Marine Litter Action Plan for the Northeast Pacific 2022–2026

UN environment
United Nations Environment Programme

GPML Global Partnership on Marine Litter

MarViva

Marine Litter Action Plan for the Northeast Pacific 2022–2026

Credits

Authors

Alberto Quesada
María Alejandra Fernández García

Supervision and Review (UNEP)

Jordi Pon
Heidi Savelli
Carla Friedrich
Christopher Corbin

Work team in the Northeast Pacific Region

Colombia

Ministry of Environment and Sustainable Development
Ana Marlene Arriaga Rodriguez
Karin Bernarda Romero Martinez

Ministry of Foreign Affairs
Sonia Angélica Jurado Caicedo

Members of the marine litter technical table of the National Technical Committee for the Prevention of Marine Pollution of the Colombian Ocean Commission

Costa Rica

Ministry of Environment and Energy
Gabriel Rodríguez Castillo
Marco Chinchilla Salazar
Yamileth Cubero

Ministry of Health
Eugenio Androvetto

El Salvador

Ministry of Environment and Natural Resources
Alexander Gil
Gladys Loucel
Jessica Margarita Laguardia
Jaime Espinoza
Oscar Orellana
Italo Flamenco Córdova

Guatemala

Ministry of Environment and Natural Resources
MSc. Arq. Melissa Alvarez Barrientos
Licda. Regina Sánchez Castañeda

Honduras

Secretariat of Natural Resources and Environment
César Flores
Marvin Martínez

General Directorate of the Merchant Marine
Mirella Gonzalez Florentino

Mexico

Secretariat of Environment and Natural Resources
Alfonso de la Torre
Israel Mendoza
Itzel Gonzalez
Laura Yanez
Maricela Díaz
Miguel Fragoso
Roberto Rosado
Regina Trigueros
Salomon Díaz

Nicaragua

Ministry of Environment and Natural Resources
Fernando Palacios Moreno
Amparo Vallejos
Deyvin Mayorga

Panama

Ministry of Environment
Digna Barsallo
Jorge Casas
Roberto Bonilla

Internal reviewers (MarViva Foundation)

Jorge A. Jiménez Ramón
Juan M. Posada
Diana Bonilla
Katherine Arroyo

Editorial coordination

Melissa Álvarez Barquero
Juan M. Posada

Photographs

Cover and back cover
Plastic waste accumulates on beaches in the region
© Larina Marina / Shutterstock

Bags, bottles and other plastic materials pollute the oceans
© Rich Carey / Shutterstock **p. 9**

The oceans are essential for the balance of the planet
© SHIN-db / Shutterstock **p. 11**

Oceans are a source of life
© Ethan Daniels / Shutterstock **p. 14**

Forum of Ministers of Environment of Latin America and the Caribbean. Costa Rica, 2022
© MINAE **p. 20**

Gulf of Nicoya, Costa Rica
Costa Rica, 2022.
© MarViva Foundation **p. 23**

Plastic waste pile in a landfill
© Tong_stocker / Shutterstock **p. 30**

Marine litter has increased significantly in the last few decades
© MarViva Foundation **p. 31**

Oil spill on the beach
© Pix One / Shutterstock **p. 33**

Plastic trash in Costa de Pájaros, Puntarenas, Costa Rica, an area where fishing is the largest source of employment
© MarViva Foundation **p. 35**

Birds are also affected by plastic pollution
© FJAH / Shutterstock **p. 36**

Plastic pollution on the seabed
© Andriy Neekrasov / Shutterstock **p. 37**

Plastic waste pollutes the Gulf of Nicoya, Costa Rica
© MarViva Foundation **p. 38**

Large amount of plastic waste reaches rivers and seas every day
© Boulenger Xavier / Shutterstock **p. 40**

Grijalva River, Mexico
© Mr. James Kelley / Shutterstock **p. 42**

Motagua River, Guatemala
© Byron Ortiz / Shutterstock **p. 43**

Choluteca River, Honduras
© Marek Poplawski / Shutterstock **p. 45**

Tarcoles River, Costa Rica
© Mark_Kostich / Shutterstock **p. 46**

Colon, Panama
© Photos593 / Shutterstock **p. 47**

Choco River, Colombia
Juan Diego Garcia Rico / Shutterstock **p. 49**

Campaign on biodegradable plastics launched by MarViva Foundation
Costa Rica, 2021
© MarViva Foundation **p. 52**

Volunteers collect garbage on the beaches
Steklo / Shutterstock **p. 58**

The Ocean Cleanup extracts plastic waste from rivers and seas
© Sundry Photography / Shutterstock **p. 61**

Trap systems capture waste and prevent it from reaching the ocean
© ArliftAtoz2205 / Shutterstock **p. 62**

Ecologic Blue Flag Program Costa Rica
©Facebook: Ecologic Blue Flag Program (Costa Rica) **p. 65**

Mechanical claw for manual collection of mixed waste
© Zlikovec / Shutterstock **p. 66**

Establishments committed to #ChaoPlásticoDesechable of MarViva Foundation
© MarViva Foundation **p. 70**

There are gaps and opportunities to address the problem of marine litter
© Breslavtsev Oleg / Shutterstock **p. 71**

Plastic bottles pollute the oceans and put marine life at risk
© Andrei Dubadzel / Shutterstock **p. 75**

As a result of the pandemic, gloves and masks were added to the list of plastic pollution
© aleks333 / Shutterstock **p. 89**

Plastic pollutes for hundreds of years
© Simplystocker / Shutterstock **p. 91**

© Nariman Mosharrafa on Unsplash **p. 96**

© Nick Fewings on Unsplash **p. 98**

Design and layout

Ximena Díaz Ortiz

External reviewer

Liliana Ortíz Fonseca

Translator

Ana María Piza

Cite as

UNEP and MarViva (2023). *Marine Litter Action Plan for the Northeast Pacific 2022-2026*. Costa Rica: San Jose. 116 pp.

ISBN: 978-9930-611-07-4

2023. All rights reserved by MarViva Foundation.

This document may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided the source is cited.

The names used and the presentation of the material on the maps in this document do not imply the expression of any opinion on the part of MarViva Foundation or the Secretariat of the United Nations on the legal status of any country, territory, city or area or its authorities, or the delimitation of its borders or boundaries.

Contents

Table index

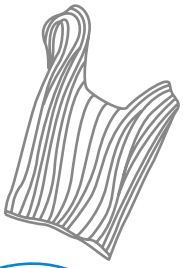
Acronyms and abbreviations

AIDA Inter-American Association for the Defense of the Environment (Asociación Interamericana para la Defensa del Ambiente; Guatemala)
ALDFG Abandoned, lost, and discarded fishing gear
ANCON National Association for Nature Conservation (Asociación Nacional para la Conservación de la Naturaleza; Panama)
ARAP Authority of the Aquatic Resources of Panama (Autoridad de los Recursos Acuáticos de Panamá)
BMWG Biological Monitoring Working Group
BOB Barrier or Trash (Barrera o Basura)
CBD Convention on Biological Diversity
CCAD Central American Commission for Environment and Development (Comisión Centroamericana de Ambiente y Desarrollo)
CGR General Comptroller of the Republic (Contraloría General de la República)
CONPES National Council for Economic and Social Policy (Consejo Nacional de Política Económica y Social)
CPPS South Pacific Permanent Commission (Comisión Permanente del Pacífico Sur)
DIMAR General Maritime Directorate (Dirección General Maritima; Colombia)
DGMM General Directorate of the Merchant Marine (Dirección General de la Marina Mercante; Honduras)
DNP National Planning Department (Departamento Nacional de Planeación; Colombia)
DWQI Dutch Water Quality Index
EBSA Ecologically or Biologically Significant Marine Areas
EMSA Mesoamerican Strategy for Environmental Sustainability (Estrategia Mesoamericana de Sostenibilidad Ambiental)
EPIC Engagement in Plastic-free Innovation for Change
FAO Food and Agriculture Organization
FUNDAECO Foundation for Ecodevelopment and Conservation (Fundación para el Ecodesarrollo y la Conservación)
GESAMP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GPA Global Program of Action for the Protection of the Marine Environment from Land-based Activities
GPGP Great Pacific Garbage Patch
GPML Global Partnership on Marine Litter
GWPCA Global Water Partnership Central America
ICC Private Institute for Climate Change Research (Instituto Privado de Investigación sobre Cambio Climático)
IMO International Maritime Organization
INVEMAR Institute of Marine and Coastal Research José Benito Vives de Andréis (Instituto de Investigaciones Marinas y Costeras José Benito Vives de Andréis; Colombia)
IOC Intergovernmental Oceanographic Commission of UNESCO

ISWMP Integrated Solid Waste Management Plans kg kilogram(s)
km kilometer(s)
km² square kilometer(s)
LBS Protocol on Pollution from Land-Based Sources
m³ cubic meter(s)
MADS Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible; Colombia)
MARN Ministry of Environment and Natural Resources (Ministerio de Ambiente y Recursos Naturales; El Salvador, Guatemala, Nicaragua)
MARPOL International Convention for the Prevention of Pollution from Ships
MD Ministry of Defense (Ministerio de Defensa; Nicaragua)
MINAE Ministry of Environment and Energy (Ministerio de Ambiente y Energía; Costa Rica)
MINSA Ministry of Health (Ministerio de Salud; El Salvador, Nicaragia, Costa Rica, Panamá, Colombia)
MRE Ministry of Foreign Affairs (Ministerio de Relaciones Exteriores)
n.d. undated
NGO Non-governmental Organization
NOAA National Oceanic and Atmospheric Administration
PBAE Ecological Blue Flag Program (Programa Bandera Azul Ecológica)
PET polyethylene terephthalate
PGAI Institutional Environmental Management Programs (Programa de Gestión Ambiental Institucional)
PROFEPA Federal Attorney for Environmental Protection (Procuraduria Federal de Proteccion al Ambiente)
RCM renewable, compostable, compostable in marine environment
RHA Hydrological-administrative regions (Regiones hidrológico-administrativas)
SCDB Secretariat of the Convention on Biological Diversity (Secretaria del Convenio sobre la Diversidad Biológica)
SCTLD Stony Coral Tissue Loss Disease
SDG Sustainable Development Goals
SEMARNAT Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales)
SICA Central American Integration System (Sistema de Integración Centroamericana)
SMB small and medium sized business
SPAW Specially Protected Areas and Wildlife
t ton(s)
UN United Nations
UNEA United Nations Environment Assembly
UNEP United Nations Environment Programme
UNESCO United Nations Educational, Scientific and Cultural Organization
UNICAPAM Port Captaincies and Maritime Affairs Unit (Unidad de Capitanías de Puerto y Asuntos Marítimos)
USD United States Dollars
VACPP Voluntary Agreements for Cleaner Production Programs
WEEE waste of electrical and electronic equipment

Bags, bottles and other plastic materials pollute the oceans

Prologue



Our oceans face an unprecedented threat due to increasing levels of human-caused pollution. About 80% of the pollution discharged into the seas and oceans comes from land-based sources. Plastics and microplastics are the most common types of marine litter (85% of the waste that reaches the oceans); these cause negative impacts on ecosystems, economies, and human well-being. This situation has worsened with the Covid-19 pandemic and the increase in the consumption of disposable products.

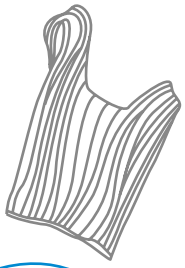
Against this backdrop, global stakeholders are increasingly coming together to find solutions to the complex challenge of cleaning up the seas. At the fifth session of the United Nations Environment Assembly (UNEA-5), environment ministers and other leaders from more than 150 countries warned of the need to address the triple global crises, which includes the pollution and waste crisis. In addition, marine litter has been defined as a priority that countries should address which is why since the first session of the UNEA in 2014 four resolutions on marine litter and microplastics have been adopted.

In Latin America and the Caribbean, the problem of marine litter is present in the daily life of different social realities, considerably aggravated by inadequate practices in solid waste management and the absence of proper management of plastics throughout their life cycle. Although solid waste management has improved in recent decades, barely 10% is recycled, and around 145,000 tons are deposited daily in open dumps, including 17,000 tons a day of plastic waste, which

often ends up in coastal or marine areas. If the current situation continues, the forecast is that by 2025 more than 1 million tons of plastic would be present in the marine spaces of the Northeast Pacific region.

In that regard, recognizing that concerted action is required to address this challenge effectively and in a transboundary manner, the eight countries of the Northeast Pacific region of Latin America and the Caribbean have worked together in the development of the Northeast Pacific Action Plan: Marine Litter, envisioning a favorable scenario that allows active citizen participation in the protection of the marine environment. This coordination is also aligned with the vision expressed by the countries in the framework of the Forum of Ministers of Environment of Latin America and the Caribbean, which highlights the importance of regional cooperation, the exchange of good practices, the development and implementation of regional plans to reduce marine litter, and articulation with other existing initiatives, such as the Marine Litter Action Plan for the Wider Caribbean.

This document, which is the response to a call to participate in this challenge with the valuable contribution and active participation of the Governments of the Northeast Pacific region, analyzes the current situation of marine litter in the region, identifies gaps and areas of opportunity regarding its management, and recommends a set of activities around prevention, reduction, and proper management.

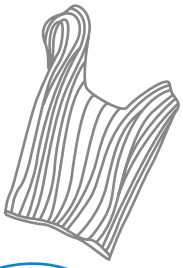


Certainly, the goal is to bring together all efforts undertaken by the multiple stakeholders to work together in favor of the conservation and the responsible use of our oceans, as the essential global resource that can ensure a sustainable future for the next generations, contributing to a comprehensive way to achieve the commitments established in the 2030 Agenda and the Sustainable Development Goals proposed by the United Nations (UN).

Jacqueline Alvarez
Director and Regional Representative for Latin America
and the Caribbean for the United Nations Environment Programme

The oceans are essential for the balance of the planet

Executive summary

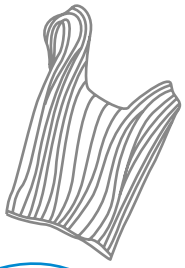


Oceans are essential to the balance of the planet, as they offer an infinity of ecosystem services and are facilitators of the social and economic development of humanity. However, despite their multiple benefits, coastal and marine ecosystems are increasingly vulnerable and face constant environmental and economic challenges due to human intervention. Marine litter is one of the most significant emergencies defined by the United Nations Environment Programme (UNEP) as "any persistent, manufactured or processed solid material that is discharged, evacuated or abandoned in the marine and coastal environment".

In the Northeast Pacific, several economic activities such as tourism, fishing and transportation depend on the environmental services provided by marine and coastal spaces. This is a region with vulnerable socioeconomic indicators and therefore, fragile in its relationship with natural resources and highly vulnerable to extraordinary situations that can increase poverty, unemployment and in general, slow down social development, a scenario that deepened with the arrival of Covid-19.

In the context of an unprecedented global health crisis, with the active participation of representatives of the eight countries[1] of the Northeast Pacific, and with the support of UNEP and MarViva Foundation, the Marine Litter Action Plan for the Northeast Pacific (the Action Plan) was developed. Thanks to a coordinated virtual effort, comprising more than 20 meetings throughout 2020, it was possible to finalize a document that integrates both regional data on marine litter and the main gaps and opportunities for action, as well as a strategic plan that identifies a body of activities, actions, strategic partners, indicators and temporal perspective.

