit use of containers, without hindering commercial operations.

## Program Objectives

- Strengthen the capacity for early detection of illicit cargo in containers.
- Implement a model based on risk analysis and operational intelligence.
- Promote inter-agency cooperation among customs, security forces, and international organizations.
- Improve the traceability and transparency of the port logistics chain.
- Comply with international container control standards, such as those established by UNODC and the World Customs Organization (WCO).

## Design and Implementation

The program was implemented with technical support from the Container Control Program (CCP), a joint initiative of UNODC and WCO.

The following key actions were developed:

- Creation of a Joint Port Control Unit, comprised of the National Customs Directorate, the National Naval Prefecture, and other agencies.
- Implementation of a risk analysis system to profile suspicious containers before they are physically opened.
- Adoption of non-intrusive scanning technology and digital tools for data cross-referencing.
- Ongoing training of operational personnel in inspection techniques, intelligence gathering, and international regulations.
- Coordination with private stakeholders (logistics operators, port terminals) to ensure the chain of custody.

## Results

The program substantially improved the efficiency and effectiveness of inspections at the Port of Montevideo. Key achievements include:

- Increased number and quality of seizures, especially of narcotics, through intelligence-led inspections.
- Reduced intervention and release times for non-suspicious containers, thanks to a selective approach.

- Recognition of the Uruguayan model as a benchmark in the region, presented at international forums as an example of hemispheric best practice.
- Compilation of reliable statistical data for strategic decision-making.

#### Lessons Learned

- The genuine integration of national agencies proved crucial to the program's effectiveness.
- Investment in ongoing training for operational personnel was a determining factor.
- The use of risk analysis technologies allowed for focused efforts and reduced operational interference.
- Cooperation with multilateral organizations strengthened the program's legitimacy and sustainability.
- Flexibility to adapt procedures to evolving operational risks was fundamental.

#### Contribution to the Best Practices Guide

Uruguay's Container Control Program provided a proven example of the national application of best practices in maritime security, particularly in the port sector, for this guide. Its experience demonstrated that:

- It is possible to implement a rigorous control system without hindering trade.
- Cooperation between the public and private sectors enhances the effectiveness of security measures.
- Risk-based, technology-driven, and training-oriented approaches are replicable in other ports in the hemisphere with similar levels of activity.

This case represents a replicable and adaptable alternative for other states in the hemisphere seeking to strengthen their port security and reduce the use of their ports for transnational criminal activities, all without compromising the competitiveness of international trade.

## 5.4 Vessel Traffic Service (VTS) at the Port of Callao

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The modernization of the Vessel Traffic Service (VTS) system at the Port of Callao is a prime example of institutional upgrading applied to maritime safety. Its development addresses a structural problem widely recognized in the world's major logistics hubs: the urgent need for technological updates given the rapid increase in maritime traffic, the expansion of port infrastructure, and the growing operational complexity in limited geographic spaces.

In Peru, the Port of Callao has historically handled over 70% of the country's foreign trade, making it a critical node for logistical continuity, domestic supply, and the country's economic competitiveness. Since 1989, TRAMAR has been the office in charge of vessel traffic control, under the jurisdiction of the Port Captaincy and the National Maritime Authority, which is responsible for coordinating arrivals, departures, maneuvers, and anchorages in this highly congested bay (DICAPI, 2023).

However, over the last decade, the growth of port activity outpaced the technical capabilities of the existing system, creating operational gaps that required structural intervention.

The institutional assessment identified three converging pressures:

First, degradation of radar surveillance.

The growth of infrastructure—gantry cranes, container stacks, and new metal superstructures—reduced the line of sight and generated false echoes and distortions on the radar screens, diminishing the effective detection and tracking capacity of targets in the inner harbor. This limitation directly impacted navigational safety.

Second, recurring adverse weather conditions.

The frequent presence of dense fog and low visibility caused periodic port closures and operational shutdowns, affecting operational safety and logistical efficiency.

Third, maritime safety risks in the anchorage area.

The area had a history of incidents, boardings and crimes against seafarers, as well as historical accidents linked to collisions and loss of life during conditions of reduced visibility, which highlighted the need to strengthen surveillance and response capacity.

The above factors, combined with the technological obsolescence of sensors and communication systems, confirmed that the existing traffic control service was insufficient to meet the increased volume and complexity of operations.

### **Objectives and Regulatory Alignment**

The implementation of the Vessel Traffic Service (VTS) was based on the international legal framework promoted by IMO (International Maritime Organization), which, through the SOLAS Convention (Regulation V/12), empowers States to establish these systems when traffic volume or risk level justifies it. Furthermore, Resolution A.1158(32) defines VTS as a service designed to enhance the safety of life at sea, increase navigational efficiency, and support environmental protection through timely information, assistance to vessels, and traffic management (IMO, 2021).

At the Port of Callao, the “Improvement and Expansion of the Project Callao Port Maritime Traffic Service (VTS Callao)” responds to these guidelines. It seeks to strengthen operational safety in a highly congested maritime environment, mitigate risks from low visibility, and reduce waiting times, while simultaneously increasing the operational and logistical efficiency of Peru’s main port hub. The system’s technical design is also aligned with IALA standards, which establish guidelines on architecture, equipment performance, operator certification, and operating procedures, guaranteeing interoperability and compliance with international best practices.

In this way, VTS Callao constitutes a comprehensive intervention that combines regulatory compliance, technological modernization, and institutional strengthening to ensure safer, more efficient, and more resilient maritime management (IALA, 2020).

### **VTS Callao System: architecture and governance**

The Vessel Traffic Service (VTS) at the Port of Callao is not an isolated capability, but is rather integrated into the Waterway Traffic Control System (SIMTRAC), a national platform managed by the General Directorate of Captaincies and Coast Guard (DICAPI) that coordinates surveillance, control, communications, and operational response resources across the country’s maritime, river, and lake environments. Within this framework, VTS Callao works as the specialized technological hub for managing high-density port traffic, centralizing information from radars, AIS stations, electro-optical sensors, and meteorological systems in a unified control center. This integration enables real-time situational awareness,

the ordering of arrival and departure maneuvers, the prevention of collision or grounding risks, and direct support for maritime safety and security operations.

In practice, the VTS becomes the port's "digital eye", providing permanent traceability of vessels and facilitating interagency coordination with coast guard units, port terminals and related services, thus contributing to logistical continuity and the effective protection of the national maritime domain.

### **Governance and operational management**

The Port of Callao's VTS is managed by the General Directorate of Captaincies and Coast Guard (DICAPI), a branch of the Peruvian Navy, which exercises the National Maritime Authority. Through TRAMAR and the Port Captaincy, arrivals, departures, and anchorages are coordinated on a daily basis and in a coordinated fashion, integrating port operators and maritime agencies.

The modernization was prioritized as a strategic investment by the State through the project titled "Improvement and Expansion of the Maritime Traffic Service of the Port of Callao".

### **Technologic Components and operational framework**

The system is based on an integrated architecture of radars, AIS, optronic sensors, VHF/HF communications, weather stations, and traffic management software, all controlled from a unified center. This configuration provides continuous surveillance, navigation support, and traffic management, improving safety and operational efficiency.

The key components, as documented, can be summarized as follows:

## Chart of main components of the VTS (Comprehensive View)

Subsystem	Main capabilities
Coastal Radar	Solid state X band (model SCANTER 5102), designed for surface surveillance/follow-up under adverse conditions; compliance with IALA recommendations for VTS equipment performance.
AIS and positioning services	AIS base stations for data reception/exchange; capable of handling AtoN virtual/synthetic; GPS differential provision (AIS corrections) to improve vessel position accuracy.
CCTV and electro-optical sensors	Sets of day/night and thermal cameras (long and mid-range) for target identification and follow-up, integrated into the traffic image.
Meteorological systems	Meteo-oceanographic data collection; transmission to vessels (via AIS message 8 in parts of the architecture), geared towards maneuver safety and decision making under low visibility.
Communications	Radio VHF/HF transmission communications for VTS-vessel coordination and related services.
VTS Software and recording	Control/management Software (Navi-Harbour) with sensor integration, recording models and reproduction; encrypted retention of operational information for extended periods (reference: 12 months).
Complementary environmental detection	Additional capacity integration (e.g., oil spills detection within Project scope announced by the vendor).

A key decision for the Port of Callao's VTS was its phased implementation. In early 2023, the first station, located at the Naval Academy, was put into operation with full control and management capabilities, allowing it to begin functioning before the system was fully operational. This "operate early, adjust with evidence, and scale" approach reduced adoption risks and ensured operational continuity.

The Project also had technological support with the incorporation of radars, thermal sensors, communications and analysis and recording platforms, to upgrade security and allow for stable operations even under low visibility conditions.

### **Implementation and operational challenges**

The VTS modernization of the Port of Callao faced technical, institutional, and social challenges. On the technical front, the expansion of the port created radar interference and reduced visibility, which required redesigning the surveillance architecture by adding new sensors and improving coverage. This was compounded by recurring dense foggy weather, which in turn involves non-cooperative detection, radar-AIS integration, and meteorological support. From an institutional perspective, VTS operation demands coordination among the General Directorate of Captaincies and Coast Guard, terminals, and logistics stakeholders, as well as clear regulatory frameworks.

In socio-environmental terms, the installation of towers and radars was accompanied by full compliance with international electromagnetic exposure standards to ensure public safety (ICNIRP, 2020).

### **Results and Impact**

The progressive implementation of the system in 2023 significantly improved situational awareness through the integration of radar, optronic sensors, and AIS, in addition to incorporating differential positioning, which altogether resulted in an increase in traffic control accuracy. In a port with a high concentration of arrivals, departures, and container traffic, these capabilities contribute to reducing risks, optimizing maneuvers, and sustaining safe operations even under low visibility. Likewise, a favorable trend was observed in security incident indicators, consistent with more effective surveillance and improved interagency coordination (APN, 2025).

A particularly relevant result was evident in the area of maritime security at the Bay of Callao. After years marked by recurring reports of robberies and collisions with vessels at anchor, recent records from the International Maritime Bureau showed a period without any reported incidents in the area, coinciding with the commissioning of the modernized VTS system and a comprehensive surveillance consolidation (IMB, 2024; IMB, 2025).

Although the improvement is the result of a joint effort that includes interagency patrolling and coordination, the availability of continuous monitoring, vessel tracking, and

early warning capabilities provided by the VTS, contributed to strengthening the deterrent effect and to a safer operating environment for navigation and seafarers.

### **Integration between the VTS and the Information Fusion Center – Peru (IFC)**

The Port of Callao's VTS was strengthened by means of its integration with the Information Fusion Center (IFC), an entity specializing in the analysis, correlation, and dissemination of relevant maritime information. This integration constitutes a best institutional practice that allows the transformation of data created by surveillance systems into useful knowledge for decision-making by the National Maritime Authority.

The IFC complements the VTS by merging information from multiple sources, including data from the VTS system itself, national and international platforms, satellite systems, and operational reports. This practice allows for the validation of events, reduces uncertainty, and creates a reliable and more complete common maritime picture, especially in contexts of high traffic density and operational risk.

Furthermore, the IFC develops a contextual analysis of detected events by incorporating historical background, behavioral patterns, and external alerts, which facilitates early identification of risks and the prioritization of activities. As a result, tangible reports are being issued, such as information bulletins and weekly and monthly analytical reports, directly supporting the conduct of operations and inter-agency coordination.

Finally, the VTS-IFC integration strengthens information exchange at the national and international levels, as well as analytical feedback to the VTS itself, contributing to improving monitoring and event response criteria. This integrated model consolidates more efficient, proactive maritime management focused on the safety of the national maritime domain.

### **Lessons Learned and Hemispheric Best Practices**

The Case of the Callao Port VTS demonstrates that the planning of these systems must begin with realistic assessments of the physical environment. Port expansion—cranes, stacking, and new superstructures—can degrade surveillance if the sensor architecture and deployments are not designed with technical performance criteria, in accordance with IMO and IALA standards (IMO, 2021; IALA, 2020).

Furthermore, phased deployment proved to reduce adoption risks and accelerate benefits by allowing for early operation, adjustment of procedures, and training of personnel under real-world conditions. Experience also confirms that the VTS constitutes a social-

technical capability, in which technology, training, procedures, and inter-agency coordination are equally crucial. Finally, social legitimacy and effectiveness in maritime security were strengthened through technical transparency, compliance with standards, and integration with patrols and information analysis, all of which enhance deterrence and response to illicit activities and emergencies.

### **Recommendations for sustainability and expansion**

The following is recommended to consolidate and replicate these capabilities: establishment of traceable performance indicators (safety, efficiency, and environmental protection); ensuring data interoperability among different agencies; maintaining redundancy, continuous maintenance, and technological updates; and also, incorporating cybersecurity measures that guarantee the integrity and availability of operational systems. The model applied in Callao, which was based on a precise technical diagnosis, international standards, gradual implementation, and local coordination, constitutes a replicable reference for other ports and maritime corridors in the region.



VTS Callao-Peru

## 5.5 Vital Routes of the 21st Century: Interoceanic Corridors and Maritime Security for the Americas

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The strategic role of interoceanic corridors in the Americas has gained increasing importance in the 21st century, due to their impact on international trade, maritime security, and regional economic integration. The region possesses some of the world's most important maritime and land routes, such as the Panama Canal, the trans-isthmian rail corridors of Mexico and Central America, and access routes to the Arctic. These spaces constitute key chokepoints for global trade and are, at the same time, potential points of vulnerability to transnational threats such as piracy, drug trafficking, terrorism, and cyberattacks on critical infrastructure. This article examines the role of these corridors, their governance and security challenges, and the opportunities they offer for renewed hemispheric cooperation.



### I. Interoceanic Corridors: Critical Infrastructure and Geostrategy

Interoceanic corridors are not merely physical infrastructures; they constitute true geoeconomic and geopolitical axes that connect markets, actors, and areas of influence. In Latin America, the Panama Canal remains the main interoceanic maritime passage, handling more than 5% of global maritime trade and up to 12% of U.S. trade (Rodrigue & Notteboom, 2023). Added to this are initiatives for “dry canals” or multimodal corridors, such as the

Isthmus of Tehuantepec in Mexico, and railway projects in Honduras, Colombia, and Brazil, which seek to offer alternative routes in the face of congestion, conflicts, or climate crises.

The growing demand for commercial connectivity has driven a significant expansion of these routes, but it has also created challenges regarding their sustainability, environmental impact, and protection against threats. The narrow margin for maneuver in passages like Panama or the Gulf of Fonseca highlights the urgent need for coordinated policies to guarantee the resilience of this infrastructure.

## II. Risks and Threats to Security in Interoceanic Corridors

Interoceanic corridors face a variety of risks that require multidimensional responses. “Chokepoints” are vulnerable due to their narrow geographic location and high traffic volume, making them potential targets for sabotage, armed conflict, or logistical blockades. The 2021 Suez Canal incident, when a single grounded vessel disrupted global trade for days, highlights the fragility of these waterways (Rodrigue & Notteboom, 2023).

In the Americas, the presence of transnational criminal organizations, coupled with unequal capacities among states to monitor and protect their maritime spaces, increases exposure to threats such as:

- Drug trafficking and transoceanic smuggling.
- Cyberattacks on ports and navigation systems.
- Irregular migration by sea.
- Hybrid threats (combined use of illegal and digital means).

These risks are not hypothetical. Recent reports show how the increased use of semi-submersible vessels and illicit routes has transformed interoceanic corridors into vectors of insecurity (UNODC, 2022).

## III. Hemispheric Cooperation and Shared Governance

The transnational nature of interoceanic corridors demands robust international cooperation. Organizations such as the Inter-American Committee on Ports, the International Maritime Organization, and mechanisms like the Cartagena Agreement on Regional Cooperation in Maritime Security are essential pillars of this governance.

Efficient governance must include:

- Early warning and joint monitoring mechanisms.

- Interoperability and search and rescue (SAR) protocols.
- Digital maritime coordination and control platforms (such as LRIT and AIS).
- Strengthening national and regional capacities through technical assistance and joint training.

Furthermore, the modernization of the corridors must align with international regulatory frameworks such as UNCLOS (1982), the ISPS Code, and the Critical Infrastructure Protection Code. These standards establish obligations regarding surveillance, environmental management, and protection against illicit acts that must be adapted to regional contexts.



#### IV. The Future of Interoceanic Corridors in the 2030 Agenda

The United Nations 2030 Agenda underscores the importance of resilient infrastructure (SDG 9), sustainable cities and communities (SDG 11), and life below water (SDG 14). Interoceanic corridors must evolve as tools for sustainable integration. This will require:

- Incorporating sustainability criteria into the design and operation of ports and interoceanic routes.

- Promoting the reduction of the carbon footprint of maritime and land transport.
- Protecting strategic coastal and marine ecosystems.
- Ensuring the participation of local communities in planning processes.

Successful integration of these corridors into the hemispheric development model implies recognizing them as shared strategic assets, where security, prosperity, and sustainability are intertwined.

## Conclusion

The interoceanic routes of the 21st century represent both vital arteries for global trade and critical arenas for security and international cooperation. In the American hemispheric context, ensuring their operation requires collaborative approaches, sustainable investments, and robust legal frameworks. The corridors are not mere routes; they are vital hubs of sovereignty, integration, and opportunity. Their future will depend on the collective capacity of the hemisphere's states to protect, modernize, and manage them as strategic common goods of the 21st century.

## 5.6 Drug Trafficking in the Hemispheric Maritime Environment: Risks and Opportunities in the 21st Century

### Contributions of the CICAD Expert Group on Maritime Drug Trafficking

The Expert Group on Maritime Drug Trafficking of the Inter-American Drug Abuse Control Commission (CICAD) of the Organization of American States (OAS) met on 10-12 September, 2024, in Port of Spain, Trinidad and Tobago, under the chairmanship of the Trinidad and Tobago Coast Guard. At this meeting, OAS member states, represented by 60 experts from national agencies responsible for combating maritime, river, and port drug trafficking, contributed to the development of the chapter on Maritime Drug Trafficking, intended for inclusion in the Inter-American Defense Board's (IADB) Best Practices Guide in Hemispheric Maritime Security.

Contributions were organized into six main thematic areas considered priorities in efforts against maritime drug trafficking: a) vessels used for maritime drug trafficking in the region; b) new markets and routes; c) innovations in the use of technology to combat maritime drug trafficking; d) legal frameworks and legal-operational coordination; e) interdiction methods; and f) international cooperation for the reduction of maritime drug trafficking. Each axis includes an overview of trends and the current situation, followed by the best practices identified by the Expert Group.

#### 1. VESSELS

##### Regional Overview:

Maritime drug trafficking is usually conducted by using a wide variety of vessels, depending on the region, the distance to be covered, the quantity and type of cargo transported by criminal organizations (COs), among other factors. The types of vessels predominantly used by criminal organizations include:

- "Go-fast" vessels: These vessels are the most frequently identified in reported drug trafficking cases. They can carry between 500 kilograms and 2 tons of cargo, with crews of 3 to 4 people. They have been designed for speedy short- and medium-distance journeys, making them especially suitable for transshipment operations between vessels and transit throughout the Caribbean. They are generally built of fiberglass, which reduces their cost and facilitates repairs and structural modifications intended to conceal illicit drugs (such as false

compartments). To avoid aerial detection, they are usually painted in light blue or gray tones, blending in with the sea surface.

- Self-Propelled Semi-Submersible Vessels (SPSS): These vessels have advanced significantly in recent years. Their construction is generally illicit and subcontracted by criminal organizations to third-party builders. They have evolved from rudimentary designs to low-profile, self-propelled, high-tech platforms capable of increasingly covering greater distances (SPSS have been identified traveling from Colombia to Australia without resupplying). There is also a growing trend toward their adaptation for unmanned, remote-control operations through the use of artificial intelligence and advanced signal reception systems. SPSS constitutes the second most frequently identified type of vessel in maritime drug trafficking cases, especially on the Pacific route, with cargo capacities of up to 7 tons, although organizations often prioritize efficiency over maximum capacity. A recent development has been the detection of SPSS with mixed cargo, transporting more than one type of drug, commonly cocaine and synthetic marijuana.

- Cargo ships: Used primarily for transporting large volumes of drugs hidden in containers. Traffickers take advantage of the high volume of trade at major ports. Some countries, particularly those with high port activity such as Chile, Panama, Peru, and the Dominican Republic, identified that up to 80% of seized drugs are transported via these types of vessels. Methods of container contamination include rip-on/rip-off, false compartments, and the use of refrigerated containers, among others.

- Fishing vessels: These vessels conceal illicit activities under the guise of legitimate fishing operations. They often transport smaller quantities of drugs mixed within legal cargoes, making detection difficult, and primarily serve as intermediaries to support the transport of shipments initiated by other means. They also perform logistical roles such as the supply of fuel, spare parts and food to other vessels involved. In addition, they also perform as surveillance platforms to alert traffickers about the presence of authorities during pollution processes, and serve as decoys by carrying minimal loads to distract law enforcement.

- Recreational vessels: This category includes yachts, sailboats, catamarans, jet skis, and other vessels intended for leisure. While they typically cover short distances, there have been cases of recreational craft capable of long-distance voyages, connecting the Americas with Europe.

### Best practices identified:

- Developing specific regulatory frameworks for semi-submersible vessels: Some Member States have adopted legislation specifically targeting the illicit construction and use of semi-submersible vessels for drug trafficking. These regulations allow for the investigation, arrest, and prosecution of third-party builders, thus disrupting the criminal chain.
- Investing in or promoting partnerships to acquire technology for SPSS detection: Identifying SPSS in operation is particularly complex due to its technological sophistication. Therefore, it is essential to invest in advanced equipment to detect them from the construction phase or to establish partnerships with organizations or countries that possess such technologies. Aerial patrols with thermal sensors have proven very effective, given that SPSS can be constructed in areas far from the coast and then moved to launching points, and it is known that there is a link between illicit airstrips and SPSS construction sites.
- Strengthening container inspection protocols: Implementing rigorous inspection protocols significantly reduces the risk of drug trafficking via cargo ships. This includes the use of advanced scanning technologies, random inspections of containers traditionally considered low-risk, and close coordination among customs, port, and law enforcement authorities. Training personnel to identify concealment techniques also increases detection capabilities.
- The promotion of registration and regularization of fishing vessels: Programs aimed at registering and regularizing fishing vessels, in coordination with other government agencies and in accordance with national regulations, especially in coastal regions with a high incidence of drug trafficking, have yielded positive results. These initiatives improve the situational awareness of the authorities and facilitate the detection of suspicious activities, such as frequent name changes.