The aim of Action Plan 2022-2026 is to provide all States in the Northeast Pacific, civil society organizations and other stakeholders, with actions applicable to the local, national and regional context. Initiatives that make it possible to address the problem of marine litter effectively and sustainably over time, contributing to sustainable economic growth, social development and improving local prosperity, while protecting and restoring ecosystems, biodiversity and marine protected areas in the region.



The construction of the Action Plan facilitated the detailing of the state of marine litter in the Northeast Pacific region. One of the main conclusions is that waste management on land is the biggest challenge for the countries of the region. With limited management indicators, it is urgent to intervene in the different waste management systems, to improve the scope of the collection, make use of waste with value and properly manage final disposal through controlled means.

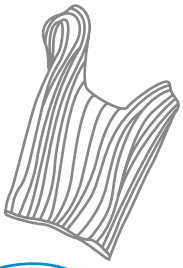
In Latin America and the Caribbean, 541,000 tons (t) of waste are generated daily, of which 30% is still disposed of in uncontrolled dumps or areas, such as landfills and open-air dumps, affecting 40 million people (UNEP, 2018a). There are enormous challenges in the separation and use of waste. Nearly 90% of the region's waste is not recycled, and of this, plastic represents the biggest problem (or the biggest opportunity).

1 Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia. It should be noted that in the construction process of this Action Plan, Colombia participated as an observer since it was not part of the Cooperation Agreement for the Protection and Sustainable Development of the Marine and Coastal Zones of the Northeast Pacific or its Action Plan. In this sense, the country reiterates that its contributions and technical inputs to this document have had the objective of evidencing the actions carried out as a country and contributing to regional management in favor of reducing this global problem that pollutes, both the water resource and the coastal marine ecosystems. Therefore, neither their participation in this process nor the statements made during it can be interpreted as tacit or express sovereign manifestations of their will to ratify the Agreement or its Action Plan.

In this framework, the countries of the Northeast Pacific identify the lack of information and monitoring as the most important limitation. It is identified as a challenge and an opportunity for improvement in the generation of public policies that allow systems to be reconfigured with technology and innovation, particularly the waste management infrastructure. Likewise, the control and monitoring of regulatory compliance are presented as challenges that must be addressed urgently.

Therefore, measures are proposed in education, awareness and training, that allow both the population and the responsible authorities to obtain better knowledge and modern tools to design efficient and preventive management systems. In addition, actions aimed at reviewing federal, national and local legal frameworks are proposed, to enact sufficient legislation to prevent the generation of marine litter.

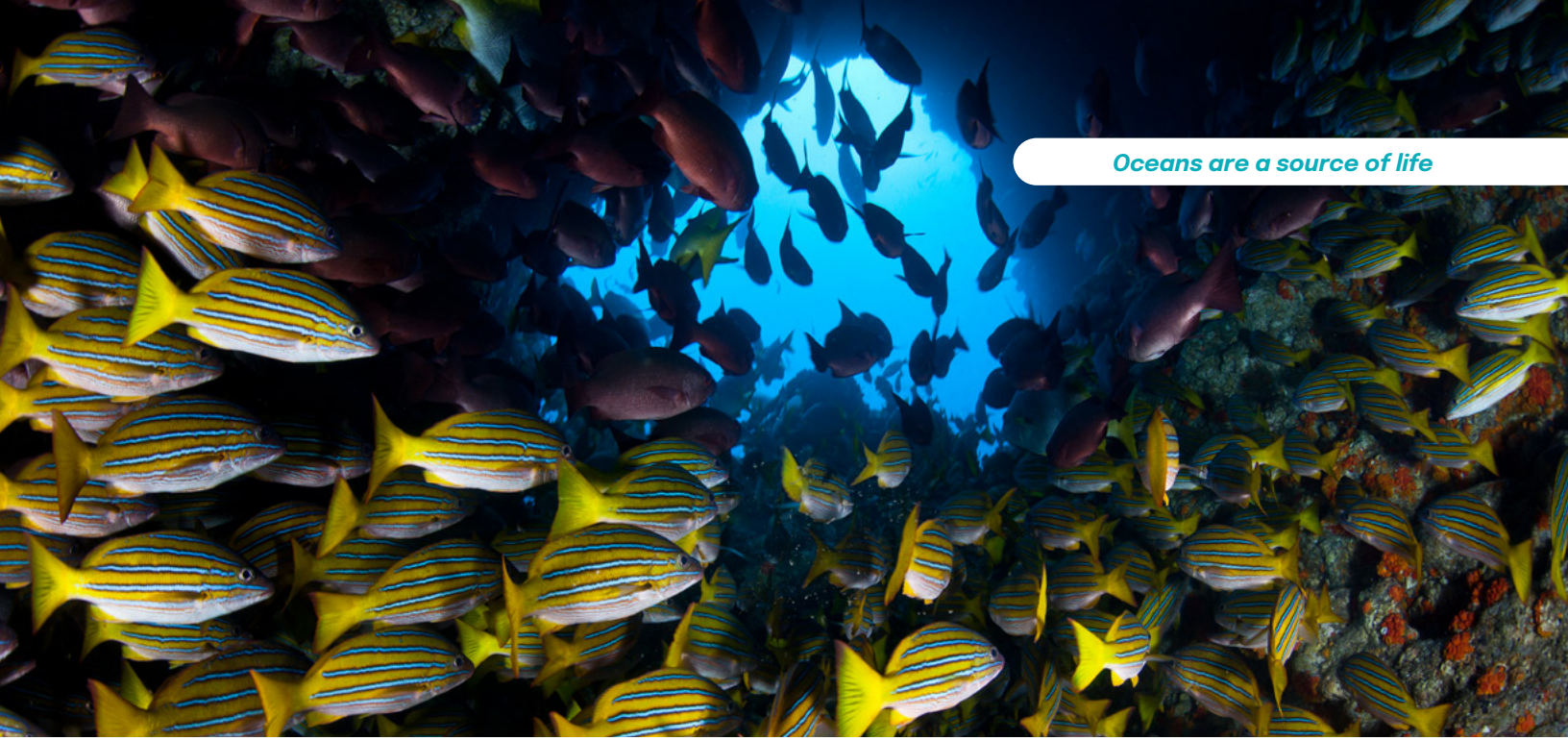
As an articulating element, we can achieve the best marine litter management through strategic alliances, cooperation between the countries of the region and the development of financing opportunities. In particular, the need has been identified to implement environmental impact assessments that allow a correct and fair application of cost internalization programs, extending the responsibility to the producer and the payment of ecosystem-related services. The importance of joint work with private companies, civil society organizations and especially, regional integration through existing structures and coordinated work with international organizations has also been recognized.



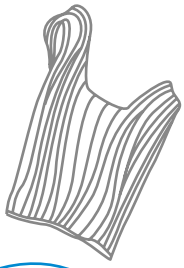
In short, the Action Plan is divided into five parts: the first presents background information, the international and regional governance framework for marine litter, the objectives of the Plan, its guiding principles and the document development process. The second part describes the main global and regional impacts of marine litter, the regional governance framework for marine litter in the Northeast Pacific and the different regional initiatives for its integrated management. The third part outlines the main gaps and opportunities in marine litter management.

The fourth provides the strategic framework for the Action Plan through seven strategic areas: alliances and cooperation; education, training and awareness; monitoring and investigation; governance and institutionality; infrastructure for integrated waste management; control and surveillance; and financing.

Finally, the fifth part presents the coordination, implementation and evaluation structure of the Action Plan.



1. Introduction



1.1. Background

The oceans are a source of life and responsible for making planet earth habitable. They cover 70% of the Earth's surface and produce more than 50% of the oxygen we breathe (NOAA, 2020). In addition to hosting thousands of marine species and regulating the climate, they are very important for economic development and human well-being. The oceans facilitate the transport of international trade, are a source of food, generate direct and indirect jobs in various sectors of the economy, such as fishing, aquaculture and tourism, and contribute to the health sector in the production of medicines.

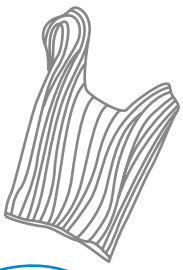
Despite its multiple benefits, human intervention has made coastal and marine ecosystems increasingly vulnerable. In addition, they face constant environmental and economic risks. Among the different threats that affect the seas and oceans, the sedimentation of marine litter is one of the most persistent problems in the world. This phenomenon negatively affects both marine and coastal ecosystems, as well as the diversity of marine flora and fauna and the key communities and industries that depend on this resource.

According to the UNEP, in recent years marine litter - understood as any persistent, manufactured, or processed solid material that is discharged,

evacuated, or abandoned in the marine and coastal environment (UNEP, 2009) - has occupied an important place in the government plans of the countries and has captured the attention of the global community.

Official UNEP figures indicate that 80% of marine litter comes from land-based sources and is made up, especially of plastic trash and microplastics from food and beverage packaging. It is alarming that every year about 8 million tons of these materials end up in the oceans, constituting an unsustainable situation in the long term (PNUMA, 2017).

In this sense, the levels of marine litter identified in the Northeast Pacific region coincide with data reported by other regions. Plastic - especially microplastics - becomes one of the main hazardous materials for marine and coastal ecosystems. If the current situation continues, by 2025 it is predicted that 1,303,186 t of plastic will be present in the marine spaces of the Northeast Pacific region (Jambeck et al., 2015). Faced with this situation, the eight countries of the region have initiated national, regional and international actions, which are described in the following section and are contextualized in this Regional Plan.



The Action Plan proposes measures applicable in the local, national and regional context to address the problem of marine litter effectively and sustainably over time. They also contribute to sustainable economic growth and social development, while protecting and restoring ecosystems, biodiversity and marine areas in the region.

1.2. International and Regional Framework on Marine Litter

1.2.1. The 2030 Agenda and Sustainable Development Goals

The General Assembly of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development as a roadmap in favor of people, the planet and prosperity, with the additional intention of strengthening universal peace and access to justice. In this sense, the Agenda proposes 17 Sustainable Development Goals (SDGs), with 169 integrated and indivisible goals that cover the economic, social and environmental spheres.

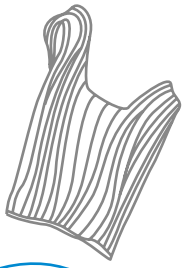
Regarding the problem of marine litter, the SDGs contain goals to address this issue - both explicitly and implicitly - as well as goals in waste and resource management, which represent an advance in the global development agenda. These SDGs include:

Goal 6: Ensure availability and sustainable management of water and sanitation for all.

Goal 12: Ensure sustainable consumption and production patterns It proposes changes in production systems, consumption habits and the use of resources in search of their sustainability.

Goal 13: Take urgent action to combat climate change and its impacts It includes objectives to stop the damage caused to the planet and to build a sustainable model to inhabit the planet without destroying it.

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. It proposes objectives to reduce and eradicate the dumping of waste and marine litter. The excessive fishing that causes poverty in many areas of the planet is violating and distorting the life of many species.



Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, from land-based activities, including marine debris and nutrient pollution.

1.2.2. United Nations Environment Assembly

The United Nations Environmental Assembly (UNEA) is the highest-level body for decision-making related to the environment. It has 193 linked member states - including Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama, and has recognized marine litter as a problem that must be addressed by the countries of the region. UNEA has adopted several relevant resolutions, including:

UNEP/EA.4/Res.6. Plastic trash and marine microplastics: promotes good practices, innovation in the design of products that reduce the release of microplastics, proper waste management, and the generation of technical and scientific information on marine litter, from the perspective of sustainable consumption and production.

UNEP/EA.4/Res.7. Environmentally Sound Waste Management: Promotes environmentally sound waste management and recovery of marine plastic litter that would not only improve human health and protects marine environments.

UNEP/EA.4/Res.11. Protection of the marine environment from land-based activities: encourages countries to exchange information, practical experiences, and scientific and technical knowledge, as well as to develop cooperation and collaboration activities, and the partnership between government institutions, organizations, communities, the private sector and other interested parties.

1.2.3. United Nations Decade of Ocean Science for Sustainable Development (2021-2030)

On December 5, 2017, the UN proclaimed the International Decade of Ocean Science for Sustainable Development, which runs from 2021 to 2030. This Decade will provide a common framework to ensure that ocean sciences can fully support country-level actions to sustainably manage the oceans and more, particularly to achieve the 2030 Agenda for Sustainable Development.

The Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) is the UN body responsible for supporting the sciences and global ocean services. This organization enables its 150 member states to work together to protect the

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

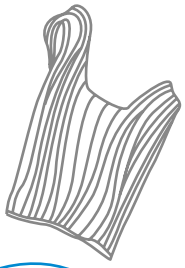
health of our shared oceans by coordinating programs in ocean observations, hazard mitigation, tsunami warnings and marine spatial planning.

The IOC also provides other UN organizations and agencies with a focus on ocean science, observations and data exchange.

1.2.4. The Ocean Conference

The Ocean Conference is an intergovernmental summit organized within the framework of the UN. Its objective is to unite efforts among countries to mobilize resources and propose and implement solutions to protect the oceans in places where some of the worst consequences of climate change and pollution are observed. The Conference is part of the efforts of the UN to comply with the 17 SDGs of the 2030 Agenda and with SDG 14, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".

These summits particularly bring together the governments of member countries and extend invitations to representatives of the business world and civil society, specialized agencies and other international organizations.



The first edition of the Conference was held at the UN headquarters in New York, between June 5 and 9, 2017, coinciding with World Oceans Day. The second edition of the Conference was scheduled to start in June 2020 but was postponed due to the coronavirus pandemic.

1.2.5. International Convention for the Prevention of Pollution from Ships

The International Convention to Prevent Pollution from Ships (MARPOL) was created and adopted in 1973 at the headquarters of the International Maritime Organization (IMO), as a mechanism to prevent ocean pollution due to operational or accidental factors in the operation of ships.

The Convention contains rules aimed at preventing and minimizing pollution caused by ships – both accidentally and because of normal operations – and currently includes six technical annexes (IMO, 2018):

Annex I. Regulations for the Prevention of Pollution by Oil.

Annex II. Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk.

Annex III. Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form.

Annex IV. Prevention of Pollution by Sewage from Ships.

Annex V. Prevention of Pollution by Garbage from Ships.

Annex VI. Prevention of Air Pollution from Ships.

Table 1 shows the status of the Convention in the different countries of the region.

Table 1. *Countries of the Northeast Pacific that have ratified the MARPOLConvention (Source: Essig, 2016)*

Country	Annex I	Annex II	Annex III	Annex IV	Annex V	Annex VI
Colombia	X	X	X	X	X	
Costa Rica						
El Salvador	X	X	X	X	X	
Guatemala	X	X	X	X	X	X
Honduras	X	X	X	X	X	X
Mexico	X	X			X	
Panama	X	X	X	X	X	X

1.2.6. Forum of Ministers of Environment of Latin America and the Caribbean

"Decision 1 on chemicals, marine litter and waste management" is adopted during the XXI edition of meetings of the Forum of Ministers of the Environment of Latin America and the Caribbean. This decision recognizes the importance of undertaking coordinated actions to effectively address the risks to human health and the environment associated with the accumulation of marine litter and microplastics. In addition, the decision encourages countries to develop and implement national and regional plans to reduce marine litter through policies, strategies and necessary programs that strengthen regional coordination together with the different programs and initiatives that promote marine litter reduction and strengthen cooperation, information exchange, knowledge, good practices and other similar activities.