## 2. NEW ROUTES AND MARKETS

### Regional Overview:

Illicit drug trafficking is a dynamic and constantly adapting phenomenon. In recent years, significant changes have been recorded in the routes used by criminal organizations (COs), driven primarily by evolving global consumption patterns. The increase in cocaine and synthetic drug use in Europe, Asia, Oceania, and South America has led COs to diversify and adjust their trafficking routes, expanding their presence in new markets without abandoning traditional flows to the United States.

While cocaine production is currently at record levels in countries like Colombia, Ecuador, Peru, and Bolivia, the sustained growth in synthetic drug use—including synthetic marijuana, commonly known as “creepy”—has forced traffickers to use the same routes for different types of substances, incorporating mixed cargoes on vessels and increasing the trafficking of chemical precursors.

Two major trafficking routes have been identified originating in Colombia and the Andean region:

- 1) A route across the Pacific Ocean, with destinations to the United States and Europe (via Mexico, Central America, and the Panama Canal), as well as South America and Oceania;
- 2) A route from the Atlantic coast, through the Caribbean, with connections to Europe, Miami, and Africa. Increasingly, criminal organizations have resorted to using rivers not only for drug trafficking but also for the movement of aircraft subsequently used in illicit trafficking. In this regard, the Paraná-Paraguay Waterway is of particular importance, as it directly connects ports located in or near producing countries, passing through Brazil, Paraguay, Uruguay, and Argentina to the Atlantic Ocean, thus providing a direct route to Europe.

Furthermore, ship-to-ship operations on the high seas are not uncommon, exploiting legal gray areas and low visibility to contaminate cargo ships or transfer illicit substances from semi-submersibles to other types of vessels.

The use of third-country ports as intermediate points for shipping drugs in containers has become a recurring strategy, aimed at reducing the risk of inspection at final destination ports, where shipments originating directly from producer countries are typically subject to stricter controls. Similarly, shipments that traditionally departed directly from South America to Europe are increasingly being redirected through West Africa, taking advantage of institutional weaknesses and seeking to evade detection.

Another emerging trend is the use of Caribbean territories administered by European countries, such as Martinique and Guadeloupe, as entry points to the European continent. In these cases, authorities have detected the maritime entry of drugs to these islands for subsequent transport by air to continental Europe, taking advantage of the high air and commercial connectivity.

Criminal organizations also exploit social and political phenomena to enhance their operations, such as the Venezuelan migration crisis—using migrants for the overland transport of drugs to boarding points—and the political instability in Haiti.

Best practices identified:

- Inter-agency information sharing: It is essential to establish effective and timely information-sharing mechanisms among countries and relevant government agencies (e.g., immigration, police, and naval forces) and to stay updated on the trends, routes, and tactics employed by criminal organizations, thus optimizing the allocation of human and material resources.
- Deployment of resources on new routes: Since traffickers constantly adapt their routes, it is essential to adjust the deployment of operational capabilities not only to coasts and ports, but also to rivers, paying special attention to vessels with destinations to third countries identified as links in the routes to final markets.
- Conducting interdictions and joint operations on high seas: In accordance with international maritime law and in coordination with relevant stakeholders, joint operations are recommended up to 600 nautical miles from the coast, particularly in areas where illicit transshipment activities have been identified.
- Avoiding exclusive reliance on the origin of cargo for inspections: Given the increasing use of third-country ports to conceal the true origin of shipments, customs and control authorities must adopt inspection approaches based on multidimensional risk analysis, incorporating multiple indicators.
- Strengthening collaboration with the commercial shipping industry: Structured dialogue with the private sector, particularly the maritime transport industry, allows for the identification of common challenges and best practices in cargo security. Exploring formal agreements and audit programs or partnering with trusted companies helps reduce the vulnerability of logistics chains.
- Expanding cooperation with emerging markets: Strengthening alliances with countries that are consolidating as emerging illicit drug markets through the exchange of intelligence, best practices, and joint capacity-building is key to anticipating threats.

### 3. INNOVATIONS IN THE USE OF TECHNOLOGY

#### Regional Overview:

Today, technology plays a central role in both maritime drug trafficking and the strategies implemented by the member states of the Organization of American States (OAS) to counter it. Criminal organizations (COs) have significantly increased their use of unmanned and high-tech vessels for drug transport, incorporating longer-range global positioning systems (GPS), more powerful signal receivers, and remote-control platforms that allow them to operate self-propelled semi-submersible vessels (SPSS) over long distances.

Likewise, criminal organizations are increasingly using artificial intelligence to design routes that avoid regular patrol areas or likely interdiction operations by authorities. In parallel, there has been an increasingly sophisticated use of techniques to manipulate Automatic Identification Systems (AIS), which makes it more difficult to detect, track, and hold accountable the vessels involved in illicit activities.

#### Best Practices identified:

- The promotion of cybersecurity training: Implementing specialized cybersecurity training programs for maritime security staff to improve their understanding of the threats associated with the use of advanced technologies by criminal organizations. This type of training contributes to the identification of manipulated or compromised AIS systems, as well as the detection of intrusion attempts or technological sabotage.

- The increasing use of unmanned aerial vehicles (UAVs) on drug trafficking routes: Considering resource limitations and the high costs associated with conventional air patrols, especially in Caribbean states with extensive maritime areas, the use of drones is an effective alternative for maritime surveillance. Joint cooperation experiences using long-range drones, such as the Q9, have demonstrated positive results in some Caribbean countries.

- The establishment of data science teams for combating drug trafficking: Investment in human resources specialized in the organization, analysis, and interpretation of large volumes of data from maritime intelligence has shown positive impacts on the detection of illicit activities. Analysis of navigation data allows for the identification of anomalous vessel behavior, such as sudden route deviations, prolonged stops in high-risk ship-to-ship zones, or unusual speed variations.

- The investment in technological tools for container inspection: The incorporation of non-intrusive scanning technologies, chemical detection devices, and advanced surveillance systems substantially strengthens the capabilities of port and maritime authorities to identify illicit cargo more quickly and accurately. The use of thermal sensors, sonar, and other specialized equipment adapted to the challenges of maritime drug trafficking is particularly relevant. In this area, cooperation with international organizations and countries with greater technological capabilities can facilitate access to these resources.
- Not depending exclusively on automation or artificial intelligence: While automation technologies and artificial intelligence can significantly enhance the capabilities of maritime security agencies, it is crucial to maintain a balanced approach that fits in human judgment with technological solutions. Over-reliance on automated systems can create vulnerabilities, especially if criminal organizations exploit technical gaps or if the systems fail to detect complex human behavior indicative of illicit activities.

#### 4. LEGAL FRAMEWORKS AND LEGAL-OPERATIONAL COORDINATION

##### Regional Overview:

One main challenge member states of the Organization of American States (OAS) currently face in the fight against maritime drug trafficking lies in effective coordination with the judicial sector, a situation exacerbated by divergent interpretations of international maritime treaties and conventions. These differences can hinder cooperation both between countries and agencies within the same state, leading to fragmented responses to organized crime.

Furthermore, the existence of unclear or practically inapplicable judicial procedures regarding the management of intercepted vessels or detained individuals—coupled with deficiencies in preserving the chain of custody, collecting evidence, and protecting crime scenes—significantly weakens maritime interdiction efforts. These institutional vulnerabilities are exploited by criminal organizations (COs) to maximize the success of their operations.

For example, when the national legislation of a country requires a patrol unit to return to port immediately after seizing whatever quantity of drugs, criminal organizations may deliberately choose to sacrifice small loads, creating a temporary vacuum of state presence that facilitates subsequent operations in the same area.

Similarly, it has been observed that criminal organizations register their vessels under flags that impose greater procedural obstacles on foreign boarding and interdiction authorities,

complicating effective law enforcement. Addressing these challenges requires a comprehensive approach that strengthens regulatory frameworks and promotes a sustained culture of cooperation and information sharing among all stakeholders.

Best practices identified:

- Promote the creation or adaptation of interdiction procedural frameworks: It is essential to have realistic and operationally viable procedures for bringing detainees before the competent authorities, consistent with operational needs. In this regard, the use of virtual hearings for individuals detained in operations conducted far offshore was highlighted.
- The establishment of clear cooperation mechanisms with the judicial system and other competent agencies: It is key to create or update intelligence legislation that defines procedures and channels for information exchange among naval forces, public prosecutors, and other involved agencies to ensure the effectiveness of investigations and judicial processes.
- Staff training in legal frameworks and evidence handling: Developing legal and evidence preservation skills helps prevent procedural errors that could jeopardize the prosecution of cases. Multinational training also helps prevent the improper handling of evidence in joint operations.
- The conduction of comparative maritime law exercises: Comparative analysis of maritime interdiction laws and regulations among countries allows for the identification of gaps, best practices, and opportunities for regulatory harmonization, particularly regarding jurisdiction, boarding powers, and interagency coordination. These exercises can be developed within the framework of regional initiatives, such as the Maritime Drug Trafficking Expert Group.
- The promotion of innovative legislation aimed at identifying practices indicative of drug trafficking: Developing regulations that penalize conduct such as the manipulation, deactivation, or spoofing of Automatic Identification Systems (AIS) creates a legal framework that enables the investigation and interdiction of suspicious vessels.
- The promotion of asset recovery in interdiction cases: Beyond drug seizures and arrests, it is strategic to advance the seizure of other assets linked to criminal organizations, such as vessels, financial resources, and weapons, thereby strengthening the investigation of criminal structures.

## 5. INTERDICTION AND OPERATIONAL METHODS

### Regional Overview:

Interdiction operations are a core purpose of maritime security agencies. However, as maritime, riverine, and port drug trafficking becomes more sophisticated—driven by highly lucrative markets and rapid technological advancements—traditional interdiction methods find it increasingly difficult to respond as expeditiously as criminal organizations (COs). These organizations exploit institutional vulnerabilities, legal loopholes, and political instability in certain regions to increase their efficiency.

Furthermore, the high profit margins associated with drug trafficking make it difficult to dismantle criminal organizations solely through interdiction. For example, one kilogram of cocaine, with an approximate value of US\$2,000 in Colombia, can reach prices of up to US\$265,000 in Australia. Dismantling the financial bases of these organizations would require intercepting extremely high percentages of the total drug flow, a threshold that is practically unattainable with the resources currently available.

In addition, criminal organizations have become increasingly creative in conceiving new drug concealment and transportation methods. Recent cases show the use of unconventional vessels, such as livestock transport ships, besides traditional containers. Traffickers know that a suspicious stopover at sea can be detected through maritime intelligence analysis; therefore, they now follow techniques to contaminate cargo ships without needing to stop them. Added to this is the expansion of synthetic opioid trafficking, which demands specialized detection and handling capabilities from maritime security forces.

### Best practices identified:

- The expansion of cooperation through intelligence sharing and joint operations: Existing bilateral and multilateral cooperation mechanisms, such as joint interdiction campaigns and intelligence-sharing platforms, have demonstrated positive operational impacts. Initiatives such as Operation ORION and intelligence exchanges through mechanisms like MAOC-N are relevant examples. Establishing permanent focal points within naval forces allows for a timely response to information-sharing needs.
- The creation of specialized interagency teams or task forces focused on maritime drug trafficking: Setting up multi-agency structures facilitates the planning and execution of

operations within common and functional regulatory frameworks among agencies, and can be the first step toward long-term interagency partnerships.