Forum of Ministers of Environment of Latin America and the Caribbean. Costa Rica, 2022

In addition, in its XXII edition (February 1 and 2, 2021), the Forum adopted "Decision 1 on pollution", in which it highlights the importance of addressing the problem of marine and plastic litter through a preventive approach and of life cycle. In this decision, the governments of the region and other related actors are urged to address the existing barriers and facilitate the implementation of concrete actions to reduce pollution.

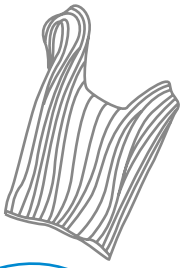
1.2.7. Regional Seas Programme

The Regional Seas Programme is one of the most representative initiatives of the UNEP. Since its inception in 1974, the Program has been based on a unique approach to protecting the coastal and marine environment. Its aim is to address problems related to the accelerated degradation of the world's oceans

and coastal areas through a "shared seas" approach. In other words, it seeks to involve neighboring countries in comprehensive and specific actions to protect their common marine environment.

In conjunction with the *Global Partnership on Marine Litter* (GPML) and the *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities* (GPA), today more than 143 countries have joined 18 Conventions and Action Plans for the management and sustainable use of the marine and coastal environment. The Regional Seas Programs managed by UNEP include the Greater Caribbean, the Mediterranean, the East Asian seas, the East African region, the Northwest Pacific, the West and Central Africa region and the Caspian Sea (The CLME+ Hub, 2020).

1.2.8. Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention, Colombia)



The Convention was ratified by 25 member States of the Wider Caribbean[2] and creates the framework for countries to achieve a balance between development and protection of the marine environment. The Convention is supported by three protocols: the Protocol Concerning Co-operation in Combating Oil Spills; the Protocol on Specially Protected Areas and Wildlife in the Wider Caribbean (SPAW); and the Protocol concerning Pollution from Land-based Sources and Activities (LBS or pollution protocol). In this sense, the Cartagena Convention urges members to individually or jointly adopt measures to prevent and control pollution caused by the dumping of waste from ships, aircraft or artificial structures at sea, waste, or discharges from land sources and from exploitation and exploration of the seabed and the subsoil.

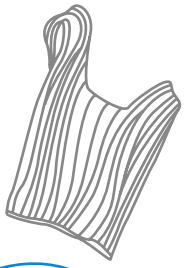
It should be noted that the Convention, through its various programs, projects and activities, has strengthened policies, laws and regulations on marine litter and provided information on best practices and management technologies to prevent and reduce pollution, also contributing to the strengthening of experiences and the development of other initiatives and projects in the region, as is the case of the Action Plan.

2 Antigua and Barbuda; Bahamas; Barbados; Belize; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Grenada; Guatemala; Guyana; Haiti; Honduras; Jamaica; Mexico; Nicaragua; Panama; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; United States of America; and the Bolivarian Republic of Venezuela.

1.2.9. Convention Agreement for the Protection and Sustainable Development of the Marine and Coastal Zones of the Northeast Pacific (Antigua Convention, Guatemala)

In 2002, the eight countries that make up the Northeast Pacific region signed this Agreement: Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama, and the Central American Integration System (SICA[3], for its acronym in Spanish), within the framework of the Conference of Plenipotentiaries of UNEP, in view of the need to protect and preserve the marine environment and coastal areas of the Northeast Pacific against all types and sources of pollution and environmental degradation[4].

In this sense, the main purpose of the Convention is to create a regional cooperation framework to promote and facilitate the sustainable management of marine and coastal resources, and effectively apply the different international instruments available in the eight countries that make up the Northeast Pacific. Likewise, it promotes the adoption of measures to prevent, reduce, control and remediate pollution of the marine environment and coastal areas, as well as other forms of environmental deterioration –including discharges of toxic substances into the sea and coastal areas– and pollution caused by ships, promoting the exchange of information and scientific and technological cooperation.



The Convention proposes the following measures:

i) Environmental planning and management of uses and activities in the marine and coastal areas.

ii) Improvement of environmental impact assessments of works and activities that are considered to affect marine and coastal areas (as appropriate).

iii) The identification of areas to be protected and the recovery of degraded habitats and ecosystems.

3 SICA was created by Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Belize and the Dominican Republic subsequently joined as full members. Colombia and Mexico are Regional Observers.

4 However, it should be noted that to date Colombia has not ratified the Agreement and is not a party to the instrument. For this reason, its participation in the process of this Action Plan has been as an observer. Its sole objective is to demonstrate the actions carried out in the country and contribute to the region in favor of the management of marine pollution in the Northeast Pacific based on national capacities, knowledge and experiences. Participation in this process and the contributions made shall not be interpreted as a sovereign or express manifestation of the will to ratify the Antigua Convention.

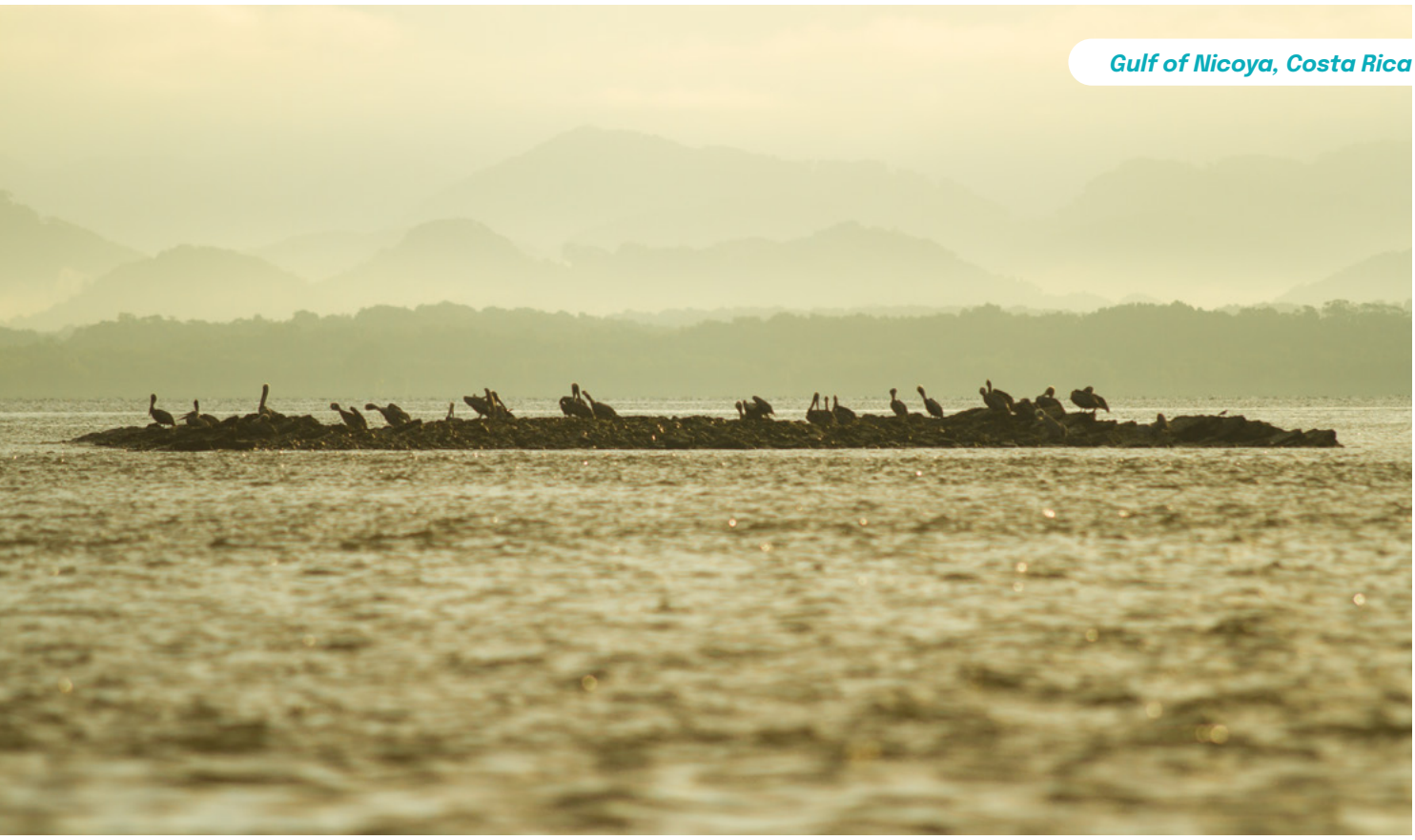
iv) The identification and protection of species of flora and fauna in danger of extinction, in addition to those that possibly require protection measures.

v) The application of prevention and precautionary criteria to the uses and development of activities that affect the marine and coastal resources of the region.

vi) The identification of coastal marine areas vulnerable to the action of extreme natural phenomena or events and to the rise in the mean sea level.

vii) The identification of coastal marine areas vulnerable to anthropogenic activities.

It should be noted that the Antigua Convention does not affect other rights and obligations of the countries pertaining to the conventions and special agreements concluded on the protection of the marine environment and the coastal zones of the region. Although not all countries have ratified the Convention to date, those that have done so have a relevant framework to promote cooperation among the countries of the Northeast Pacific in the field of marine litter through this Action Plan.



Gulf of Nicoya, Costa Rica

1.3. Objectives and Scope of the Northeast Pacific Regional Action Plan on Marine Litter

1.3.1. Objectives of the Action Plan

General objective

Promote the implementation of policies, strategies, actions and environmental measures for the sustainable management of marine litter in the ocean of the Northeast Pacific region, through cooperation, technical assistance, and the coordination of national, regional and international actors.

Specific objectives

i) Provide a set of coordinated regional strategies and measures to strengthen existing actions in the prevention, reduction and management of marine litter.

ii) Provide a guiding instrument to foster the strengthening of cooperation between governments, the private sector, international organizations, civil society, academia and other relevant actors that promote the protection, restoration, conservation and sustainable use of marine and coastal ecosystems.

iii) Facilitate and increase knowledge and education to prevent and reduce marine litter and establish the need to improve waste management.

iv) Promote research, development and investment in technologies and infrastructure to counteract the negative effects of marine litter.

v) Identify and facilitate funding opportunities to implement regional and national projects that contribute to marine litter reduction.

1.3.2. Environmental principles relevant to the Action Plan

The environmental principles are primary norms that give foundation, direction and coherence, to the design and construction of environmental regulations to allow society to ensure that economic development does not negatively affect the enjoyment of the rights to a healthy and balanced environment, individual and collective health, quality of life, individual and collective property, ethnic and cultural identity, and sustainable development (Bernaola Regout, 2015).

Within the framework of this Action Plan, the objective of the listed environmental principles is to guide the implementation according to its proposed objectives, actions and activities.

Regional integration

The Action Plan is presented as a tool to strengthen the capacities of each of the countries involved and contribute to deepening the regional integration process for the conservation of natural resources.

Transparency and access to information

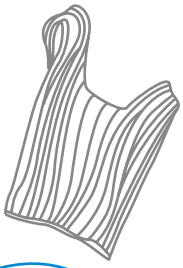
All public information related to the proper management of marine litter will be made available to the population, to respect the right of every person to adequate and timely access to said information.

Participation

Stakeholders have the right to participate in a timely and effective manner in the execution and implementation of the activities of the Action Plan.

Cost internalization

It is the responsibility of the waste generator -whether a natural or legal person-to provide integrated and sustainable management, in addition to assuming the costs involved and any other costs associated with the pollution they produced.



Shared responsibility

integrated waste management and the prevention of marine litter generation is a social co-responsibility, which requires the joint, coordinated and differentiated participation of all authorities, producers, importers, distributors, consumers and waste managers, both public and private.

Precautionary principle

In the absence of sufficient information and scientific data, decisions aimed at managing both marine-coastal resources and the problem related to marine litter must be based on the indications of the possible damage that activity can cause, even without scientific certainty.

Principle of non-regression

For prevention and protection measures to be binding and endure over time and for their impact to be significant, it is necessary that the policies and management of marine and coastal resources, as well as the problem of marine litter, continue to progress.

Ecosystem approach

It is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable manner. In this way, its application contributes to achieving a balance in conservation, sustainable use, and fair and equitable distribution of the benefits derived from the use of natural resources.

1.3.3. Geographical and temporal scope

The Northeast Pacific region of Latin America is made up of eight countries with direct access to the Pacific Ocean through the intermediate zone between the cardinal points of north and east, located at exactly 45 degrees from each other. It begins in the northern part of the continent, in Mexico, bordering Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama and Colombia (Figure 1).

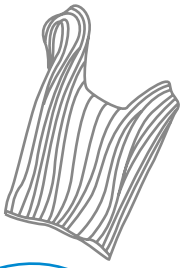
Figure 1. *Northeast Pacific Region (Source: own elaboration, based on Wikimedia Commons).*

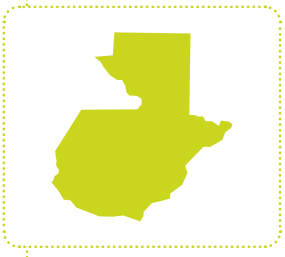
General information on the maritime, coastal and water geography of the countries that make up the region is provided below.

Mexico

This country has a large territory that places it among the 14 largest countries on the planet and with an ocean surface of 65% compared to land. Two marine areas protect the country: one on the Pacific side encompassing the Gulfs of California and Tehuantepec, and the other on the Atlantic side including the Gulf of Mexico and the Caribbean Sea. 68% of the continental coastline is on the coasts and islands of the Pacific Ocean and the Gulf of California. In addition, the coastal states of this area of the country have about 8,000 kilometers (km) of access (SEMARNAT, 2018).

Guatemala





The country is made up of 3 main watersheds: the Pacific with 18 main basins and an extension of 23,990 square kilometers (km^2) (22% of the national territory); the Caribbean Sea, with 7 main basins and an area of 34,096 km^2 (31% of the national territory), and the Gulf of Mexico, with 10 basins (the largest in the country) covering an area of 50,803 km^2 (47% of the national territory) (FAO, n.d.).

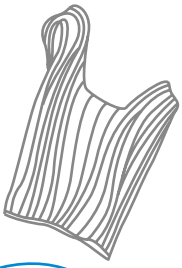
El Salvador

El Salvador is the only Central American country without access to the Caribbean Sea. It has more than 300 rivers, most of them short-course and non-navigable (FAO, 2015a). The most important is the Lempa, which enters from Honduras from the north and runs through the territory for 260 km to its mouth in the Pacific. Other important river currents are the Grande de San Miguel, Paz, Goascorán and Sumpul rivers. There are also several lagoons (Alegría, Olomega and Apasteque) and several lakes (Ilopango, Guija and Coatepeque) (MRE, 2019).

Honduras

The country is made up of 21 watersheds, 16 of which flow into the Atlantic Ocean and 5 into the Pacific Ocean (GWPCA, 2014). The islands and keys of the Caribbean -Utila, Roatán, Santa Elena, Barbereta, Morat and Guanaja- are of orogenic and coral origin, with a total area of 260 km^2; those of the Pacific are of volcanic origin, and among them the islands of Zacate Grande, Tigre and Meanguera stand out (Caribe Insider, n.d.).

Nicaragua



It has coasts in the Pacific Ocean and the Caribbean Sea (FAO, 2015b). Of its 21 watersheds, 13 drain into the Caribbean Sea, with an estimated area of 117,420 km^2 (about 90% of the national territory) and the remaining 8 drain into the Pacific Ocean, with an estimated area of 12,183 km^2, about 10% of the national territory (MD, 2004).

Costa Rica

The country is divided longitudinally by a system of mountains that divides the country into two hydrographic slopes: (i) the Caribbean slope, and (ii) the Pacific Ocean slope. The territory is divided into 34 main basins, 17 for each watershed, with sizes between 207 and 5,084 km^2. The largest hydrographic basin is the Grande de Térraba basin, in the south of the country, with an area of 5,084 km^2, which covers almost 10% of the territory's surface (FAO, 2015c).

Panama

Panama has an extensive hydrographic network with 52 basins: 18 on the Caribbean side and 34 on the Pacific side (FAO, 2015d). The country is surrounded by approximately 3,000 km of coastline, 1,701 km in the Pacific and 1,288 km in the Caribbean Sea, formed by coastal features such as beaches, dune fields, cliffs, inlets, estuaries, capes, points, etc. (ARAP, n.d.).

Colombia

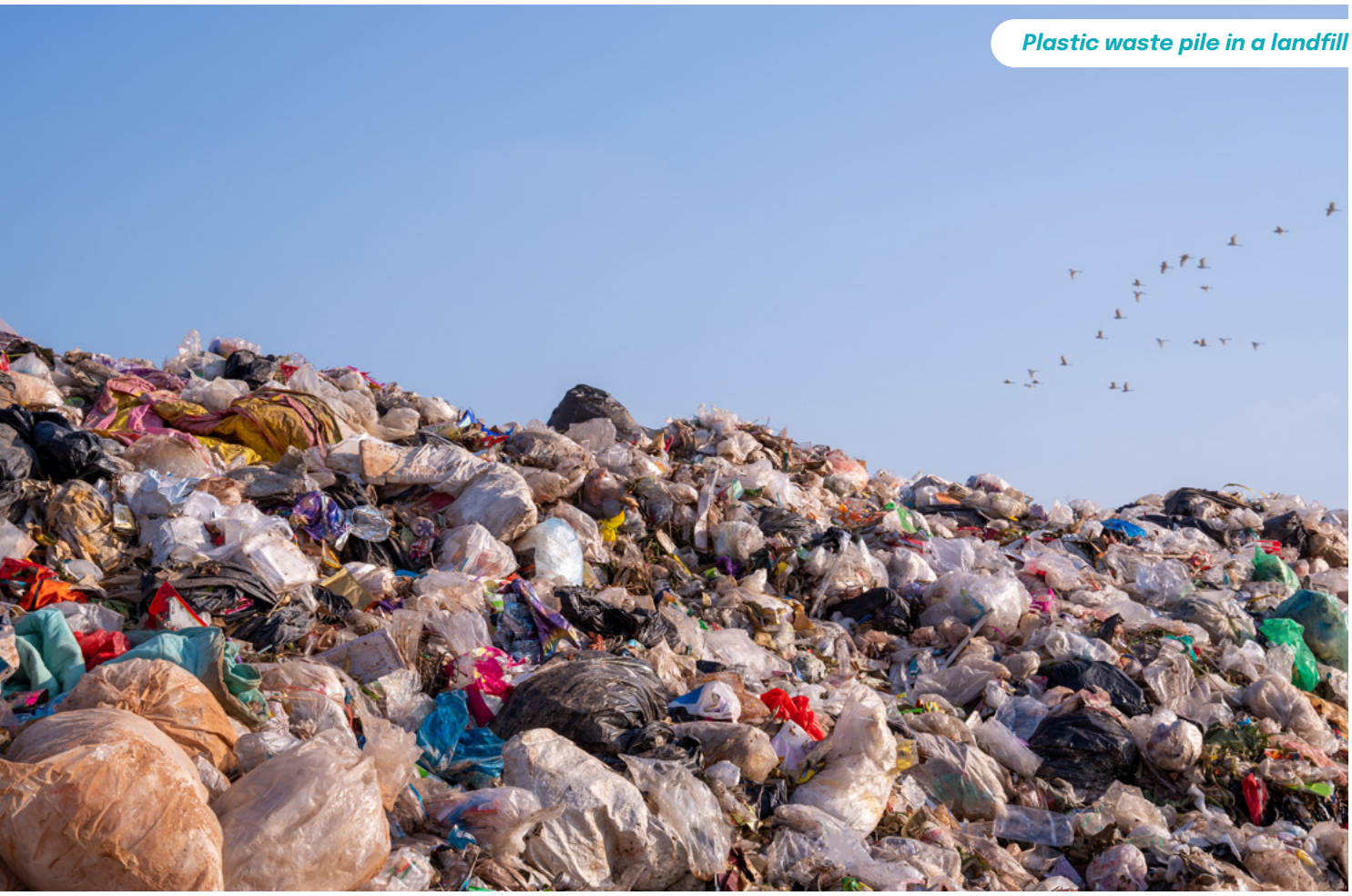
Its territory covers an area of 2,070,408 km^2, 55.15% (1,141,748 km^2) corresponds to emerged, continental and insular lands and 44.85% to maritime territory (589,560 km^2 in the Caribbean Sea and 339,100 km^2 in the Pacific Ocean); it also has 4,171 km of coastline (2,582 km in the Caribbean and 1,589 km in the Pacific) (CONPES, 2020).

1.4. Elaboration process of the Action Plan

The process of developing the Action Plan was interrupted by a series of events beyond the control of the participants, donors and organizations involved. This process, which began in 2018 and was planned to last one year, was affected, in the first instance, by one of the strongest eruptions in the history of the Volcán Fuego in Antigua, Guatemala, the site of the first meeting, which forced its cancellation. Later, the arrival of several tropical storms and hurricanes near Costa Rica, the new venue for the first meeting, once again forced its cancellation. Finally, when the first regional meeting was rescheduled for March 2020, the arrival of the Covid-19 virus reconfigured the world stage, making it impossible to hold regional meetings and forcing the construction process to be carried out in a virtual environment.

Seven virtual regional meetings were held, with the participation of all the countries of the Northeast Pacific and the purpose of discussing and deepening issues related to the definition of the structure of the Action Plan and the discussion of several of its sections. Likewise, eight bilateral meetings were held between the facilitating organization, MarViva Foundation and the country representatives. Representatives of environmental authorities, marine management and other relevant stakeholders, of marine litter and waste management, also participated in the process. All the information was collected using questionnaires by country and jointly standardized.

To contribute to the UN SDGs, specifically in compliance with SDG 5, "gender equality", this approach was added to the process of consultation and formulation of the Action Plan. In total, participation was defined with a balance of 56% women and 44% men.



Plastic waste pile in a landfill

Marine litter has increased significantly in the last few decades

2. Marine litter: global and regional focus

2.1 Global perspective

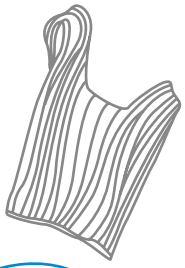
Marine litter is defined as “any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment” (UNEP, 2009). It may come from both land and marine sources. Among the former is waste generated in cities that ends up in the seas through rivers, drainage systems, or deposited directly on the coasts (UNEP, 2009), and the latter is waste from boats and fishing activities at sea. Debris can be deposited “directly (e.g. thrown by someone) or indirectly (e.g. through rivers, streams, drains, winds, storms, etc.), as a result of inadequate disposal on land” (ACOREMA, 2010).

Concern about marine litter has increased in recent decades (Derraik, 2002). Especially since the previous paradigm of thought focused on extraction and exploitation and considered the oceans to be vast and that human activities would have no effect on them and marine biodiversity (National Geographic, 2016). However, that way of thinking proved untenable as the amounts of debris accumulated in the marine environment were revealed. In addition to the multiple impacts, it has on the ecosystem, work, tourism and health, among others.

Excessive development has caused a resource previously considered infinitely capable of dissolving our waste to quickly find its limits. It is predicted that by the year 2050 there will be more plastic in the sea than fish (Ellen MacArthur Foundation, n.d.). Likewise, "UNEP calculates that each year more than 8 million tons of plastic end up in the oceans, which in the long run produces productivity losses of 8 billion dollars worldwide" (UNEP, 2018).

2.1.1. Land sources

An 80% of marine litter comes from activities on land, such as agriculture, livestock, ports, marine activities and countless other actions carried out by humanity (UNEP, 2009). In particular, the management of solid waste remains a pending task in almost all territories of the world. It is estimated that in Latin America and the Caribbean 541,000 t/day of urban waste are generated, and 145,000 t/day are still destined for landfills, including 17,000 t/day of plastic waste (PNUMA, 2018a). The UNEP estimates that 15% of marine litter floats on the sea surface, another 15% is located in the water column and 70% remains on the seabed (IMO, 2018).



One of the main components of marine litter is plastics, especially single-use plastics[5], which can constitute up to 70% of the material found in some marine spaces (UNEP, 2018). It should be noted that the versatility of plastics has made them one of the most used materials. They are among the fastest growing materials in the world in terms of production, especially in the last 20 years; today we find them in all aspects of daily life. Plastics are lightweight, strong, durable and cheap materials, characteristics that make them suitable for the manufacture of a wide range of products. These same properties end up being the reasons why plastics are a serious threat to the environment (Derraik, 2002), because their degradation can take hundreds of years (UNEP, 2018).

That said, a widely documented threat is microplastics (less than 5mm) or microbeads. These consist of small plastic particles that are fragmented, by the rays of the sun and the salinity of the water, as well as those added to pharmaceutical and beauty products, which end up draining into the sea. Recent studies have revealed the existence of high concentrations of microplastics in the oceans, to the point of forming an "invisible island" (UNEP, 2018), compromising marine ecosystems, and hindering their treatment and cleaning, precisely due to their size.

5 Bags, bottles, straws and stirrers, among others.

2.1.2. Marine sources

Main sources of marine pollution from activities in the marine space (20% of the total). Includes shipping activities (merchants, public transportation, recreational, naval and research vessels); fishing (vessels, sport fishing and aquaculture); offshore mining and extraction (oil and gas vessels and platforms); legal and illegal discharges into the sea; abandoned, lost, or discarded fishing gear; natural disasters; and wrecked and abandoned vessels. Marine litter dispersal and sedimentation is strongly influenced by ocean currents, tidal cycles, and regional-scale topography, including seabed topography and wind (UNEP, 2009).

Oil spill on the beach

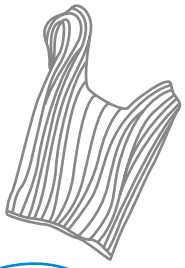
2.2. Problems and impacts associated with marine litter

2.2.1. Socio-economic impacts

i) Fishing activities and productivity

Marine litter negatively impacts the availability of fishing resources and fishing vessels. The greatest affectations are related to the obstruction of propellers by objects at sea, such as "abandoned, lost and discarded fishing gear (ALDFG)", which obstruct the correct functioning of the engines when they get stuck because of them, or cause damage to the hull of the boat (IMO, 2018), and also decrease sales due to contaminated products. Finally, the supply of the fishing resource is diminished by mortality due to marine litter (ACOREMA, 2010), and, therefore, economies - particularly family economies - are affected.

ii) Tourism, research and security



Economic damage to tourism and recreation has been identified. Visits to a country decrease because of beaches and coasts contaminated by garbage, damaging the aesthetic value of the places (Gregory, 2009). Along the same lines, marine biodiversity (a great attraction for national and international tourism) is altered by the accumulation of garbage in the seas, discouraging visits to these places, impacting the economic income of coastal inhabitants, and triggering poverty and crime in a country, which compromises the security of its inhabitants.

Regarding recreation and research, it should be noted that the lives of bathers, athletes and scientists may be negatively impacted, since "divers and swimmers may become entangled or trapped by remains of nets, ropes, cylinders, etc., limiting their movements, causing injuries, mutilations and even death due to exhaustion or drowning" (ACOREMA, 2010).

iii) Affected populations and marine litter management

Among the different documented impacts, without a doubt, the most vulnerable population is on the coasts, especially those who are dedicated to fishing, transport and tourism. In any case, it is difficult to differentiate who is more affected by the consequences of marine litter. From the previous paragraphs it is clear marine litter has effects in a wide range of areas and forms a kind of domino effect since when the marine environment is compromised, all other

Plastic trash in Costa de Pájaros, Puntarenas, Costa Rica, an area where fishing is the largest source of employment

human activities that revolve around it are affected in some immediate way. Fishermen and others who inhabit coastal areas and who benefit at different levels from tourism are directly exposed to the consequences of marine litter and its inadequate management.

One of the main causes of these alterations is the poor disposal and collection of solid waste, both on the coasts and in urban areas, causing large amounts of garbage to be discharged directly into the seas. This is due not only to deficiencies in public waste collection and treatment services but also to the lack of environmental education of the population, especially in the handling of single-use plastic products. The gaps in education are combined with the lack of citizen awareness about the environmental impact. As noted, before, many other consequences affect human beings in different areas.

iv) Human health

Marine litter increases the prevalence of diseases such as dengue, zika, chikungunya and cholera, among others, due to the incorrect disposal on beaches and coasts of materials such as tires and containers in which water is stored, which allows the proliferation of the mosquito that transmits some of

these diseases. Marine debris on beaches and shorelines also poses a risk to people, increasing the chance of cuts and the possibility of disease and infection (The Pew Charitable Trusts, 2020). It can also affect the health of communities, both coastal and urban, due to the ingestion of species that have previously consumed microplastics in the ocean, becoming a food safety issue (OMI, 2018).

2.2.2. Environmental impacts

i) Marine biodiversity and ecosystem balance

The decrease in the population of fish and other marine species causes alterations in biodiversity and the marine ecosystem since food chains and webs experience strong dynamic changes and impacts. An example is many plastic bags in the oceans, constantly confused with jellyfish, a species consumed by many marine predators (The Pew Charitable Trust, 2020). This confusion can lead to high mortality of predators such as whales and turtles (species that are also prey to other predators that would also be affected by their decline) triggering an overpopulation of jellyfish, which in turn can continue to disturb chains and food webs causing a serious imbalance.

Birds are also affected by plastic pollution

There is a risk that this scenario will be replicated in many other dynamics of marine species, triggering cases of malnutrition and starvation (National Geographic, 2018). Similarly, the example above shows that the damage caused by marine litter can be direct (through the ingestion of a residue such as plastic) or indirect (when a predator feeds on a species that consumed litter).

On repeated occasions, species such as seals, corals (Reichert et al., 2018), turtles, sharks, dolphins and whales, among many others, have been documented as victims of marine litter. The consequence is slow and painful deaths due to malformations caused by garbage, ingestion of waste (Derraik, 2002), or by entanglement that prevents them from reaching the surface to receive oxygen, causing death by suffocation. In addition to reef ecosystems, marine litter can alter "mangroves and estuaries that are vital as breeding, refuge and feeding areas for a wide variety of marine species" (ACOREMA, 2010).

ii) Marine soils and nutrients

Derraik (2002) points out that there is a potential danger to marine ecosystems due to the accumulation of plastic debris on the sea floor. [...] The accumulation of litter can inhibit gas exchange between overlying waters and interstitial waters in the sediments, and the resulting hypoxia or anoxia in the benthos can interfere with normal ecosystem functioning and alter the life composition at the bottom of the sea.