- Paying attention to vessels that remain in areas near jurisdictional boundaries: Criminal organizations often exploit the legal complexities associated with interdiction on high seas, remaining close to jurisdictional areas to conduct illicit ship-to-ship operations.

- Maintain up-to-date knowledge of vessel registration regimes and boarding regulations in third countries: Criminal organizations tend to register their vessels under flags with simplified procedures or lower levels of control, as well as under jurisdictions that impose greater restrictions on boarding by foreign authorities. Knowledge of these frameworks allows for better operational planning.

- Remaining updated on related crime trends: Criminal organizations often diversify their activities using their drug trafficking structures to commit other crimes, such as arms trafficking, human trafficking, or smuggling. Knowledge of these trends allows for targeting criminal networks from a broader perspective.

- Providing specialized training in the handling of chemical drugs and precursors: The increase in synthetic drug trafficking requires that maritime security personnel have specific training in the identification and safe handling of chemical substances and precursors, strengthening operational safety and the effectiveness of interdictions.

## 6. INTERNATIONAL COOPERATION TO COUNTERACT MARITIME DRUG TRAFFICKING

### Regional Overview:

International and regional cooperation is widely recognized as a fundamental pillar for effectively combating maritime drug trafficking, given the transnational nature of criminal networks operating in maritime and riverine environments. Multilateral initiatives have caused a significant impact through strengthening national capacities, closing institutional gaps, and improving operational coordination among states.

This cooperative approach is supported by various frameworks promoted by international organizations, such as the Inter-American Drug Abuse Control Commission (CICAD) of the Organization of American States (OAS) and the United Nations Office on Drugs and Crime (UNODC), which urge information sharing, joint operations, and capacity-building.

Examples of recent coordinated multi-country operations are Operation ORION and the Caribbean Basin Initiative (CBI), which have shown that national initiatives are more effective when integrated into collective action frameworks. Through ongoing communication mechanisms, shared operational protocols, and up-to-date intelligence, states are better positioned to respond to the evolving tactics of criminal organizations.

Best practices identified:

- Increasing joint operations: The regular organization of multinational operations, such as Operation ORION, maximizes the impact on trafficking routes by concentrating resources, capabilities, and intelligence.
- Understanding and utilizing existing regional cooperation mechanisms: Leveraging platforms such as CICAD, the Regional Security System (RSS), the Maritime Analysis and Operations Center–Narcotics (MAOC-N), and the Seaport Cooperation Project (SEACOP) strengthens national capabilities and reduces duplication of effort.
- Establishing focal point networks for information sharing: Designating points of contact within naval forces and security agencies facilitates the timely exchange of intelligence and expedites responses to urgent situations.
- Establishing bilateral and multilateral agreements: Formalizing cooperation agreements allows for defining clear protocols for managing shared spaces, the joint use of surveillance technologies, and the execution of coordinated operations.
- Strengthening training and capacity-building programs: Joint training initiatives and the exchange of experiences contribute to improving the interoperability and effectiveness of responses to maritime drug trafficking.
- Advancing the harmonization of legal frameworks for cross-border operations: Regulatory convergence in maritime interdiction reduces legal loopholes and facilitates rapid authorizations for boarding and inspection, limiting the ability of criminal organizations to exploit legislative differences.

## 7. CONCLUSION

The discussions held on Maritime Drug Trafficking within the framework of the OAS Group of Experts reflect a shared commitment among member states to address the growing challenges of drug trafficking in maritime and riverine environments in a coordinated manner.

The Group contributed to a comprehensive understanding of the phenomenon by addressing key aspects such as the types of vessels used, emerging routes, the incorporation of innovative technologies, legal frameworks, interdiction methods, and international cooperation.

The best practices herein identified constitute valuable input for the design of public policies and operational strategies aimed at strengthening hemispheric maritime security. In this context, the Best Practices Guide in Hemispheric Maritime Security, developed by the Inter-American Defense Board, will benefit from these contributions, which will support States in their efforts to move toward a safer, more cooperative, and more resilient hemisphere.

## Glossary of Common Terms in Hemispheric Maritime Security

### A

**Action Plan**<sup>34</sup>: Is a commitment undertaken by a State in obligation to its population, or a commitment signed by several States, or even a commitment made by a State through an international organization. Each action plan aims to address the situation of a specific area and describes the specific measures and timelines that should lead to the desired outcome.

**Armed Forces**<sup>35</sup>: The Armed Forces are organized, hierarchical, and disciplined state institutions responsible for defending sovereignty, territorial integrity, and maintaining internal order in extraordinary situations. These organizations perform strategic functions through the use of human, material, and technological resources, within a framework regulated by national and international law.

**Asymmetric Conflict**<sup>36 37</sup>: An asymmetric conflict is a confrontation between unequal actors, since one of the adversaries does not even have organized forces comparable to those of the opponent. It is also characterized by the asymmetry of strategies and procedures, demonstrating a disparity in "power" or forces, resources, technology, and number of combatants, among other factors.

**Asymmetric Threats**<sup>38</sup>: These are threats created by unequal or unconventional means and characterized by their unpredictability. They attempt to negate the adversary's strengths while simultaneously exploiting their vulnerabilities with disproportionate effects. These are used by a state or non-state actor who, even if potentially inferior, can inflict serious damage.

### C

**Challenges**<sup>39 40</sup>: Challenges are obstacles that do not constitute a threat or vulnerability. They lead to the adoption of actions conducive to improvement. To lead events and anticipate challenges, it is essential to continuously improve tools, processes, and resources, as well as the use of foresight.

**Collective Defense**<sup>41 42</sup>: Collective defense is the set of measures adopted by a group of States to ensure the defense of common interests against an aggressor or coalition of aggressors. Collective defense is contemplated in the Charter of the United Nations, Article

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<sup>34</sup> Action plans with armed forces and armed groups. n.d. Office of the Special Representative of the Secretary for Children and Armed Conflict. [online]. In: un.org.

<sup>35</sup> Canelo, P. V. (2015). The breakdown of military power in Argentina: the Armed Forces during the presidencies of Galtieri, Bignone, and Alfonsín (1981–1987). CONICET Digital. Retrieved from <https://ri.conicet.gov.ar/handle/11336/73599>.

<sup>36</sup> BALLESTEROS MARTÍN, Miguel. Á. s.f. English, Spanish French168 Terrorism as an asymmetric conflict. VIII Conference on Geopolitics and Geostrategy. Spain. Spanish Institute of Strategic Studies, Ministry of Defense.

<sup>37</sup> RETANA YARTO, Jorge. 2021. Asymmetric warfare against transnational crime in Mexico: a binational failure. [online].

<sup>38</sup> Molina Jhonson, C., & Navarro Mesa, M. (2012). The Management of National Defense: History, Present, and Future (p. 133). Santiago: National Academy of Political and Strategic Studies. Institutional Issues. 2014. INADE Magazine. Quito. National Institute of Defense, Ecuador.

<sup>39</sup> CARACUEL RAYA, María Angustias. op.cit. p. 7.

<sup>40</sup> MARTÍN CUBEL, Fernando. 2013. *ESN-2013: National Security Proposal. Spain. Spanish Institute for Strategic Studies, Ministry of Defense. p. 9*

<sup>41</sup> *Fundamentals of Power. 2022. Rio de Janeiro. Higher War School, Department of Studies.*

<sup>42</sup> Chapter VII: Action in case of threats to the peace, breaches of the peace or acts of aggression (Articles 39–51). n.d. United Nations. [online]. In: un.org.

51, whose concept consists of actions or means to protect international security, provided that these actions are justified under legitimate self-defense.

**Collective Security**<sup>43</sup>: Corresponds to a commitment agreed upon by a group of states united to confront threats that affect any of its members. Political security perspectives are aligned with those of others, balancing different interests in solidarity, mitigating uncertainties, and discouraging aggressive commitments. Its special characteristic is that an attack against one of its members is considered an attack against all its members.

**Common Good**<sup>44</sup>: This is an abstract end that considers the satisfaction of those spiritual and material conditions that society, or the group of people that make up a state, have decided that satisfy their personal and social ambitions.

**Conduct of Defense**<sup>45</sup>: The conduct of defense is the process by which decisions are made to direct the defense of the country. This flows through a regulated and systematized channel based on a specific organizational structure, from the President of the Republic down to the strategic or strictly military level. Due to its repercussions, the Head of State is responsible for its governance and administration. The conduct of defense, in turn, is stratified into levels: Political – Strategic – Operational – Tactical.

**Conflict**: A conflict is a situation of opposition or disagreement between two or more parties, whether individuals, groups, or organizations, that arises as a result of incompatible interests, objectives, values, or needs. This term encompasses everything from minor differences to significant confrontations that can have personal, social, or structural implications.

**Conventional Threat**: This refers to any challenge or risk to security emanating from traditional or state armed forces employing methods, strategies, and technologies of warfare recognized and regulated by international law.

**Cooperative Defense**<sup>46</sup>: Cooperative defense is a security concept that emphasizes the preventive component of potential disputes.

**Cooperative Security**<sup>47</sup>: Is a commitment agreed upon by two or more states that join together to act preventively against common threats. Through this commitment, states agree to different levels of cooperation, acting according to their particular interests. They seek to increase their security without compromising the security of others and to address, through cooperation, all security issues related to military, economic, social, environmental, cultural, and humanitarian matters.

**Crisis**<sup>48</sup>: This usually represents the phase prior to a conflict. It is a national or international situation in which there is a threat to the values, interests, or priority objectives of the affected parties. A situation in which the competent authorities of a sovereign state have reasonable grounds to believe that there is a serious and direct threat to people, property, infrastructure, or institutions. Its intensity is usually limited and seeks to alter the status quo without reaching the point of no return, unless it was planned. It involves various actors and arises from

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<sup>43</sup> MOLINA JHONSON, Carlos. And NAVARRO MESA, Miguel. op.cit. p. 178.

<sup>44</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 133.

<sup>45</sup> BUZAN, B. y WAEVER, O. Regions and Power. The Structure of International Security. Cambridge University Press. Editorial Board. p. 138 y 139.

<sup>46</sup> HARDY VIDELA, David. 2003. Cooperative security: An evolving strategic security model. Revista Marina. Chile. pp. 1–16.

<sup>47</sup> MOLINA JHONSON, Carlos. And NAVARRO MESA, Miguel. op.cit. p. 178.

<sup>48</sup> HABERMAS, Jürgen. 1988. Legitimation Crisis. Translated by Thomas McCarthy. Cambridge. UK. Polity Press, pp. 2–3.

internal or external factors. It is characterized by the use of all factors of national power, including military force, in a conditional manner.

**Critical Infrastructure**<sup>49 50 51</sup>: Critical infrastructure encompasses all essential assets and facilities, whether physical or services, that are indispensable, strategic, and of public utility. These assets provide basic services, their operation is indispensable, and there are no alternative solutions; therefore, their disruption or destruction would have a serious impact. Consequently, critical infrastructure includes the generation, transmission, transport, production, storage, and distribution of basic services and supplies for the population, such as energy, gas, water, and telecommunications.