At the same time, excess marine debris prevents the sun's rays from "reaching plants and algae that depend on the sun to create nutrients. When these

Plastic pollution on the seabed

organisms are threatened, the entire food chain can be disturbed" (National Geographic, 2018).

iii) Introduction of invasive species and harmful pathogenic organisms

A final impact of marine litter lies in the introduction of invasive or exotic species into other ecosystems (Derraik, 2002). Studies have found that marine litter functions as a true means of transport for species to move long distances into new ecosystems, altering dynamics in food chains and webs.

A report from the National Oceanic and Atmospheric Administration (NOAA, 2017) concluded that:

> *"Regional dispersion through marine debris could encourage the expansion of organisms that reproduce sexually or asexually. Due to a great deal of debris that may be present, propagule pressure is greatly increased, allowing the organism to overcome genetic constraints and have a greater number of reproductive encounters".*

The correlation between marine debris and the spread of diseases such as Stony Coral Tissue Loss (SCTLD) is also being studied. It is very likely that, just as garbage serves as a "vector" for invasive species, it also operates with other types of microorganisms such as bacteria and viruses that affect marine flora and fauna.

Plastic waste pollutes the Gulf of Nicoya, Costa Rica

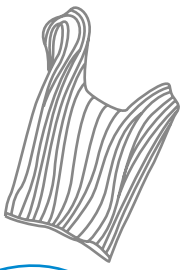
2.3. Regional perspective

2.3.1. Status of marine litter in the Northeast Pacific

The levels of marine litter identified in the region coincide with data reported in other regions, an alert that calls for urgent attention. Plastic -especially microplastics- is configured as one of the main dangerous materials in marine and coastal ecosystems.

Additionally, the legal and institutional frameworks of the States in the Northeast Pacific region present opportunities for improvement. Both the regulation of integrated waste management and the levels of prevention, collection, management, disposal and storage of solid waste can be improved to control and reduce the direct disposal of waste on the coasts or in urban rivers that transport the materials to the sea.

In Latin America and the Caribbean, 90% of waste is not harnessed and about 145,000 tons per day are sent uncontrolled dumps or landfills (UNEP, 2018a).



As a critical point, an integrated approach to the Northeast Pacific region is urgent. This region is characterized by having 101 protected marine areas along the entire Pacific coast - from Mexico to Colombia - in addition to the presence of the Thermal Dome as an area of interest for its contributions to biodiversity and the Gulf of Fonseca, which has been designated by the Convention on Biological Diversity (CBD) as one of the nine ecologically or biologically significant areas (EBSA) of the Central American Eastern Pacific (SCDB, 2020).

In this line, the States have assumed commitments, some national and international, to protect the marine wealth of these areas and demand a higher level of implementation and control in the management of solid waste to prevent the compromise of biodiversity and ecosystem services.

For example, data from Ocean Conservancy (2017) shows that in the annual international shoreline cleanup some of the top materials found include: cigarette butts, plastic bottles, bottle caps, food packaging, plastic caps, straws, stirrers, glass bottles, plastic bags and take-out containers.

Regarding the countries of the Plan and to visualize information as an inconclusive reference, according to the data collected during this cleanup, 1,436,377 garbage objects were found, which constitute 10% of the cleanup sampling in more than 100 countries[6].

In this sense, it is worth highlighting the current presence in the North Pacific of the region of the so-called Great Pacific Garbage Patch (GPGP), currently with an area three times larger than France. According to a three-year study published in the journal Scientific Reports, the Great Patch measures approximately 1.6 million square kilometers, which is about 16 times larger than previously estimated. That dimension is twice the size of Texas (Lebreton et al., 2018).

A study carried out in 2016 revealed that of the 260 million tons of plastic produced each year in the world, about 10% ends up in the ocean and eventually 70% of this mass sinks, causing damage to life at the bottom of the ocean. The rest floats in open water and usually ends up in gyres, circular movements of currents that form swirling conglomerations of plastic debris – called garbage patches – or end up washed up on beaches (Le Guern, 2020).

Large amount of plastic waste reaches rivers and seas every day

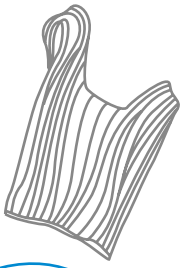
6 The total number of marine debris objects collected from all countries was 13,840,398 (Ocean Conservancy, 2017).

More than three-quarters of the GPGP mass was carried by debris larger than 5 cm, and at least 46% was made up of fishing nets. Microplastics accounted for 8% of the total mass, but also accounted for 94% of the 1.8 trillion pieces floating in the area (Lebreton et al., 2018).

Another early study on plastic debris in the open ocean produced the figures shown in Table 2 for plastic in surface water. It follows that the highest estimates correspond precisely to the North Pacific Ocean with 12.14, and the lowest to the Indian Ocean and the South Pacific Ocean (Cozar et al., 2014).

Table 2. *Range of global discharge of plastic waste into surface waters in the open ocean (Source: Cózar et al., 2014).*

Plastic waste, kilotons	North Pacific Ocean	North Atlantic Ocean	Indian Ocean	South Atlantic Ocean	Pacific Ocean	Total
Low estimate	2.3	1.0	0.8	1.7	0.8	6.6
Average estimate	4.8	2.7	2.2	2.6	2.1	14.4
High estimate	12.4	6.7	5.1	5.4	5.6	35.2



From another perspective, focusing the study on the hydrographic basin and recognizing the cross-border dimension of the problem of marine litter, the impact is observed in rivers and each country with materials that end up flowing into the regional coasts.

Mexico

The country is divided into 13 administrative hydrological regions (RHA, for its acronym in Spanish), formed by groups of basins considered basic units for the management of water resources. Of these regions, 7 drain towards the Pacific, and 6 are considered a priority given the degree of pressure resulting from the transformation of ecosystems due to human activities, soil degradation, river fragmentation, deterioration of riparian zones and the pressure water, among other factors.

There are 757 water basins, of which 8 are transboundary: 3 with the United States of America (Bravo, Colorado and Tijuana), 4 with Guatemala (Grijalva-Usumacinta, Suchiate, Coatán and Candelaria), and 1 with Belize and Guatemala (Hondo). The country's rivers and streams constitute a hydrographic network of approximately 633,000 km in length. There are 51 main rivers through which

Grijalva River, Mexico

87% of the country's surface runoff flows and whose basins cover 65% of the country's continental land area.

The waste that pollutes these bodies of water is generated by garbage that is not collected. In Mexico, although the average waste collection rate is 84%, in some states the collection rate is very low, and 188 municipalities do not have a complete collection service. It is worth to mention that 88% of these municipalities belong to the Pacific coast states.

Guatemala

In Guatemala, 3 large hydrographic springs are structured in 38 river basins, 194 inland water bodies, 7 lakes, 49 lagoons, 109 lagoons and 19 coastal lagoons. It is estimated that the country generates an average of 0.519 kilograms per inhabitant per day of residential solid waste and residues in urban areas. Although in most municipalities there is no classification between residues and solid waste, various types of waste with market value are collected informally; most are aluminum, plastic, paper, cardboard, scrap metal, brass and glass.

Regarding the composition of residues and solid waste, for 2014 it was estimated that 5% corresponded to organic matter; 9% plastics (rigid and polyethylene terephthalate - PET); 6% paper and cardboard; 2% glass; 1% cans; 1% household hazardous waste and residue; 14% sanitary waste; and the remaining percentage

corresponds to other mixed waste difficult to identify. In general terms, it is determined that 71% can be recovered for recycling and the remaining 29% could be subject to energy recovery or treatment for adequate final disposal (MARN, 2015).

In the *ranking* for municipal management carried out in 2016, it was determined that residue and solid waste management is low, which can be evidenced in the following evaluated variables: 26% of the municipalities of the country have current regulations or ordinances, updated and published in the *Official Gazette of Central America* and 13% have a management plan or operation and maintenance manual for the management of residue and solid waste (which does not guarantee its implementation).

Motagua River, Guatemala

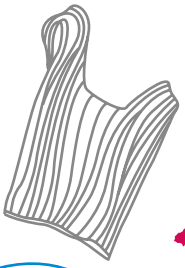
El Salvador

The Salvadoran territory is characterized by the fact that it within international basins. The Lempa River is the most abundant of all and is shared with Guatemala and Honduras. It has a total area of 17,790 km2, of which 10,082 km2 (56.67%) correspond to El Salvador, 5,251 km2 (29.52%) to Honduras and 2,457 km2 (13.81%) to Guatemala. In El Salvador, the Lempa River basin represents about 48% of the national territory; the Paz River is shared with Guatemala and the Goascora River with Honduras. There are 11 watersheds and are identified by the name

of the main rivers. All watersheds are in the process of deterioration and are affected by the exploitation of their natural resources and the contamination of the waters, both coastal and marine, due to the inadequate management of residual waters and residues.

El Salvador's coastline is 321 km long, from the Paz River on the border with Guatemala, to the Gulf of Fonseca, shared with Honduras and Nicaragua. Of the 262 municipalities in the country, 75 have a coastal zone. The entire coastal-marine strip has mangroves, the most relevant sites in terms of coverage being the Bay of Jiquilisco and La Unión, in the east of the country; Estero de Jaltepeque in the center; and Barra de Santiago to the west. The Jiquilisco Bay Ramsar Site concentrates 50% of the mangroves in the entire country with a mangrove area of 39,667 hectares and constitutes "the main mangrove ecosystem of the Central American Dry Pacific"; according to the MARN.

Regarding the disposal of solid waste, according to the Multiple Purpose Household Survey (DIGESTYC, 2017), in El Salvador the waste of 51% of households is collected by the public system, 0.98% by private services, 3.13% is deposited in containers and 0.04% is recycled. It is concluded in this way that 55.25% of Salvadoran households adequately dispose of waste, 36.03% burn it, and the remaining 8.67% dispose of it in other ways, the last two being the ones that have an effect direct contamination of surface waters or end up on beaches and oceans.



Honduras

The country has seen how most of its rivers are victims of the dumping of solid waste and other substances (Norori Solís et al., 2016). The Choluteca River - located in the southern region of Honduras - has experienced, over the years, the loss of its biodiversity, and today it is one of the most polluted rivers in the country. The causes are the dumping of wastewater without prior treatment, solid waste thrown directly into the river or dragged by runoff (Norori Solís et al., 2016) and due to the hydrography of the country, the waste flows into the oceans and ends up polluting the coasts.

The area of the Gulf of Fonseca, in addition to receiving the flow of the Choluteca River, also has the contribution of other important and very abundant rivers such as the Nacaome, the Lempa and the Goascoraón, in addition to basins shared with Guatemala and El Salvador.

It should be noted that in Honduras only 60 (20%) of the country's 298 municipalities have a department in charge of the waste collection service

Choluteca River, Honduras

and the final disposal appears as the critical phase in the management of solid waste since only 30 (11%) of the country's 298 municipalities have some type of infrastructure for the adequate final disposal of solid waste. Most of the country's final disposal sites are open-air dumps, and many are close to water sources or adjacent to coastal and marine areas (Gonzalez, M., personal communication, 2020).

Nicaragua

The country has 21 basins, 13 of which flow into the Atlantic and 8 into the Pacific (Palacios, F., personal communication, 2019). In the Pacific region, the basins and water bodies of the great lakes are at risk of degradation due to pollution and sediments, which also affects the integrity and potential of the ecosystem for the development of fishing, recreation and tourism activities. The areas most affected are the coastal areas associated with the Estero Real and tourist centers such as Pochomil and Casares, among others.

According to data provided by the Nicaraguan Ministry of the Environment and Natural Resources, in June 2019, the following waste was collected during a beach cleanup in San Juan del Sur: 18 vehicle tires, 2 outboard marine engines weighing a total of 386k, 24 kg of PVC pipes, 98 kg of plastic, 38 kg of cloth, 30 kg of wood, 22 kg of aluminum cans, 34 kg of metal and 80 kg of rubber and nylon, for a total of 689.63 kg.

According to accumulated reports from the Ministry of the Environment and Natural Resources on beach cleaning, in 2017 on the Nicaraguan Pacific beach, 894.3 m3 of solid waste were collected; 278.75 m3 in 2018 and 158.8 m3 in 2019. The most common waste is plastic bags, cutlery and bottles, glass bottles, fabrics, paper and cardboard.

Costa Rica

It has one of the most polluted rivers in Central America, since, according to water quality sampling carried out by the Dutch Water Quality Index (DWQI) and the Biological Monitoring Working Group (BMWG), the National Program for Monitoring the Quality of the Water Bodies, from the Water Directorate of the Ministry of Environment and Energy (MINAE, for its acronym in Spanish), in some points it has the highest level of contamination (MINAE, 2012).

The sewage of the Greater Metropolitan Area of the country flows into the Tárcoles River and its course is affected by some 2.5 million people who contribute to high contamination with solid waste, industrial liquids and domestic wastewater (State of the Nation Report Program, 2018). It empties directly into the Pacific Ocean, compromising the biodiversity and productive activities of the area such as fishing -which is seriously affected by the decrease in fish species- and tourism, in addition to the threats to the health of coastal populations due to pollution levels.

Tarcoles River, Costa Rica

In Costa Rica, around 4,006 t of waste is produced each day and its destination varies from burning to burial, deposit in unauthorized dumps or rivers (MINSA, 2017). 25% of the waste produced in the country is not managed in any way. The remaining 75% is managed in landfills[7], dumps, or collection centers from where it is sent for recycling inside or outside the country, an activity carried out mainly by private companies (MINSA, 2017).

In 2017, only 4.2% of the waste was separated before its final disposal to take advantage of any remaining value, especially as raw material (MINSA, 2017). The 75% corresponding to management contrasts with the estimated 65% of recovery and shipment to a final disposal site indicated by the General Comptroller of the Republic (CGR, 2016).

Panama

The 5 provinces with the largest population and human economic activities (Panamá, Panamá Oeste, Chiriquí, Colón and Coclé) generated 80% of the waste in the country. These are also territories with many hydrographic basins on both slopes: Caribbean (Atlantic Ocean) and Pacific, potential waste transporters to both oceans (González, 2005).

Other numbers (González, 2005), indicate that 8 rivers and 64 streams carry a wide variety of waste, including solids, which flow into the Bay of Panama in the country's Pacific:

Colon, Panama

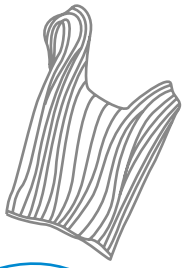
7 There are 28 landfills (10 in the process of technical closure), 2 landfills converted to sanitary landfills, 6 sanitary landfills (3 in the process of technical closure).

The National Director of Environmental Education of the National Association for the Conservation of Nature (ANCON, for its acronym in Spanish), Miguel Zimmerman, stated that 83% of the waste found on the beaches of Panama City, as well as the rest of the country, comes from general activities on the coasts. He has indicated that 40% of the waste collected on the beaches is plastic bottles and a large amount comes from the rivers[A].

In summary, the study "Volume and characterization of marine litter" concludes that 61,553 t/year of urban solid waste are thrown into the sea through sewers and drains, and 40,657 t/year of rural solid waste travel through rivers and streams.

Likewise, in the capital city around 2,300 t/day are produced, of which 30% (575 t) end up in the environment, rivers, coasts and seas, the majority made of plastics (UNEP, 2018b).

In the annual beach cleanup carried out in Panama, only in 2012 between 60 and 70 tons of garbage were collected, mostly waste cans, plastics, cardboard, paper, tires, pipes, ropes, toys, plastic pools, boat nets, shoes, flip-flops and all kinds of clothing.



A 75% of the waste produced in Panama is deposited in landfills, while the rest is burned in a haphazard manner or dumped in rivers and streams, which then go on to pollute seas and beaches (Farnum and Kelly, 2019).

Colombia

The panorama is no different from other countries. They perceive the effects both in the Pacific and in the Atlantic. In both oceans, from La Guajira to Buenaventura and Tumaco, passing through Chocó, artisanal fishing, which is the daily livelihood of the people, is deteriorating (Acosta Coley and Olivero Verbel, 2015). According to data provided by the National Navy, 80% of the waste comes from the mouth of the rivers and is dragged by the sea. The other 20% is thrown from ships, boats and canoes, which coincides with global marine litter data (Williams et al., 2016).

In the "Diagnosis of microplastic waste in marine areas" of the Ministry of Environment and Sustainable Development (MADS, for its acronym in Spanish) and the José Benito Vives de Andrías Marine and Coastal Research Institute (INVEMAR, for its acronym in Spanish) (MADS and INVEMAR, 2017), it was estimated that the departments of Nariño and Chocó, on the Pacific coast, contribute most of the

A Panamá América (2017). *Ríos Contaminados*. Available at: https://www.panamaamerica.com.pa/opinion/rios-contamina-dos-110228

Choco River, Colombia

solid waste to natural water bodies, due to the low or non-existent coverage of the sanitation service and the unavailability of other final waste management alternatives. In the same study, it is concluded that all the beach stations studied present macroplastics (2,250 articles), all classified as single-use objects; 9,984 microplastics presented as fragments and filaments were also found.

During a mapping carried out on the 10 most polluted rivers in Colombia, the case of the Otún and Consota river basins stands out, where tourism has increased pollution since visitors dump large amounts of waste every weekend. It is preliminarily concluded that it is essential to promote sustainable tourism both on the coasts and in urban basins that can drag waste into the seas.

As in the rest of the countries in the region, it has been established that a high percentage of the garbage that is thrown into the sea is plastic (MADS and INVEMAR, 2017). This material is one of the main challenges facing the States of the Northeast Pacific and requires urgent attention at all levels of action.

2.3.2. Governance structures in the management of marine litter

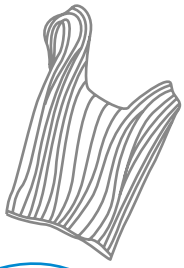
The countries that make up the Northeast Pacific Region present a series of similarities, and some subtle -but important- differences in terms of state/ institutional attention given to marine litter.

As mentioned throughout the document, the focus on marine litter as a problem due to state activity is of recent date, so none of the States has an exclusive structure for dealing with the problem. Its recent attention has been born from the official instances dedicated to conservation and marine and health issues. In all the countries of the region, the management of marine litter – from land or marine sources – has been framed in the regulations related to waste management.

In this line, states such as Mexico, Panama, Colombia and Costa Rica have regulations to prevent marine litter through laws related to waste management. In others, the approach is born from the perspective of conservation, as in Guatemala, El Salvador, Nicaragua and Honduras, where the main powers in the prevention and management of waste are found in the environmental authorities.

Authorities and institutions responsible for the prevention and management of marine litter from land-based sources

In the region, it is common in all the countries that the political and administrative stewardship of marine litter is shared by the Ministries of Environment, Health and Housing or similar authorities. In all the countries the Congresses or Legislative or National Assemblies are the maximum authorities that emit the laws of general application and wide scope.



In the region, there is also a strong delegation of administrative management, implementation and supervision to local authorities or governments (mayors, municipal councils, municipalities, associations, and other competent environmental authorities).

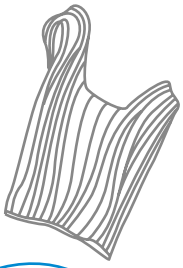
From the point of view of land-based sources of marine litter, the main authorities involved are

- Secretariat of Environment and Natural Resources (Mexico).
- Municipalities and Ministry of Environment and Natural Resources (Guatemala).
- Ministry of Public Health and Social Welfare (Guatemala)[8].
- Secretariat of Health (Honduras).

8 Some examples of coordination spaces led by the Ministry of Environment and Natural Resources are: Mesa Coordinadora para la Gestión y el Manejo Integral de los Residuos y los Desechos Sólidos, advisory instance, created and presided by Ministerial Agreement 666-2013, formed by institutions and public and private sectors related to the area, and Mesa Técnica para la Gestión Integrada Marino Costera de Guatemala (MMC), created by Ministerial Agreement 154-2019, whose function is to advise on the implementation of the Coastal Marine Policy and its Program; it is formed by State institutions that have direct competence with oceans, seas and coasts.

- Municipalities and Secretariat of Natural Resources and Environment (Honduras).
- Ministry of Environment and Natural Resources (El Salvador).
- Ministry of Environment and Natural Resources (Nicaragua).
- National Institute of Fisheries and Aquaculture (Nicaragua).
- National Institute for the Advancement of Municipalities (Nicaragua).
- Ministry of Health (waste management rector in Costa Rica).
- Ministry of Environment and Energy (Costa Rica).
- Urban and Residential Sanitation Authority (Panama).
- Ministry of Housing, City and Territory, Vice-Ministry of Sanitation (Colombia).
- Ministry of Environment and Sustainable Development (Colombia).
- Ministry of Commerce, Industry and Tourism (Colombia).
- National Planning Department (Colombia).

Prevention and management of marine litter from ships or boats in the region



In all countries, it corresponds to the maritime or marine authorities in general, as follows

Mexico: Secretary of the Navy, through the Port Captaincies and Maritime Affairs Unit (UNICAPAM, for its acronym in Spanish).

Honduras: General Directorate of the Merchant Marine (DGMM, for its acronym in Spanish), through the Marine Environment Protection Department.

Nicaragua: General Directorate of Aquatic Transport.

Colombia: General Maritime Directorate (DIMAR).

Costa Rica: Maritime-Portuary Division, Navigation and Safety Directorate.

El Salvador: El Salvador: The Maritime Port Authority, in coordination with the Ministry of the Environment and Natural Resources, regulates the management and final disposal of waste generated in the normal operations of ships, and for such purposes, guidelines have been prepared for the "Protection and prevention of pollution in the coastal-marine zone" and for the reception, handling and final disposal of waste generated in normal ship operations.

Guatemala: The powers are distributed between the Ministry of Agriculture, Livestock and Food, the Department of Prevention of Pollution from Ships (of the General Directorate of Maritime Affairs of the Ministry of National Defense) and the National Port Commission of Guatemala, chaired by the Ministry of Public Finance.

Panama: Due to the interoceanic canal, the Panama Maritime Authority, in compliance with the International Maritime Conventions, and as controller of the Flag State, Coastal State and Port State, regulates and supervises the integrated management of waste from ships and the national port system. On the other hand, in coordination with the Ministry of the Environment, it ensures compliance with the control and prevention of marine pollution, and the ordering of maritime traffic concerning protected marine-coastal spaces (which are under the responsibility of the Ministry), guaranteeing the conservation of marine and coastal ecosystems. All this is consistent with the competence of the Aquatic Resources Authority of Panama in matters of litter generation by the fishing sector.

Lastly, always in consideration of the relevant authorities, it is common that in all the countries of the Northeast Pacific region the institutional competence regarding the training, awareness and education in general of the population in prevention and integral management of waste is a delegate to the Ministries or Secretaries of Education.

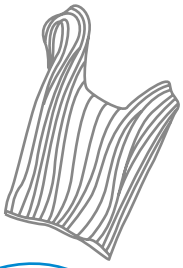
Campaign on biodegradable plastics launched by MarViva Foundation. Costa Rica, 2021

2.3.3. Policies and regulations to address marine litter

Recently, countries have issued some important regulations on marine litter prevention and integrated waste management. Specifically, the countries of the region have advanced in the issuance and approval of federal, national and local regulations for single-use plastics, to prevent waste from negatively impacting marine and coastal spaces. The Appendix contains a summary table of the institutions and main regulations at the level of marine litter and related issues.

Guatemala

This country has been a pioneer in the approval of regulations for the restriction or regulation of single-use plastics. Initially at the local level – through 15 municipal ordinances until May 2019 – and in September 2019 at the national level through Government Agreement 189-2019, prohibits the use and distribution of single-use plastic bags, straws (including disposable plastic mixers or stirrers) and disposable plastic or expanded polystyrene food storage and transfer containers. It applies to all of them in their different presentations, shapes and designs.



The problem of marine pollution is visibly identified as a priority in the public policies and agendas of the country's authorities, the most representative examples being:

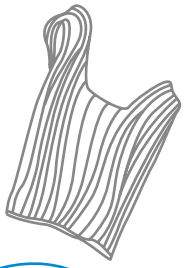
- National Development Plan: K'atun Nuestra Guatemala 2032.
- Government Agreement 281-2015: National Policy for the Integral Management of Residues and Solid Waste.
- Government Agreement 328-2009: Policy for the Integral Management of the Coastal Marine Areas of Guatemala.
- Integrated Coastal Marine Management Program for the Pacific Guatemala 2018-2032.
- Government Agreement 329-2009: National Climate Change Policy.

El Salvador

In February 2020, the Law on integrated waste Management and Recycling Promotion was approved, and article 1 establishes as its purpose "to achieve the use, the reduction in the generation of waste, the promotion of reuse, repair, recycling and other types of valuation, including plastic.

Currently, the "Guidelines for the reduction of single-use plastic for public institutions" are being developed to promote actions aimed at eliminating plastic in Government institutions and promote voluntary agreements with other government sectors. Subsequently, these guidelines will be validated with the support of the Spanish Agency for International Cooperation for Development through the project "Development of priority instruments and pilot separation and recovery plans for the integrated management of plastic in El Salvador.

Honduras



Currently the island municipalities of the Bay Islands, Roatán, Utila and Guanaja -the municipality of Puerto Cortés, in Cortés- have issued bans on single-use plastic through municipal ordinances. It also has a bill for integrated waste management that includes a chapter on the regulation of single-use plastics.

Along the same lines, the Secretary of Natural Resources and Environment has been carrying out training actions to promote the reduction of single-use plastic bags and as a result, some supermarkets charge for the bags. The "Mi Playa Limpia" (My Clean Beach) program was also developed with the aim of training business owners and the population of coastal municipalities in the reduction of single-use plastics. Metal garbage containers have also been built in the shape of bottles and fish and are installed on the beaches to separate waste.

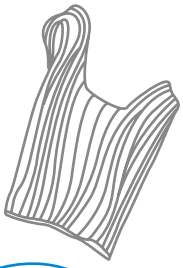
Similarly, as of 2015, the Honduran Maritime Authority has focused efforts on implementing the coastal cleanup program and has established an agreement with the Ministry of Education to provide training on the integrated management of solid waste. Regarding this last program, it is worth mentioning that as of 2021 a different approach will be used aimed at collecting reliable statistical information regarding the origin and type of waste found in marine and coastal spaces.

Nicaragua

Currently, the Ministry of the Environment and Natural Resources is carrying out a process to update the current regulatory framework about residues and waste, considering that the Environmental Technical Standard 05 014-02 "for the management, treatment and final disposal of non-hazardous solid waste" is from 2002. This standard establishes technical and environmental criteria that must be met to protect the environment during projects and activities for the management, treatment and final disposal of non-hazardous solid waste. However, the country's regulatory instruments include plastics as non-hazardous waste but leave out microplastics and other waste.

Costa Rica

The country has two national laws that prohibit the commercialization and free delivery of single-use plastic bags, straws (reeds, straws and the like)[9], and expanded polystyrene packaging[10]. The executive power has promoted and enforced the "Single-use plastic substitution strategy", which includes education campaigns, inventory of raw materials for possible plastic substitutes, and municipal monitoring to discourage single-use plastics. Lastly, a series of Executive Directives have been issued to prohibit the sale and entry of single-use plastics into Wildlife Protected Areas, as well as regulate the use and purchase of plastics in public institutions. A Technical Standard is currently being developed to regulate the labeling of plastic products.



Colombia

Colombia has the National Circular Economy Strategy, which recognizes the national government's policies related to the SDGs, green growth (CONPES, 2018), integrated solid waste management (CONPES, 2016), and productive development policies that promote linking and strengthening value chains. Similarly, the strategy supports the goals of the Paris Agreement and productive transformation, contributing to the fulfillment of SDG 12 "Responsible consumption and production", SDG 14 "Life below water", and SDG 17 "Partnerships for the goals".

The National Development Plan 2018-2022, "Pact for Colombia, pact for equity", lays the foundations for Colombia to become a bi-oceanic power to increase

9 Law No. 9786 To Combat Plastic Pollution.

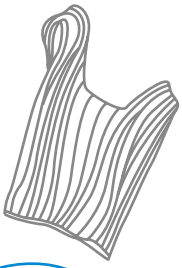
10 Law No. 9703 For the Prohibition of Expanded Polystyrene, reform of the Law for Integral Waste Management.

competitiveness and development, guaranteeing security in the ocean territory and sustainably take advantage of economic opportunities that arise from them.

The National Roundtable for the Sustainable Management of Plastic was created in this context, aimed at articulating and executing actions in all phases of the plastic life cycle to improve environmental, economic and social sustainability. The Plan for the Sustainable Management of Single-Use Plastics was formulated within the framework of this Roundtable.

At the same time, regulatory instruments have been developed to prevent and close the cycle of plastics. Among these, the following resolutions stand out

- 668 of 2016, which regulates the rational use of plastic bags.
- 1407 of 2018, to regulate the environmental management of paper, cardboard, plastic, glass and metal container and packaging waste.
- 1481 of 2018, which establishes the form and requirements to submit to the National Environmental Licensing Authority a request for certification related to differential rates and the non-accrual of the national tax on the consumption of plastic bags.
- 2184 of 2019, which modifies Resolution 668 of 2016 and adopts the "National Color Code for separation at the source".
- 1558 of 2019, which prohibits the use and entry of single-use plastics in areas of natural national parks with an ecotourism approach.

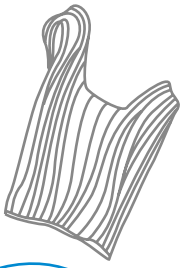


Panama

It is one of the countries with the most regulatory progress in preventing the generation of plastic waste. In Panama, a law was approved that establishes a "Zero Waste" policy to reduce waste and promote its proper management. The country also has a Law in force since July 2019, which prohibits the commercialization and free giving of single-use plastic bags, and in 2020 Law 187 was approved to regulate the reduction and progressive replacement of single-use plastics for 2021. Currently, the National Action Plan on Marine Litter is being prepared through a participatory process that informs, based on reality, about initiatives that are promoted in the country, the needs of the population and their interest in improvement, to develop priority actions to minimize the problem of marine litter.

Mexico

In Mexico, most state governments have made changes to their local legislation to prohibit or restrict the use of some plastic products, especially straws, plastic bags and expanded polystyrene (Styrofoam) containers. Some states have extended the bans to other products such as PET bottles, plastic rings for containers, plastic cutlery and balloons. In most cases, there is the option of using other materials such as biodegradable plastics or products that demonstrate that a certain percentage of recycled material has been used. A particular case is the state of Quintana Roo. In 2019, the Law for the Prevention, Integrated management and Circular Economy of Waste was published, which directly establishes the Extended Responsibility of the Producer for containers and packaging. In this case, the regulated subjects must prepare an Extended Responsibility Plan, in addition to organizing and financing the collection and treatment of waste from these products.