**Cyber**<sup>52 53 54</sup>: The cyber realm refers to the entire space in which social networks, systems, and data are used as facilitators or tools to generate real effects on physical targets. Cyber is characterized as a space created by human beings, having a global character, and the internet as its central element.

**Cyber Attack**<sup>55 56 57</sup>: A cyberattack refers to acts of cybercrime, cyberwarfare, or cyberterrorism whose purpose is to create greater uncertainty in the security and control model of an organization or nation, or to reveal blind spots and hidden weaknesses in the security implementations that companies and nations have.

**Cyber Defense**<sup>58 59 60 61 62</sup>: It is a branch of cybersecurity characterized by a set of technical and tactical activities aimed at preserving the security of a state's and its institutions' information systems and networks. It is concerned, from the outset, with preventing cyber threats from exploiting vulnerabilities. It requires a high level of specialization and dedication. It is the military capability that allows for defensive or offensive action against threats or attacks carried out in and through cyberspace when these affect national security, strategic, operational, and tactical planning.

**Cyber Threat**<sup>63 64 65</sup>: Is an activity carried out in cyberspace by a human or non-human actor that represents some degree of danger to the following pillars: confidentiality, availability, integrity, and legality. It unfolds as a potential external or internal source of harm. The result is

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<sup>49</sup> Glossary of cybersecurity terms: A beginner's guide for businesspeople. op.cit. p. 51.

<sup>50</sup> Institutional Issues. 2014. op.cit. p. 17.

<sup>51</sup> NATIONAL CONGRESS LIBRARY (BCN). 2023. Law No. 21,542, Critical Infrastructure.

<sup>52</sup> BARRÍA HUIDOBRO, Cristian. op.cit. p. 2.

<sup>53</sup> ARREOLA GARCÍA, Adolfo. 2021. *Cyberspace: The Wild West?*. Peruvian Strategic Study Center.

<sup>54</sup> PÉREZ MÁRQUEZ, Fernando. 2019. *Cyber Risks and Cybersecurity*. Mexico. *Treasury and Public Credit*. Work Notebook N° 181. p. 6.

<sup>55</sup> PÉREZ MÁRQUEZ, Fernando. op. cit. p. 15.

<sup>56</sup> CANO M, Jeimy J. 2020. *Cyberattacks*. Technology and Social Equity Magazine N° 157. Colombia. p. 67-74. ISSN 0120-5919.

<sup>57</sup> OROZCO RESTREPO, Gabriel A. 2015. *Securitization in times of globalization. Elements for analysis in the Andean region*. Quito. *Cutting-edge Digital Library for Social Science Research*.

<sup>58</sup> Institutional Issues. 2014. op.cit. p. 17.

<sup>59</sup> BARRÍA HUIDOBRO, Cristian. op.cit. p. 9.

<sup>60</sup> CASTILLO FUERMAN, Ernesto. 2021. *Sectoral policy on cyber defense: an urgent necessity*. Lima. *Center for Strategic Studies of the Peruvian Army*.

<sup>61</sup> *Institutional Issues*. 2014. op.cit. p. 17.

<sup>62</sup> VIANA RODRIGUES, Victor. s. f. *NAÇÃO E DEFESA*. Portugal. National Defense Institute. N°133. p. 156.

<sup>63</sup> Institutional Issues. 2014. Magazine INADE. Quito. National Defense Institute.

<sup>64</sup> DÍAZ RUIZ, Joaquín. 2016. *Ciberthreats Terrorism of the future?*. Spain. Spanish Institute for Strategic Studies.

<sup>65</sup> BARRÍA HUIDOBRO, Cristian. 2019. *The Dimension of Cyberspace: A Cybersecurity Proposal*. Santiago. *Academy of Political and Strategic Studies. Working Paper No. 1-2019. p. 7*.

the potential for an attack that can cause considerable damage to the technological infrastructure of a country or its inhabitants.

**Cybersecurity**<sup>66 67 68</sup>: Cybersecurity is an all-encompassing concept, comprising both cyber defense and cyberattacks. It is a mechanism that allows for the preservation of the confidentiality, integrity, and availability of information in cyberspace. It refers to the process of protecting information or information systems through the prevention, detection, and response to one or more cyberattacks.

**Cyberspace**<sup>69</sup>: Global domain within the information environment consisting of the interdependent network of information systems infrastructures that include the Internet, telecommunications networks, computer systems, and embedded processors and controllers.

## D

**Defense**<sup>70 71 72</sup>: Defense is a natural mechanism by which an organization protects itself from external aggression. Therefore, the defense of a State is understood as the set of measures, provisions, and actions that the State generates, implements, and adopts in a comprehensive and permanent manner, developed in both external and internal spheres. Every natural and legal person is obligated to participate in national defense, although it is the responsibility of the State to provide it.

**Defense Book**<sup>73 74</sup>: This document outlines the essential aspects of defense and military policy. It describes topics related to National Security and Defense, as well as the objectives and policies derived from them. It also addresses defense in relation to the international environment, its organizations, missions, and responsibilities, and accounts for budgetary expenditures in this area, according to the challenges and tasks assigned to defense. It is a dissemination document.

**Defense Policy**<sup>75</sup>: This is the set of principles and criteria by which the State guides its defense function with a view to preserving the sovereignty and integrity of the territory, thus contributing to the achievement of other national objectives. It provides the general guidelines for structuring, coordinating, and harmonizing the State's efforts aimed at confronting the obstacles, risks, and threats that third parties may pose against the national interest. Defense policy is a State policy insofar as it requires transcending political circumstances and the projects and actions of successive governments. Furthermore, as a State policy, it is a public policy and, therefore, must be subject to the general conditions of formulation, implementation, and verification of other public policies, including being subject to citizen observation and opinions.

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<sup>66</sup> BARRÍA HUIDOBRO, Cristian. op.cit. p. 15.

<sup>67</sup> PÉREZ MÁRQUEZ, Fernando. op.cit. p. 7.

<sup>68</sup> INTER-AMERICAN DEFENSE BOARD. s.f. *Cyberdefense*. [on line].

<sup>69</sup> NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. 2012. *NIST Special Publication (SP) 800-30, Revision 1, Guide for Conducting Risk Assessments, Appendix B*, p. 95.

<sup>70</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 141.

<sup>71</sup> NATIONAL DEFENSE MINISTRY 2006. White National Defense Paper. Peru. p. 3

<sup>72</sup> United States of America. 2010. *National Security Strategy*, The White House.

<sup>73</sup> MINISTRY OF NATIONAL DEFENSE. 2006. op.cit. p. 3.

<sup>74</sup> SOTO SILVA, Julio. 2016. Elements for the preparation of a book on National Defense. *Journal of Studies in International Security*. Chile 2(1), p. 57–100.

<sup>75</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 175

**Democratic Security**<sup>76 77</sup>: The overall objective of Democratic Security is to reinforce and guarantee the rule of law throughout the territory by strengthening democratic authority, deepening peace, cooperation, and integration at the regional level, and promoting autonomy and independence at the international level.

**Deterrence**<sup>78</sup>: Deterrence, as an action, refers to inducing someone to abandon an idea or purpose of doing something. In the military sphere, deterrence aims to persuade potential adversaries not to carry out hostile actions against our citizens and interests, thus preventing an unwanted escalation of a crisis that could lead to an armed conflict. Alternatively, it is a state's strategy to inhibit a potential adversary from acting coercively against its vital interests and to influence them to adopt non-coercive courses of action. As a central element, this requires sufficient resources and, especially, a clear and credible commitment to using them.

**Domain**<sup>79</sup>: The environment or categories in which security and defense activities take place. These include air, land, sea, space or outer space, and cyberspace.

## E

**Economic Security**: Economic security for the population can be understood as job security, meaning that people have the assurance of being able to keep their jobs for an extended period. This requires a guaranteed basic income, resulting from productive and paid work, or from a social security system financed with public funds.

**Environmental Security**: This refers to being able to rely on a healthy physical environment, free from the deterioration of local ecosystems, water scarcity, among other things.

**Extended Security**<sup>80</sup>: Is a concept that expresses a comprehensive response by the State to the security challenges it faces in the era of globalization. Currently, security risks are interconnected; globalization makes distant threats seem immediate and increases their rate of spread. The rigid boundaries between internal and external security are being overcome, and States are seeking ways to use their resources more effectively and invest their financial resources more efficiently.

## F

**Fifth Generation Conflict**<sup>81</sup>: Conversely, a fifth-generation conflict or war emphasizes the technological-military aspect of conflicts.

**Food Security**: Food security refers to universal access, both physical and economic, to the basic foodstuffs they purchase; that is, the right to food.

**Foreign Policy**: Foreign policy is the set of decisions and actions of the government in its relations with other actors on the international stage, with the aim of defining, promoting, developing, and defending its values and interests abroad.

**Fourth Generation Conflict**<sup>82 83</sup>: Fourth-generation conflicts or wars are a type of asymmetric conflict or war where conventional forces face off against unconventional forces,

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<sup>76</sup> SIERRA, Olmo. 2013. Democratic Security: The Invincibility of a Political and Economic Regime. [Review]. Latin American Journal of Citizen Security No. 13. Ecuador, pp. 145-147. p. 146. ISSN: 1390-3691.

<sup>77</sup> MINISTRY OF NATIONAL DEFENSE. 2003. Democratic Defense and Security Policy. Colombia. pp. 5 and 12.

<sup>78</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 144

<sup>79</sup> Conference of Defense Ministers of the Americas, Declaration of Brasilia, XV Conference of Defense Ministers of the Americas, July 25-29, 2022.

<sup>80</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 178.

<sup>81</sup> CIRINO, Julio. s.f. Fifth Generation Conflicts: *Cultural Battle*. [on linea]. En: Academia.edu.

resulting in the use of new technologies and globalized interactions, thus requiring innovation in strategy and military preparedness.

## G

**Good**<sup>84 85</sup>: A good is anything that satisfies, directly or indirectly, the desires or needs of human beings. Goods can be tradable or non-tradable, complementary or substitute, consumer goods, durable or non-durable, capital goods, private or public, and standard or inferior.

**Government Policy**<sup>86</sup>: Government policy is the set of rules and actions proposed in the short and medium term by a government in power. These can be understood as government programs, national, state, and municipal plans expressed in terms of procedures and operational measures that drive government action toward certain purposes or objectives.

**Gray Zone Conflict**<sup>87 88</sup>: Within the spectrum of political conflict, the grey zone is an intermediate space that separates competition conducted according to the traditional guidelines governing international politics from direct armed confrontation. Conflict in the grey zone revolves around an objective perceived as relevant, at least in the eyes of the aggressor. The strategies employed are multidimensional and synchronized, and their implementation is gradual, typically in pursuit of long-term objectives. Actions outside the principle of good faith and international law predominate, and the nature of these actions does not allow for an armed response.

## H

**High Intensity Conflict**<sup>89 90</sup>: Unrestricted warfare with high levels of use of force and resources, resulting in severe and widespread consequences. These are essentially wars between powers involving frequent (daily) armed clashes. These can be between governments, government forces and insurgents, or between non-state armed groups that control territories.

**Human Security**<sup>91 92 93</sup>: Human security consists of protecting the vital essence of all human lives in a way that enhances human freedoms and the full realization of the human being. It

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<sup>82</sup> DEMOS, Desarrollo de Medios, S.A. de C.V. op.cit.