Although no law in the country prohibits single-use plastics, the General Law for the Prevention and Integrated management of Waste promotes principles to prevent and minimize the generation of waste, shared responsibility and the recovery of waste, through policy instruments such as the National Program for the Prevention and Integrated Management of Waste, the National Program for the Prevention and Integrated management of Special Waste and Management Plans. It also contemplates the development of an official standard that establishes compliance criteria for environmental and technological efficiency in the case of materials used in the production of plastic and expanded polystyrene products, containers and packaging.

2.3.4. Initiatives for the integrated management of marine litter in the Northeast Pacific

In addition to the regulatory framework that is, directly and indirectly, related to the reduction and prevention of marine litter in each of the countries of the region, it is also necessary to highlight the best practices that promote the protection of marine and coastal ecosystems, which in turn drive the reduction of marine litter. To this end, this section highlights success stories from countries in different areas: i) cleaning programs, ii) floating waste trap systems, iii) certifications, iv) recycling and proper management of waste and v) international cooperation and civil society.

Volunteers collect garbage on the beaches

i. Cleaning Programs

Mexico
Clean Beaches Program

Its objective is to protect the health of visitors, improve the environmental quality of national beaches and raise the level of competitiveness of tourist destinations, through coordinated actions in the three levels of government, as well as the private, social and academic sectors.

Since 2003, when the Clean Beaches Program began, investment in sanitation programs by the National Water Commission totals 7,260 million dollars.

To date, 38 beaches in 19 municipalities in 10 states have a valid certificate -according to the NMX-AA-120-SC-FI-2016 standard. Similarly, Mexico is the country in the Americas with the most Blue Flag awards and the nineteenth in the world, since it registers 62 beaches, 3 marinas and 25 sustainable tourism boats in 13 municipalities located in six states of the Republic.

A **91%** of the water collected in the coastal municipalities is purified in the **321 existing treatment plants,** which represents a **sanitation level of 91.5%.**

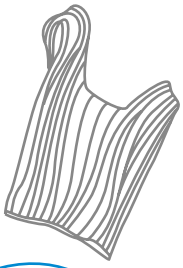
Honduras

Beach and Coastal Cleanup Program

Starting in 2015, the country implemented a shore and coastline cleanup program led by the General Directorate of the Merchant Marine in coordination with the Environmental Authority, the Ministry of Education and the Honduran Naval Force, among other entities.

In an integrated and parallel manner, it also includes training in the management and proper handling of waste, awareness campaigns and other activities to inform about single-use plastics. It should be noted that a new methodology has recently been implemented focused on collecting information on the origin and types of waste accumulated in marine and coastal ecosystems to obtain data to support decision-making and management of the problem.

More than 2,800 t of solid waste have been collected in **more than 130 km** of coastline, of which approximately **30 t belong to waste** collected on the beaches of the **Gulf of Fonseca.**



Costa Rica

Clean Rivers Strategy

It is an initiative led by the Vice Ministry of Water and Seas of the MINAE and the Costa Rican Institute of Aqueducts and Sewers, together with different national entities and organizations. This initiative arises from concern about the state of pollution of urban rivers due to inadequate management of solid waste, pollution by chemical and industrial products and dumping of untreated and residual waters, among others. This strategy aims to recover urban rivers through the implementation of actions in five main areas: i) strengthening of existing territorial management governance mechanisms, ii) improvement of the quality of water resources, iii) integrated management of solid waste, iv) recovery of riparian ecosystems and reduction of the impact of invaded protected areas and v) implementation of a communication strategy.

Guatemala

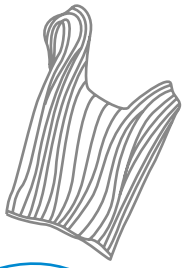
Clean Beaches Program

The program began in 2013 and consists of accompanying, advising, training, and providing materials and tools to local governments for the integrated management of residues and solid waste, especially during Easter Week when visitors increase in tourist areas near the sea or lakes, thus avoiding negative impacts. Since 2013 an approximate average of 955.46 t/year has been collected.

In 2019, 32 beaches were served in the departments of San Marcos, Retalhuleu, Suchitepéquez, Escuintla, Santa Rosa, Jutiapa, Sololá, Izabal and Petén. Fifteen "Plastic-free beaches" devices were also installed, which collected 63.84 t of waste and solid waste, preventing them from reaching the water.

On the public beach of Panajachel, a land cleaning rally was held with the participation of 63 officials from the MARN: as well as an underwater rally with 50 divers from the Professional Association of Diving Instructors and the Panajachel Boaters Association. At the end of the activity, 2.5 t of solid waste was collected.

In 2019, around **746 tons of solid waste** were collected and 1,536 people participated in the cleaning brigades.



Panama

EPIC Program

The Ocean Legacy Foundation and Nestlé Waters, with the support of the Ministry of the Environment and other strategic partners, initiated the Engagement in Plastic-free Innovation for Change Program (EPIC) in the Las Perlas archipelago, intending to raise awareness among affected populations about the correct use, collection and recycling of plastic.

The program is the result of a global effort that seeks to immediately combat pollution, while stimulating the circular economy of plastic, as crucial components in the preservation of nature and ecosystems for future generations.

OCEAN LEGACY FOUNDATION + Nestlé Waters + REPÚBLICA DE PANAMÁ — GOBIERNO NACIONAL — | MINISTERIO DE AMBIENTE

El Salvador

The Ocean Cleanup

In December 2019, a Cooperation Agreement was signed between the MANR and The Ocean Cleanup Foundation to extract plastic waste from the Lempa River using an advanced collection system called "Interceptor". This system consists of a barrier that diverts floating plastic debris to an autonomous barge where it is collected until it is unloaded and removed.

In addition, it contemplates actions to improve methods of measuring and monitoring plastic waste in rivers, investigate its quantity and quality, and establish adequate points for the interception of plastic waste.

The barge, which **operates with solar panels** and will work 24 hours a day, can **store up to 50 cubic meters (m^3) of waste,** allowing it to operate even in the most polluted tributaries.

The Ocean Cleanup extracts plastic waste from rivers and seas

Trap systems capture waste and prevent it from reaching the ocean

ii. Floating debris trap systems

Guatemala

In 2016, the environmental authorities of Guatemala, alarmed and concerned about the levels of contamination by the solid waste in the Motagua River and its effects on the Atlantic coast, developed "Floating waste traps" to contain the waste. Based on the experience of the trap systems used in Lake Amatitlán, the net was perfected and after several pilot plans and various tests, the traps were installed.

The first formal trap installed by the MARN was in the community of Quetzalito, located near the mouth of the Motagua River. After three months of volunteer work, members of the community were hired for the phases of collection, separation and processing of waste, contributing to local employment. In addition to the trap, a waste treatment plant was implemented.

Later, traps were installed in several rivers with the support of the municipalities, the Development Council and other community entities. Private and public schools, universities and groups have been trained in the development and implementation of waste traps since they are considered useful devices in the fight against marine litter.

As of March 2019, 121 traps had been implemented throughout the country by the delegations of the MARN, in addition, technical assistance in their production has been provided to countries in the Northeast Pacific region, such as El Salvador.

El Salvador

SOS Clean Rivers Program

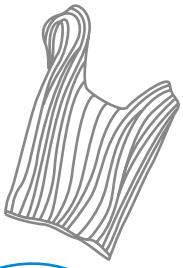
This is a program of the MARN that are in the final phase of formulation and aims to clean six main rivers in the country: Grande de San Miguel, Acelhuate, Sucio, Paz, Goascorán and Suquiapa. The four actions that will be contemplated in the Program are:

Extraction of solid waste at critical points.

Emergency meeting with mayors in the identified municipalities.

Elaboration and installation of riobardas (waste traps).

Reduction and replacement of single-use plastics.



Within the framework of the Program, the Ministry launched the "Riobarda Challenge El Salvador" initiative, whose objective is to install mesh traps in critical points of the most polluted rivers in the country.

Riobardas are nets made from discarded plastic bottles of specific sizes. The bottles are placed across the rivers to retain, extract and then, valorize the floating waste that is dragged by the flow through recycling companies.

To date, seven waste traps have been installed in the El Sauce, Concepción de Oriente, La Canoa, Usulután-Captain Lazo, Los Milagros de San Antonio del Monte, Grande de La Libertad and El Tunco de Tamanique rivers with the aim of recovering and recycling plastic waste.

Nicaragua

Nicabardas

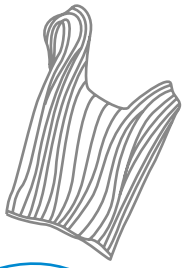
The country is working on the installation and placement of the "Nicabardas" (waste traps). Between 2019 and 2020, 33 waste traps with lengths between 10 and 310 m were installed in the rivers of 15 departments (León, Managua, Masaya, Rivas, Carazo, Jinotega, Matagalpa, Chontales, Granada, Masaya, Boaco,

Río San Juan, Estelí, Chinandega and Nueva Segovia), for a total of 1,075 linear meters. For this purpose, around 30,100 plastic bottles of 1 to 3 liters were used. The manufacture and installation of the waste traps is achieved thanks to the support of the municipal mayors, the Guardabarranco Environmental Movement, the National Police, the Naval Force, the Nicaraguan Army and stakeholders from local communities. The result to date is the collection of more than 973 m3 of suspended solid waste.

In 2021, 8 of the 32 Nicabardas in the country were installed, reaching 25% of the commitment agreed by the authorities. In addition, in parallel, actions of the Environmental Education Plan and inclusion of values are implemented, as well as house-to-house talks to sensitize the population for the reduction and better management of waste, especially plastic.

Panama

Barrier or Trash (BOB, for its acronym in Spanish)" on the Matías Hernández River



BOB is a floating barrier that traps waste in the Matías Hernández River to prevent it from reaching the coast and the mangrove swamp, facilitating the collection of waste in the river.

With the first rains and the increase in debris, BOB has proven to be an effective way to tackle marine debris. For example, in April 2019, BOB was exposed to its first heavy rain of the year, resulting in tons of trash filling 470 jumbo bags. Among the most important items collected were 8 discarded refrigerators.

The BOB system has been effective and **its replication is intended in other rivers** with the same problem.

As of December 2019, more than 10,000 bags, over 70 tons of garbage had been collected. Among what was collected there were more than 50 refrigerators, hundreds of tires, strollers, suitcases and two 3m long pipes used in aqueduct and sewage systems. In 2020, also starting in April, the situation was similar and the increase in rains and the river flow led to an exorbitant increase in waste. Once again BOB proved that it is a reasonable way to collect waste in the river.

Two years of implementation and testing in heavy rains have enabled improvements to the BOB system making it more efficient.

Ecological Blue Flag Program, Costa Rica

iii. Certifications

Costa Rica

National Standards for RCM Plastic

The Institute of Technical Standards of Costa Rica developed a national technical standard that establishes requirements for RCM labels (renewable, compostable, marine compostable) to be used in products with plastic content. The products will carry a label with a code indicating whether the single-use plastic comes from renewable sources if it can be industrially composted on land or composted in the marine environment.

Ecological Blue Flag Program

The Ecological Blue Flag Program (PBAE, for its acronym in Spanish) is a free and voluntary recognition given to those who stand out in environmental protection actions in 16 different categories. The "PBAE - Beaches" category stands out as a mechanism to achieve excellence in hygienic-sanitary aspects on the beaches. In this category, the quality of seawater is evaluated, as well as water for human consumption, the sanitary quality of the coast (inorganic waste, presence of garbage dumps, wastewater discharges) and environmental education, among other environmental quality criteria for the beach.

Ecological Blue Flag Program
COSTA RICA

Mechanical claw for manual collection of mixed waste

iv. Recycling and proper waste management

Mexico
PET plastic recycling

Mexico is emerging as a leader in PET recycling. In 2001, PET waste was worth 0.30 dollars/kg (USD/kg), in 2014 it reached 3.50 USD/kg and in 2020 between 4 and 5 USD/kg. In the country, 60.3% of PET containers are recovered, exceeding other territories such as Brazil with 42%, the United States with 31% and the European Union with 25%.

Guatemala
Graphical identification of common solid waste

Approved by Ministerial Agreement 6-2019 of the MARN, Resources, the "Guide for the graphic identification of common solid waste" establishes the color and graph of common solid waste, according to the types that apply in the country for classification from the source of generation, to promote the recovery and use of plastics and other recyclable materials through the presentation of environmental instruments.

Colombia

Separation of waste by color code

The Ministry of the Environment issued Resolution no. 2184 of 2019 –which came into force in 2021– which establishes the white, black and green color code for garbage containers, recycling, bins and bags used in the separation of waste at the source.

The code must be adopted by the municipalities or districts that carry out utilization programs according to their Integrated Solid Waste Management Plans (ISWMP). This provision is part of the National Circular Economy Strategy established in the National Development Plan and contributes to introducing the so-called '9R's into all production scales in the country, including reducing, recycling and reusing, in which the proper separation of waste plays an important role.

Development of agreements for the local use of plastics and other recyclable materials

Through which the parties commit to work voluntarily and in an articulated manner to develop actions, within the framework of their powers, for the proper management and local use of plastics and other recyclable materials in the field of the circular economy. It focuses on coastal municipalities of the Pacific and the Caribbean.

Extended Producer Liability

Resolution 1407 of 2018 regulates the environmental management of paper, cardboard, plastic, glass and metal containers and packaging waste, and transfers obligations to producers to formulate, implement and maintain an updated plan for the environmental management of container and packaging waste that encourages reuse.

Plan for reuse of solid waste

In April 2016, Decree 596 was issued, which regulates the activity of utilization of the public sanitation service and the transitory regime for the formalization of Organizations of Professional Recyclers. The Decree includes, within the same rate, compliance with the "integrality of the service", which corresponds to the selective collection, transportation, weighing and classification of materials.

Panama

Recycle for your Future

In 2015, the "Zero Waste – Change your Neighborhood" alliance was established between the Municipality of Panama, the Urban and Home Sanitation Authority, the National Brewery and ANCON, to help deal with the impending crisis in solid waste management systems in Panama City. From its beginnings, it offered environmental education prior to the establishment of 30 recycling stations in the districts of Betania, Chilibre, Don Bosco, Tocumen and Juan Díaz.

In 2019, the initiative was strengthened with the signing of a cooperation agreement between the Ministry of the Environment, the Mayor's Office of Panama, the Urban and Home Sanitation Authority, ANCON, the National Brewery and the Coca-Cola System (integrated by The Coca-Cola Company, Coca-Cola FEMSA and Estrella Azul).

This process allows promoting good practices for the integrated management of waste among the citizens of the Capital District, with the "Reduce, Reuse and Recycle" (3R) approach, generating opportunities for waste recovery through a circular economy model that promotes research and development of new recycled products. To date, more than 100,000 people in Panama City have been informed about the issue and more than 300 tons of recyclable materials have been collected.

Costa Rica

Institutional Environmental Management Programs (PGAI, for its acronym in Spanish)

These programs are a mandatory instrument aimed at public institutions that seek more efficient use of natural and energy resources, in addition to preventing and properly managing polluting emissions (solid, liquid and gaseous). Directive 014-2018-MINAE was issued as part of this Program to regulate the use, consumption and labeling of single-use plastic in the public sector.

Voluntary Agreements for Cleaner Production Programs (VACPP)

The Voluntary Agreements for Cleaner Production Programs is a voluntary initiative that promotes the adoption of Cleaner Production (P+L) patterns in different production entities, promoting efficiency in the use of raw materials and supplies and reducing the generation of solid, liquid and gaseous waste (including related to plastics). Participating companies receive training, on-site diagnostics, and technical assistance. In return, they must commit to comply with environmental goals agreed upon with MINAE.