<sup>83</sup> *Fourth Generation Warfare: New Wars, Old Conflicts*. 2019. *Cybersecurity for Businesses*. Spain. *International Institute for Global Security Studies*.

<sup>84</sup> *Red Cultural Del Banco De La República En Colombia*. s. f. Bienes. *Banrepultural* [en línea].

<sup>85</sup> MOCHÓN MORCILLO, Francisco and BEKER, Victor Alverto. 2008. *Economics, Principles and Applications*. Fourth edition. Argentina.

<sup>86</sup> Is everything the government does a public policy? 2021. [online]. From: IEXE University.

<sup>87</sup> The "gray zone" and national security [Infographic]. 2021. Santiago. National Academy of Political and Strategic Studies.

<sup>88</sup> JORDÁN, Javier. "International Competition Below the Threshold of War: Toward a Theory of Grey Zone Conflict." *Journal of Strategic Security* 14, no. 1 (2020): 5. <https://doi.org/10.5038/1944-0472.14.1.1836>

<sup>89</sup> CALVILLO CISNEROS, J. M. 2022. International conflicts as a unit of analysis for the study of international relations. Spain. Spanish Association of Political Science and Administration. p. 14.

<sup>90</sup> DEMOS, Desarrollo de Medios, S.A. de C.V. 2016. La Jornada: The war on drugs in Mexico, a high-intensity conflict, says the IISS. [online], *affirms IISS*. [en línea]. At: La Jornada.

<sup>91</sup> The human security approach from three case studies. 2011. United Nations Development Program. Colombia: Inter-American Institute of Human Rights.

<sup>92</sup> GRIFFITHS, John. 2011. *Security and Defense Theory in the Americas: Analysis of the Cases of the United States of America, Peru, and Chile*. Chile: AthenaLab. 978-956-284-822-0

<sup>93</sup> UNITED NATIONS (UN). 1994. *Human Development Report 1994*. United Nations Development Program (UNDP). Mexico, p. 28. ISBN 968-16-4489-1.

involves protecting citizens from critical threats that jeopardize their lives, their long-term development, and their fundamental freedoms. The United Nations considers that there are numerous threats to human security.

**Hybrid Conflict**<sup>94 95</sup>: A hybrid conflict is one that incorporates information operations, subversion, economic and financial pressure alongside military actions, with the parties refraining from the open use of an armed force. It operates by combining military intimidation (without resorting to a conventional attack) and the exploitation of vulnerabilities, integrating the use of conventional, irregular, or intentionally concealed means.

**Hybrid Threats**<sup>96 97</sup>: These are a combination of conventional and asymmetric instruments aimed at destabilizing an adversary. They combine activities generated through political, economic, military, civilian, and informational means.

## I

**Interagency Coordination**<sup>98</sup>: Interagency or interinstitutional coordination is understood as a process through which the resources and efforts of two or more institutions or agencies seeking to generate value in public management are coordinated and synchronized to achieve defined objectives. This is achieved through informing, consulting, parallel planning, and joint action.

## J

**Joint Strategy**: An adjective used to describe activities, operations, and organizations in which elements of at least two branches of the armed forces participate.

## L

**Law and Order Forces (or its equivalent)**<sup>99</sup>: Law and Order Forces are institutions responsible for ensuring compliance with the law, maintaining public order, and protecting the rights and freedoms of citizens. These forces include the police and other civil security entities that operate under an established and supervised legal framework, seeking to preserve social stability and prevent acts that undermine peaceful coexistence.

**Low Intensity Conflict**<sup>100 101</sup>: Low-intensity conflict is a dispute aimed at subduing the adversary with limited use of force over a broad period of time. It is typically associated with confrontations in guerrilla warfare or liberation movements.

## M

**Marine environment**<sup>102</sup>: The set of ecosystems, biological and physical resources, and environmental conditions found in the oceanic and coastal environment. This concept

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<sup>94</sup> QUINTERO CORDERO, Sara. y GONZÁLEZ MARTÍNEZ, Miguel. 2022. *Operational law in the hybrid threats of the white papers of Peru and Brazil*. Santiago. ANEPE Political and Strategic Journal, (139), 39–60. p. 53.

<sup>95</sup> HERRERA ARGUELLES, Héctor. 2018. Hybrid Law in Mexico. [en línea]. En: *24 Horas*.

<sup>96</sup> Cybersecurity Institute. (2021). Glossary of Cybersecurity Terms: An Approach Guide for Business Owners (p. 14). Spain.

<sup>97</sup> Colom Piella, G. (2019). *The Hybrid Threat: Myths, Legends, and Realities*. Spain: Spanish Institute for Strategic Studies.

<sup>98</sup> MOLANO, Diego. 2006. *Interagency coordination: the secret weapon of democratic security. Challenges*. Vol. 14 Jan-Jun. 2006 pp. 318-337 Bogotá - Colombia. ISSN: 0124-4035.

<sup>99</sup> Tonkonoff, S. (2012). The criminal question: An essay on (re)definition. *Nómadas*. Critical Journal of Social and Juridical Sciences. Retrieved from <https://www.redalyc.org/pdf/181/18126372011.pdf>.

<sup>100</sup> PINEDA, Francisco. 1996. *Low intensity War*. Chiapas, Journal (2). México.

<sup>101</sup> SOTOMAYOR VELÁSQUEZ, Arturo. op.cit. p. 73.

includes the interaction between living organisms, non-living elements (such as water and sediments), and human activities that affect or depend on this environment.

**Maritime**<sup>103</sup>: The term *maritime* refers to everything related to the sea, especially concerning navigation, trade, fishing activities, defense, and rights associated with ocean spaces. From a legal and strategic perspective, it includes aspects such as shipping lanes, marine resources, and operations conducted in the marine environment.

**Maritime Administration**<sup>104</sup>: Maritime administration refers to the set of policies, strategies, and actions managed by state or private entities to regulate and oversee maritime activities, including safety, trade, marine environmental protection, and the sustainable exploitation of marine resources. This concept also encompasses the implementation of international regulations and coordination among actors involved in the maritime sphere.

**Maritime Authority**<sup>105</sup>: Is the state agency responsible for regulating, supervising, and ensuring compliance with regulations related to maritime activities within its jurisdiction. This includes navigational safety, the protection of the marine environment, the implementation of international conventions, and the management of marine resources.

**Maritime Domain**<sup>106</sup>: The maritime domain refers to the maritime spaces under the jurisdiction of a State, defined by international norms such as the United Nations Convention on the Law of the Sea (UNCLOS). It includes the territorial sea, the exclusive economic zone, the continental shelf, and other areas that a State administers for the purposes of sovereignty, exploitation, conservation, and maritime security.

**Maritime Governance**<sup>107</sup>: It refers to the system of rules, processes, and structures that regulate the interaction between public and private actors in the maritime sector. Its objective is to manage maritime resources sustainably and effectively, ensure the safety and protection of the marine environment, and foster international cooperation in the use and development of ocean spaces.

**Maritime Policy**<sup>108</sup>: is the set of strategies, regulations, and actions implemented by a State to manage, develop, and protect its maritime interests. This includes aspects related to security, trade, sustainable resource exploitation, environmental preservation, and the governance of maritime areas under its jurisdiction.

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<sup>102</sup> Ortiz-García, M. (2011). The Law for the Protection of the Marine Environment: Towards Maritime Governance. Catalan Journal of Environmental Law. Retrieved from <https://rua.ua.es/dspace/handle/10045/34956>

<sup>103</sup> Méndez Ayala, E. S. (2020). Definition of the components of maritime power in Colombia. ESDEG Repository. Retrieved from <https://www.esdegrepositorio.edu.co/handle/20.500.14205/4430>

<sup>104</sup> Bacon, F. (2018). The State as a Fundamental Component of Maritime Administration. CESNAV.

<sup>105</sup> Valdez, E. O. (2019). Application of the Instruments of the International Maritime Organization (IMO) by the Mexican Maritime Authority. Journal of the Naval War College.

<sup>106</sup> Trias Prats, B. (2016). I Balearic Islands: back to the delimitation of the maritime-terrestrial public domain of Formentera. Yearbook of Environmental Law. Retrieved from [https://www.boe.es/biblioteca\\_juridica/anuarios\\_derecho/abrir\\_pdf.php?id=ANU-O-2016-10118101200](https://www.boe.es/biblioteca_juridica/anuarios_derecho/abrir_pdf.php?id=ANU-O-2016-10118101200).

<sup>107</sup> Ortiz-García, M. (2011). Journal of Social and Juridical Sciences. The Marine Environment Protection Law: towards maritime governance. Catalan Journal of Environmental Law. Retrieved from <https://rua.ua.es/dspace/handle/10045/34956>

<sup>108</sup> Cabrera Martínez, N. (2016). 146 Geopolitics, maritime strategy, and strategic intelligence in defining Colombian maritime interests. La Referencia. Retrieved from [https://www.lareferencia.info/vufind/Record/CO\\_8b4164d44779b0fafa74b7c3e3364c3a](https://www.lareferencia.info/vufind/Record/CO_8b4164d44779b0fafa74b7c3e3364c3a).

**Maritime Power:** this refers to a nation's capacity to utilize its maritime resources—natural, technological, economic, and military—to project influence, ensure maritime security, promote maritime development, and exercise sovereignty over its maritime spaces. This concept includes aspects such as governance, security, and strategic control of maritime routes and resources.

**Maritime Protection**<sup>109</sup>: Comprises the set of measures and strategies designed to prevent and mitigate unlawful acts that threaten the security of ships, ports, and maritime activities. This concept focuses on defense against risks such as terrorism, sabotage, and piracy, differing from maritime security, which encompasses broader aspects related to the operation and sustainability of the maritime environment.

**Maritime Security:** Is the set of policies, actions, and measures aimed at protecting maritime spaces and their resources against conventional and unconventional threats, guaranteeing the protection of critical infrastructure, monitoring illicit activities, preserving the marine environment, and fostering multinational cooperation for sustainable development and regional stability.

**Maritime Space**<sup>110</sup>: From a geopolitical perspective, maritime space is conceived as a strategic region that includes maritime areas of economic, political, and military importance. This space becomes an arena of dispute over the control of resources, transport routes, and strategic positions, particularly in areas where the interests of different international actors converge. The geopolitical relevance of maritime space is determined by its wealth of natural resources, its global connectivity, and its impact on state power and influence.

**Maritime Threat**<sup>111</sup>: A maritime threat refers to any situation, activity, or factor that compromises the safety, stability, or functioning of the maritime environment.

**Medium Intensity Conflict**<sup>112</sup>: Medium-intensity means a dispute like so-called conventional wars, involving the use of force where the consequences and means, as a whole, are limited.

**Military Capabilities**<sup>113</sup>: Military capabilities are defined as the set of factors—material, human, doctrinal, organizational, among others—that, when properly combined and harmonized, enable the Armed Forces to fulfill the objectives associated with their assigned missions.

**Multidimensional Threats**<sup>114 115</sup>: Are diverse in nature and range from traditional warfare to other forms of action, including drug trafficking, organized crime, human and arms trafficking, terrorism, and corruption. These are their distinctive characteristics: they recognize no

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<sup>109</sup> Gómez, F. I. (2023). 105 Towards a definition of maritime security. *Journal of Strategic Thinking and Security*. Retrieved from <http://www.uajournals.com/ojs/index.php/cisdejournal/article/view/1281>

<sup>110</sup> Altieri, M. (2018). "Naval Power in the Southwest Atlantic of the 21st Century: New Global Scenario and Competition for Control of Maritime Space between 2002 and 2015." *Bulletin of the Department of International Security and Defense*. Retrieved from [date missing] <https://sedici.unlp.edu.ar/handle/10915/142513>.

<sup>111</sup> Gómez, F. I. (2023). Towards a Definition of Maritime Security. *Journal of Strategic Thinking and Security*. Retrieved from <http://www.uajournals.com/ojs/index.php/cisdejournal/article/view/1281>

<sup>112</sup> SOTOMAYOR VELÁSQUEZ, Arturo. 2007. International security: old wine in new bottles. *Journal of Political Science*, 27(2), p. 67–88. Chile. p. 73.

<sup>113</sup> CARACUEL RAYA, María Angustias. op.cit. p. 3.

<sup>114</sup> Banegas Alfaro, A. (2017). Are there strategies to combat multidimensional threats in the region? *Journal of Politics and Strategy*, (129), 89-120.

<sup>115</sup> Organization of American States. (2003). *Declaration on Security in the Americas*. Mexico City: Special Conference on Security.

borders, they operate with a high degree of association and complementarity, and they generate a multiplier effect on the population's sense of insecurity, thus affecting each country differently. Beyond their origins, their effects and the ways to confront them make them distinctive.

**Multi-domain integration**<sup>116</sup>: Bringing together all military and civilian contributions, vertically, from the political to the tactical level, and horizontally across all operational domains (land, sea, air, space, and cyberspace) in a broad, interministerial, resilient, and social national effort that includes academia, industry, and civil society.

**Multi-domain operations**<sup>117 118 119 120</sup>: The concept of multi-domain operations considers that joint forces will use reconnaissance, decision-making, and action to exploit opportunities in the operational domains (Land – Naval – Air – Cyberspace – Outer Space) focused on the destruction of key enemy capabilities.

## N

**National Security**<sup>121 122 123</sup>: Is a condition achieved by the State when it guarantees sovereignty, independence, and territorial integrity, the rule of law, social peace, and national interests; as well as the protection of individuals and human rights, through diverse and multidimensional actions. All of this is achieved in the face of external aggression and internal movements that could jeopardize this condition. National security must be implemented through planning and leadership from the political level to all institutions and agencies involved in order to create the conditions conducive to the general well-being of society and to ensure both national interests and objectives.

## P

**Politics**: In the context of government actions, politics refers to the set of decisions, strategies, and actions implemented by public authorities to manage and guide the affairs of a country, region, or community. These actions are aimed at satisfying the needs of society, ensuring the common good, promoting development, and maintaining order within the framework of the rule of law.

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<sup>116</sup> UK MINISTRY OF DEFENCE. 2021. Integrated Operational Concept. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1014659/Integrated\\_Operating\\_Concept\\_2025.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1014659/Integrated_Operating_Concept_2025.pdf)

<sup>117</sup> PERKINS, David. 2018. Preparing to Fight Today: Multi-Domain Operations and the Field Manual 3-0. Military Review.

<sup>118</sup> MINISTRY OF DEFENSE. 2020. Concept Note "Multi-Domain Operations". Madrid. Joint Center for Concept Development.

<sup>119</sup> LEIVA, René y VERSALOVIC, Branko. 2020. Effects of Multi-Domain Operations on the Future Battlefield. Military Essays Journal 6(1). p. 57-80. p. 58. Chile. ISSN 0719-6989.

<sup>120</sup> Multi-Domain Power, thematic focus of the First International Seminar of the Operations Command. 2019. [online]. In: Strategic Press Section, Colombian Air Force.

<sup>121</sup> Peruvian Army. 2023. Security and Land Power Journal. Lima. Center for Strategic Studies of the Peruvian Army. 2(1). p. 25.

<sup>122</sup> SALAZAR ARBOLEDA, GRAL Francisco. 2021. Proceedings of the Academic Seminar, Security and Defense in the 21st Century. Ecuador. Joint Military Defense Academy.

<sup>123</sup> SOTO SILVA, Julio. 2009. National defense from A to Z. Some definitions and concepts. Political and Strategic Journal. Santiago. National Academy of Political and Strategic Studies (114), pp. 291-317. p. 315. ISSN: 0716-7415.

**Port**<sup>124</sup>: A port is a coastal infrastructure designed to allow the exchange of goods and passengers between maritime and land transport. Ports include terminals, loading and unloading facilities, and logistics services that facilitate trade, tourism, and marine-related industrial activities.

**Port Terminal**<sup>125</sup>: A port terminal is an infrastructure located in a port, designed for the loading, unloading, storage, and transfer of goods or passengers between vessels and other means of land transport. Its main function is to facilitate logistical operations related to maritime trade, integrating container handling services, solid or liquid bulk cargo, and passenger transport, depending on its specialization.

**Power**<sup>126</sup>: Power is the capacity and action expressed through the integration of all available means at a given time, as well as the manifest will to use them.

**Public Good**<sup>127 128</sup>: A public good is one that belongs to a population and not to any particular individual. It is characterized by being non-rivalrous, meaning that if one person enjoys it, the amount available to someone else does not decrease. As a consequence of both these characteristics, a public good cannot be sold. No one would be willing to pay, since they would still benefit from it.

**Public Policy**<sup>129 130</sup>: Consists of government actions with objectives of public interest that arise from decisions based on a process of diagnosis and feasibility analysis on a specific issue. It originates from the interactions and exchanges between actors that take place in the political power spheres.

**Public Security**<sup>131 132</sup>: Is a function of the State whose duty is to safeguard the integrity and rights of individuals, as well as to preserve public freedoms, order, and peace. This includes crime prevention, the punishment of administrative offenses, the investigation and prosecution of crimes, and the social reintegration of offenders. This function can be carried out through different levels of decision-making and participation in the planning, preparation, and strategic management of these activities; these levels complement and integrate within the Public Security System, as appropriate for each country.

## R

**Risk**<sup>133</sup>: is the probability of harm to national interests. This assessment can increase or decrease as the environment is modified by internal or external conditions generated by

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<sup>124</sup> Santamaría-Puerto, G., & Hernández-Rincón, E. (2015). Mobile Medical Applications: definitions, benefits, and risks. *Uninorte Health Journal*. Retrieved from [http://www.scielo.org.co/scielo.php?pid=S0120-55522015000300016&script=sci\\_arttext](http://www.scielo.org.co/scielo.php?pid=S0120-55522015000300016&script=sci_arttext).

<sup>125</sup> Lechuga-Cardozo, J. I. (2019). Corporate social responsibility strategy of a port terminal in Barranquilla, Colombia. *SIGNOS: Research in management systems*. Retrieved from <https://www.redalyc.org/journal/5604/560465980009/560465980009.pdf>.

<sup>126</sup> GARCÍA VARGAS, Óscar. 2009. The concept of power and its interpretation from the perspective of power in organizations. *General Studies Journal*, 25(110). Colombia. ISSN 0123-5923

<sup>127</sup> *Goods*. s.f. Encyclopedía. [on line]. En: Banrepcultural.

<sup>128</sup> PARODI, Carlos. 2022. What is a Public Good? *Economics for all*. [on line]. In: Management.

<sup>129</sup> Is everything the government does a public policy? 2021. [online]. From: IEXE University.

<sup>130</sup> FLORES, Tito. 2015. What is a public policy? Chile. Government and Public Policy Observatory. [online]. In: PolíticaPública.cl

<sup>131</sup> What is National Security? 2020. Mexico. National Intelligence Center.

<sup>132</sup> SALAZAR ARBOLEDA, GRAL Francisco Javier. 2021. op.cit.

<sup>133</sup> OJEDA BENNETT, Carlos. op.cit. p. 49.

natural or anthropogenic causes. Its defining characteristic is that, to be considered as such, it must be capable of mutating into a threat that affects the security and defense of the State.

**Risk Enhancer**<sup>134</sup>: These are situations or activities that, in themselves, are not a risk or a threat to national security, as they lack intent. However, they are circumstances or conditions that, if they should occur, increase or decrease the probability and effects of a risk. Their characteristics place them within the scope of public policies outside of security and defense. These include climate change, migration, poverty, energy dependence, and ideological and cultural differences, among others.

**Rules of Engagement (ROE) and Rules of the Use of Force (RUF)**<sup>135 136</sup>: Rules of engagement are operational, legally sound rules that provide commanders at all levels of command and members of units with guidance and support for the use of force, determining the circumstances, conditions, degree, and manner in which they may or may not be applied. They can also be understood as guidelines and instructions from superiors to commanders and subordinates, restricting them to act within the framework of the political and military objectives of the operation. They define when and how armed force may be applied and are designed to ensure that the application of such force is carefully controlled. The term RUF, on the other hand, will be used in activities related to the preservation of internal order.

## S

**Scenario**<sup>137 138</sup>: A scenario is a representation, in the present, of the future behavior of different events or a set of circumstances. It allows us to visualize how certain decisions affect specific elements in a given space and within a defined timeframe.

**Securitization**<sup>139 140 141</sup>: The concept of “securitization” was coined by Barry Buzan, Ole Waver, and Jaap De Wilde in their book, *\*Security: A New Framework of Analysis\** (1998). Securitization is a media process by which an authority or opinion leader seeks to give the status of a security issue to a problem that is not, claiming that it threatens the survival of an entity—whether individuals, groups, states, or humanity—in order to obtain political gains, funds, or power, among other goals.

**Security**<sup>142 143 144 145</sup>: Security is a condition that allows progress, the achievement and maintenance of national objectives, as well as the preservation of the population, sovereignty, and territorial integrity, with minimal interference from risks and threats. Ensuring the protection of citizens’ assets and values is a primary goal of the State and government. The

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<sup>134</sup> Risk enhancers. 2013. Spain. Spanish Institute for Strategic Studies, Ministry of Defense. Strategy Notebook No. 159. p. 12.

<sup>135</sup> CARACUEL RAYA, María Angustias. op.cit. p. 16.

<sup>136</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 177.

<sup>137</sup> ROYAL SPANISH ACADEMY: Dictionary of the Spanish Language, [online version 23.6]. <https://dle.rae.es/escenario>. [Accessed February 10, 2023].

<sup>138</sup> *Glossary format of terms, concepts and acronyms. 2019. Colombia. Superior War College.*

<sup>139</sup> TICKNER, Arlene. 2005. *Securitization of the Colombian Crises*, Journal Uniandes No. 60. Colombia.

<sup>140</sup> VEGA, Diego y ESPINOZA, Ulises. 2019. *The securitization of the Ecuadorian State in the face of Venezuelan migration. Journal of the Ecuadorian Army War Academy 12(1). pp. 91-99. p. 97. ISSN: 2600-5689.*

<sup>141</sup> TREVIÑO, Javier. 2016. What do we mean when we talk about the “securitization” of international migration in Mexico? *International Forum Journal 56(2)*.

<sup>142</sup> MINISTRY OF NATIONAL DEFENSE. 2004. Defense White Paper of Bolivia.

<sup>143</sup> MINISTERIO DE DEFENSA. 2010. op.cit. p. 108.

<sup>144</sup> VALERO, Ricardo. 2009. *Collective Security in Latin America*. Mexico. Virtual Legal Library of the Institute of Legal Research of the UNAM.

<sup>145</sup> Institutional Issues. 2014. op.cit. p. 101.

concept of security can be applied to various areas, including political, legal, social, economic, natural, and human, among others.

**Security Community**<sup>146 147</sup>: Conceived from the ideas of Karl Wolfgang Deutsch, this refers to a community in which states have created not only an established order but also a stable peace. Therefore, it is recognized as a group of states that has developed a habit of peaceful interaction and has rejected the use of force in resolving disputes with other members of the same community.

Another definition coincides with the idea of a group made up of military and civilian personnel, primarily from academic centers and political parties, whose common denominator is their knowledge and experience in defense matters and whose purpose is to merge civilian and military perspectives in the research and dissemination of general topics related to national security and defense.

**Security Complex**<sup>148</sup>: A set of units whose main processes of securitization, de-securitization, or both, are so interrelated that their security problems cannot be reasonably analyzed or resolved separately.

**Social Good**<sup>149 150</sup>: Are those designed to meet social needs and thus improve the well-being of the population. Their main objective is to satisfy individual or collective needs, and they can be produced by businesses or by the state itself. They also satisfy the needs of the prevailing political and economic structure in each country. A key characteristic is the non-rivalry in consumption of a social good, meaning that no one should consume it at the expense of others.

**State Policy**<sup>151 152</sup>: Is the set of long-term norms and actions established by a state, which remain unchanged despite changes in government. These can be understood as the ideals, objectives, beliefs, and plans of a country independent of the current government, with a horizon of stability and permanence over time, based on the nation's higher interests and not on current circumstances.

**Strategy**<sup>153 154 155 156</sup>: Strategy is the science, art, instrument, and tool at the service of political and military action that harmonizes ends, means, methods, and risks to conceive and guide the utilization of a country's potential toward the desired end state.

## T

**Threat**<sup>157 158 159 160</sup>: A threat is an action or event perpetrated by a potential adversary with the perceived intention of launching an attack to harm one's own interests or to prevent the

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<sup>146</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 136.

<sup>147</sup> ADLER, Emmanuel. 1998. Security Communities. Cambridge University Press. Editorial Board. ISBN: 0-521-63953-0, p. 3.

<sup>148</sup> BUZAN, B. y WAEVER, O. Regions and Power. The Structure of International Security. Cambridge University Press. Editorial Board. p. 44.

<sup>149</sup> CASTRO JIMÉNEZ, Daniel. 2012. Social Goods: *¿prices, premiums or subsidies? Three inefficient ways to provide and /or value them.* Colombia. University of Santo Tomás. Free Criteria, 10(17), 89–106.

<sup>150</sup> Social Goods s.f. Encyclopedia [on line]: Economipedia.

<sup>151</sup> MINISTRY OF NATIONAL DEGENSE. 2006. op.cit. p. 9.

<sup>152</sup> Chilean National Defense Book - Glossary. 2011. Latin American Security and Defense Network.

<sup>153</sup> BALLESTEROS MARTÍN, Miguel. Á. op.cit. p. 34.

<sup>154</sup> MOLINA JHONSON, Carlos. y NAVARRO MESA, Miguel. op.cit. p. 152.

<sup>155</sup> Institutional Issues. 2014. op.cit. p. 15.

<sup>156</sup> Relationship established by Javiera Ignacia Benavides Jativa and Vannia Andrea Lazcano Nuñez. Political Scientists, Universidad del Desarrollo. 2023.

achievement and/or maintenance of planned objectives. To be considered a threat, it must be generated by another state or non-state actors and possess the capacity to carry it out.

**Traditional Conflict**<sup>161 162 163</sup>: It is based on issues such as territory, economy, history, and ethnicity, where the traditional military apparatus, as the deciding factor, carries the most weight.

**Treaty**<sup>164</sup>: A treaty is a formal agreement between two or more subjects of international law, generally states or international organizations, made in writing and governed by international law. These agreements can cover political, economic, cultural, or security issues and are subject to principles such as good faith and mutual consent.

## U

**Unrestricted conflict**<sup>165 166 167</sup>: The concept of unrestricted conflict or war was developed by Qiao Liang and Wang Xiangsui, who argued that in this type of conflict, all restrictions on military and non-military matters must be overcome. It includes omnidirectionality, synchronicity, limited objectives, unlimited measures, asymmetry, minimal consumption, multidimensional coordination, adjustment, and process control in order to affect the national security of the most powerful opponent. Unlike other types of conflicts or wars, unrestricted warfare is the contemporary strategic thinking where, faced with a relative reduction in military violence, we are witnessing an increase in violence in the political, economic, and technological spheres.

## V

**Vulnerability**<sup>168 169</sup>: Vulnerability is the structural or inherent condition of a country that makes it susceptible to the effects of problems of various kinds. It corresponds to the physical, economic, political, or social predisposition or susceptibility of a community to be affected or

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<sup>157</sup> Ministry of Defense. (2010). Chile's National Defense Book 2010 (p. 130).

<sup>158</sup> Ojeda Bennett, C. (2013). Multidimensional Threats: A Reality in South America (p. 44). Santiago: National Academy of Political and Strategic.

<sup>159</sup> Ministry of National Defense. (2004). Bolivia's Defense White Paper (p. 45).

<sup>160</sup> Ballesteros Martín, M. Á. (2016). Search of a National Security Strategy (p. 17). Spain: Spanish Institute for Strategic Studies, Ministry of Defense.

<sup>161</sup> Albarracín, M. L. G., Castro, C. M., & Chaparro, P. E. (2020). Importance, definition and conflicts of authorship in scientific journals. *Bioethics journal from* <https://www.scielo.br/j/bioet/a/6dH7SGCGLVhvzSqnDfNsJz/>.

<sup>162</sup> ROTHKEGEL SANTIAGO, Luis. 2019. *Evolution of the contemporary paradigm of defense in Chile*. Santiago. ANEPE Center for Strategic Research and Studies. *WORKING NOTEBOOK*. No. 15-2019. p. 2.

<sup>163</sup> MERCADO MALDONADO, Asael, & GONZÁLES MARTÍNEZ, Guillermo. op.cit. p. 218.

<sup>164</sup> Barberis, J. A. (1982). The concept of international treaty. Spanish Yearbook of International Law. Retrieved from <https://revistas.unav.edu/index.php/anuario-esp-dcho-internacional/article/download/28629/24576>.

<sup>165</sup> DE PABLO LÓPEZ, Moisés. 2015. *Unrestricted Warfare: A New Way of Waging War? Chile*. Center for Strategic Studies of the War Academy. p. 3.

<sup>166</sup> ACUÑA LÓPEZ, Luis, & BARRENO RAMIREZ, Alex. 2018. Unrestricted Warfare; Fourth Generation Warfare. Journal of Security and Defense Sciences, 3(3), pp. 232–237. Ecuador. p. 232.

<sup>167</sup> FAUNDES, Cristián. 2009. On the Principles of Unrestricted Warfare. General Staff Thought Dissemination Booklet No. 30. pp. 34–45. Santiago. Army War Academy, Postgraduate and Research Department. p. 36.

<sup>168</sup> MINISTRY OF DEFENSE OF THE REPUBLIC OF ARGENTINA. 1998. White Paper of the Argentine Republic.

<sup>169</sup> PÉREZ CONTRERAS, María de Montserrat. 2005. MINISTRY OF DEFENSE OF THE REPUBLIC OF ARGENTINA. 1998. White Paper of the Argentine Republic. An approach to a study on vulnerability and family violence. Mexican Bulletin of Comparative Law. 38(113). Mexico. ISSN 0041-.

to suffer adverse effects should a hazardous phenomenon occur. Vulnerabilities can be institutional, legal, social, environmental, political, or territorial in nature.

## **W**

**Western Hemisphere**<sup>170</sup>: the part of the Earth comprising North and South America and the surrounding waters. Longitudes 20°W and 160°E are often considered its boundaries. Some geographers, however, define the Western Hemisphere as the half of the Earth west of the Greenwich Meridian (Prime Meridian, 0° longitude) extending to the 180th meridian. According to this definition, the Western Hemisphere includes not only North and South America, but also parts of Africa, Europe, Antarctica, and Asia. For the purposes of this study, we will consider the sovereign Member States of the OAS geographically located in the Americas (North America, Central America, and South America), and whose capital or central government seat is located in the Americas.

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<sup>170</sup> Encyclopedia Britannica. Available at: <https://www.britannica.com/place/Western-Hemisphere>

## Acronyms and Abbreviations

### Spanish

	<b>Acronym</b>	<b>Meaning</b>
1	AMERP	Acuerdo sobre Medidas del Estado Rector del Puerto
2	CICAD	Comisión Interamericana para el Control del Abuso de Drogas
3	CID	Colegio Interamericano de Defensa
4	COpMar	Centro de Operaciones Marítimas
5	CNUDM	Convención de las Naciones Unidas sobre el Derecho del Mar
6	DICAPI	Dirección General de Capitanías y Guardacostas (Perú)
7	DIME-FIL	Diplomática, Información, Militar, Económica, Financiera, Inteligencia y Aplicación de la Ley
8	FAO	Organización de las Naciones Unidas para la Alimentación y la Agricultura
9	GBP-SMH	Guía de Buenas Prácticas – Seguridad Marítima Hemisférica
10	IBAMA	Instituto Brasileño del Medio Ambiente y de los Recursos Naturales Renovables
11	ICMBio	Instituto Chico Mendes para la Conservación de la Biodiversidad
12	INDNR	Pesca Ilegal, No Declarada y No Reglamentada
13	JID	Junta Interamericana de Defensa
14	MEAN	Mecanismo de Evaluación de la Armada Nacional
15	OEA	Organización de los Estados Americanos
16	OFPO	Operaciones de Fiscalización Pesquera Oceánica

17	OIT	Organización Internacional del Trabajo
18	OMI	Organización Marítima Internacional
19	ONU	Organización de las Naciones Unidas
20	PNC	Plan Nacional de Contingencia para Incidentes de Contaminación por Hidrocarburos en Aguas Jurisdiccionales
21	ZEE	Zona Económica Exclusiva

### English

	<b>Acronym</b>	<b>Meaning</b>
1	AIS	Automatic Identification System
2	CBSI	Caribbean Basin Security Initiative
3	GIS	Geographic Information System
4	GOOS	Global Ocean Observing System
5	IMO	International Maritime Organization
6	IOC	Intergovernmental Oceanographic Commission
7	ISO	International Organization for Standardization
8	ISPS	International Ship and Port Facility Security Code
9	IUU	Illegal, Unreported, and Unregulated
10	KPI	Key Performance Indicator
11	MDA	Maritime Domain Awareness
12	MoU	Memorandum of Understanding

13	NOAA	National Oceanic and Atmospheric Administration
14	SOLAS	International Convention for the Safety of Life at Sea
15	SOP	Standard Operating Procedure
16	SPSS	Self-Propelled Semi-Submersible
17	STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
18	SUA	Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation
19	UNESCO	United Nations Educational, Scientific and Cultural Organization
20	UNODC	United Nations Office on Drugs and Crime
21	VMS	Vessel Monitoring System
22	VTS	Vessel Traffic Service