Establishments committed to #ChaoPlasticoDesechable of MarViva Foundation

v. International cooperation and civil society

Costa Rica, Panama y Colombia

Establishments committed to #ChaoPlásticoDesechable of MarViva Foundation

The campaign aims to promote voluntary measures between businesses and partners in the food and beverage industry (such as restaurants, hotels, supermarkets and tour operators). By signing a voluntary agreement with the MarViva Foundation, the commercial partner agrees to stop selling, using, or giving away a series of single-use plastic products, including bags, straws, reeds and similar, takeaway packaging and bottles, among others. The agreement covers all operations at a commercial level and includes technical support from the Foundation, in addition, to support for measuring the impact on reduction and the economic benefit of the changes made.

There are gaps and opportunities to address the problem of marine litter

3. Identifying gaps and opportunities

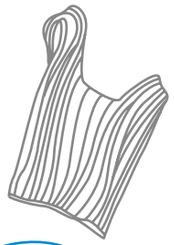
In the process of preparing this Action Plan, the need arises to identify the gaps and opportunities for the problem of marine litter in the Northeast Pacific region based on six strategic lines (Table 3): i) monitoring and scientific knowledge, ii) governance and institutionality, iii) control and surveillance-monitoring iv) integrated waste management system (infrastructure), v) financial and vi) social. Although this identification is not exhaustive, it facilitated consensus among the countries for the recognition of the different actions and strategic areas that are addressed in the Plan and that would support the prevention, reduction and adequate management of marine litter in the region.

Table 3. *Gaps and opportunities for the marine litter problem in the Northeast Pacific region.*

Strategic approach	Gaps	Opportunities
I. Monitoring and Scientific Knowledge	• Lack of timely, current and recent scientific information as a result of the lack of monitoring and coordination systems, such as information exchange and communication to the general public (e.g. inventory of sources of plastic waste that reach the sea in the coastal • Lack of information, knowledge and socialization of public policies and regulations on waste management among the population, as well as lack of environmental education, especially on regulations among decision makers.	• Construction of the state of the art on the subject and establish from an analytical framework a legally acceptable concept for the construction of a solid legal framework for the attention of the problem. • Promotion of research and innovation in the industry to develop more sustainable alternatives to plastic products, especially single-use plastics. • Development of pilot studies to discover the marine and terrestrial sources of plastic waste in the Northeast Pacific region. • Development of projects to characterize the plastic waste present in marine ecosystems (beaches, mangroves, seagrasses, corals) of the Pacific and its impact. • Establishment of strategic alliances with the private sector and academia to increase knowledge about waste management systems. • For monitoring, especially of microplastics, take the recommendations of the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) and develop a methodology for use at the subregional level. Regarding the opportunities, the work of the GPML is highlighted, as well as the opportunity to exchange experiences within the Cartagena Convention, the Antigua Convention, regional seas, the Nairobi Convention and the Barcelona Convention. It is possible to learn from these experiences in other countries.
II. Governance and Institutionality	• Lack of clear and specific legal and regulatory instruments for marine litter that allow each level of government to fully exercise functions and that establish clear legal definitions and responsibilities, as well as accountability mechanisms applicable at all administrative levels. • Variability in decision-making due to changes in the responsible authorities. • Unqualified personnel in charge of the processes often show little political intention. • Strengthening of basin management.	• Construction of the state of the art on the subject from an analytical framework, establish a legally acceptable concept that allows the construction of a solid legal framework for the attention of the problem. • Strengthen legal frameworks with more inclusive wording and greater inter-institutional coordination between different government and administrative levels, in addition to establishing clear powers and responsibilities between administrative levels. • If it were possible to establish common objectives in the region through binding figures, the problem of marine litter management could be addressed in a better way. • Regulations to limit, through measures such as prohibition, the entry into the countries of bags, straws, tableware and other single-use plastic products, especially in areas that protect the natural and cultural heritage of the countries of the region. • Analyze regulations on single-use plastic bags to ensure their responsible consumption through actions that discourage their use and reduce demand. • Promotion of reutilization models • Promotion of integrated waste management in coastal municipalities through municipal ISWMP. • Formalization of recyclers' associations throughout the country.

Strategic approach	Gaps	Opportunities
II. Governance and Institutionality		• Promotion of local recovery of plastics in coastal and riverside municipalities. • Prioritize issues related to the coastal marine environment in the national and regional agendas of the Northeast Pacific, promoting their cooperation and support in the implementation of the 2030 Agenda and related SDG (e.g. SDG 14 "Life below water").
III. Control and Surveillance-Monitoring	• Lack of economic capacity and sanctions in equivalent terms for those who fail to comply with the regulations. • Lack of definition of the two sources of waste generation: i) direct sources of marine pollution and ii) waste generation on the high seas. Inspection and surveillance work should be improved in both areas. • Staff training in municipal environmental units and environmental inspectors. • Increase control of works, activities and projects in terms of waste generation.	• Reinforcement in monitoring compliance with regulatory instruments. • Constant monitoring of the commitments assumed in specific plans and derived responsibilities of the legislation. • Promotion of circular economy frameworks (e.g. greater recycling and use of plastics). • Strengthening of recycling chains in all their links. Expand the market for reutilized material. • Strengthening of the formalization process of recyclers. • Identification of the problem of marine litter associated with the management of water basins in the interior of the country. Control and surveillance must be provided from the upper basins to the coastal areas. • Recognition and inclusion of guidelines for the prohibition and management of garbage discharge from ships, including fishing gear.
IV. Integrated Waste Management System (Infrastructure)	• Weaknesses in waste management considering all its stages with main emphasis on waste separation and adequate final disposal of waste. • Few economic incentives to increase the levels of waste utilization and treatment in addition to few strategies for prevention and minimization. As a result, most of the solid waste produced ends its life cycle in landfills (linear model). If this situation continues, in addition to the environmental consequences, there will not be enough installed capacity to dispose of all this waste.	• Establish a waste generation prevention approach. There is no infrastructure to support the increase in waste and it is recommended to link it with the circular economy approach. • Development of charging systems for the management and recycling of garbage from ships with benefits for the municipality. • Improve the capacities of coastal municipalities for the reception and treatment of garbage from ships. • Have sufficient quantity and quality of infrastructure to properly manage the waste generated (e.g. collection centers and sanitary landfills). • Incorporation of technology in cleanup activities to minimize manual effort at sites with large amounts of waste. • Take as an example the RePLAST project (https://unite-caribbean.com/en/project/replast-pilot-recycling-plastic-project-oecs-18) for the identification of opportunities, the exchange of information and experiences, and the establishment of regional mechanisms for the recycling industry for islands without the required capacity.

Strategic approach	Gaps	Opportunities
V. Financial	• Scarcity of resources in general, in addition to the timely and necessary budget allocation.	• Development of an awareness strategy for decision-makers on the cost-benefit of allocating resources to treat harm to human health and the environment caused by poor waste management. • About microplastics, analyze the relationship between the content of plastics in species and in food. • Resource mobilization. Identification of possible sources of financing for this issue, such as the *Blue Planets Fund* and multilateral organizations such as the World Bank. • Application of payment schemes for environmental or ecosystem services as relevant financial mechanisms. • Promotion of new business models around the use of plastic waste in the regions.
VI. Social	• There are few economic incentives to increase the levels of utilization and treatment of waste, in addition to few strategies for prevention and minimization. • Low quality of separation at the source and in general, in waste management education.	• Development of communication, awareness and participation strategies for the evaluation, characterization and monitoring of the problem of plastic waste in marine and coastal areas. • Develop projects to assess the social and economic impact of the environmental problem of plastic waste in prioritized sites in marine and coastal areas. • Preparation of educational booklets or newsletters for different audiences. • Establish strategic inter-institutional alliances to disseminate information at the national and intersectoral levels. • Organize education campaigns and environmental awareness talks on plastic pollution, its effects and consequences on marine and coastal ecosystems. • Include citizen and community monitoring in awareness campaigns, classification and monitoring of plastic waste in marine ecosystems.



Plastic bottles pollute the oceans and put marine life at risk

4. Marine Litter Action Plan for the Northeast Pacific and Priority Areas of Work

The Action Plan consists of 7 strategic areas, 21 actions and 70 activities (visible in Tables 4 to 10) resulting from the discussion between the countries. The Plan is also a guide to identifying potential partners that could be involved to ensure the successful implementation of activities. It also establishes the regional or national scope according to the context of each country in a time frame until 2025 with their respective indicators to measure compliance and level of satisfaction.

As it is not a legally binding instrument, the Action Plan is voluntary and cooperative among the countries, and the activities will be implemented following the progress and technical, financial and human capacities of each country.

4.1. Partnerships and cooperation

Objective: Strengthen regional cooperation and integration to reduce and manage marine litter in the Northeast Pacific (Table 4).

Table 4. *Marine Litter Action Plan for the Northeast Pacific: partnerships and cooperation.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
1.1. Promote cooperation, dialogue and the creation of alliances between the countries of the Northeast Pacific region between different levels of administration, both national, municipal and local.	1.1.1. Establish regional working groups to coordinate the participation of stakeholders in marine litter management.	National, municipal and local governments, NGOs, private sector	Regional						- Established working group - Number of new alliances for regional working groups on marine litter management
	1.1.2. Promote regular virtual or face-to-face meetings (e.g. quarterly) with working groups for the exchange of information, initiatives, best practices, experiences.	National, municipal and local governments, NGOs, private sector	Regional						- Number of meetings of regional and national working groups - Meeting reports
	1.1.3. Facilitate regional spaces (webinars, high-level panels, open online courses) to share knowledge, information, experiences and best practices, particularly in the mitigation and management of marine litter in the Northeast Pacific region.	National, municipal and local governments, NGOs, private sector	Regional						- Number of virtual or face-to-face meetings - Number of education and dissemination activities promoted
1.2. Coordinate a regional agenda through analogous integration and cooperation systems in the region.	1.2.1. Identify opportunities for communication and articulation through the ordinary representations of existing coordination structures such as the Central American Integration System (SICA, for its acronym in Spanish), the Central American Commission for Environment and Development (CCAD, for its acronym in Spanish), the Mesoamerican Environmental Sustainability Strategy (EMSA, for its acronym in Spanish), among others.	National, municipal and local governments, NGOs, private sector	Regional						- Report/ minutes of meetings of coordination structures - Number of initiatives identified through different regional coordination structures

4.2.Education, training and outreach

Objective: Increase awareness of the problem of marine litter and facilitate and strengthen the capacities of civil society, national governments and educational institutions, among other stakeholders, to develop strategies to prevent, reduce, control and remediate pollution of the marine environment and the coastal areas (Table 5).

Table 5. *Marine Litter Action Plan for the Northeast Pacific: education, training and outreach.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
2.1. Promote the inclusion of the environmental area, with emphasis on the management of waste generated on land that contributes to marine litter, in the curricula of formal and informal education systems such as public schools and primary and secondary education centers.	2.1.1. Promote the coordination of efforts with different associations and educational entities of national governments, to develop and include environmental study areas in the curricula with particular emphasis on the problem of marine litter.	National, municipal and local governments, education centers, Ministries of Education, universities, research centers	National						- Number of educational institutions that incorporated environmental and marine litter issues into their curricula
2.2. Promote training, exchange of knowledge, experiences and best practices in the region for the prevention, reduction and control of marine litter.	2.2.1. Promote the creation of a regional platform to promote the exchange of knowledge, experiences and regulations related to the reduction of marine litter and allow the creation of an information system on marine litter.	National, municipal and local governments, universities, research centers	Regional						- Platform created and in operation
	2.2.2. Promote the creation of cooperation and training programs for the civil society, the private sector, public entities, among other relevant stakeholders, that contribute to strengthening and increasing capacities to reduce marine litter.	Gobiernos nacionales, municipales y locales, instituciones universitarias, centros de investigación, sectores productivos.	Regional/ National						- Number of cooperation and training programs developed - Number of persons impacted

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
2.2. Promote training, exchange of knowledge, experiences and best practices in the region for the prevention, reduction and control of marine litter.	2.2.3. Compile and expose through the media (mass media and social networks) good practices or case studies of prevention, reduction and control of marine litter.	National, municipal and local governments	Regional/ National						- Number of case studies developed and disseminated in the region through the media
2.3. Promote communication campaigns, citizen culture and environmental education, with regional participation, to promote the proper management of solid waste, especially prevention, separation at the source and recycling.	2.3.1. Promote campaigns for permanent awareness of waste collection and education on waste classification in colored containers and home recycling systems.	Ministries of Environment, Universities, NGOs, productive and economic sectors	Regional/ National						- Communication and awareness campaigns carried-out
	2.3.2. Develop education campaigns and environmental awareness talks on plastic pollution, its effects and consequences on marine and coastal ecosystems.	Ministries of Environment, Universities and NGOs, productive and economic sectors (e.g. hospitality sector)	National						
	2.3.3. Promote training on sustainable tourism culture to encourage changes in the behavior and consumption patterns of travelers, particularly those associated with the use of natural resources and public services such as the generation of solid waste and wastewater management, the alteration of ecosystems and natural attractions, the use of infrastructure and interactions with biodiversity.	National, municipal, local governments, Ministries of Environment, Ministries of Tourism	Regional						- Number of training and participants on tourism culture
	2.3.4. Develop a manual or informative document to standardize the concepts and definitions related to marine litter in the region.	Ministries of Education, NGOs	Regional						- Development of manual/ Information document disseminated in the region

4.3. Monitoring and research

Objective: Support the development of monitoring and research programs for the generation of data and information to facilitate decisions on the prevention, reduction and control of marine litter in the Northeast Pacific (Table 6).

Table 6. *Marine Litter Action Plan for the Northeast Pacific: monitoring and research.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
3.1. Promote research and information exchange on the issue of marine litter and possible mechanisms to help solve the problem.	3.1.1. Compile baseline information on marine litter, including inventories of discharges in the marine environment, scientific studies, innovations to combat marine litter, among others.	Ministries of Environment, Universities, NGOs, private sector	Regional						- Baseline information reports on marine litter - Consolidated regional data
	3.1.2. Facilitate the development of a study to assess the economic, environmental and social costs caused by the generation of marine litter.	Ministries of Environment, Universities, NGOs, private sector	Regional						- Study with results on the economic, social and environmental costs of marine litter in the Northeast Pacific
	3.1.3. Promote the adoption of research mechanisms for citizen science.	Universities, educational institutions, NGOs	Regional						- Contribution of research by volunteer citizens on the issue of marine litter and mechanisms for the coordination of citizen science research
	3.1.4. Promote spaces for the exchange of experiences and knowledge in applied technologies that include countries outside the region.	National, local, municipal governments, Ministries of Environment, Universities, NGOs, private sector	Regional						- Number of events for the exchange of experiences and knowledge on technologies applied to the problem of marine litter
3.2. Promote regional mechanisms for the collection of information on land and sea sources of marine litter with a life cycle approach.	3.2.1. Support the preparation of marine litter classification studies in the main coastal areas of the Northeast Pacific region to have data such as types, sources and impacts of marine litter.	National, local, municipal governments, Ministries of Environment, Universities, NGOs, private sector	Regional/ National						- Studies generated by countries/regions

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
3.2. Promote regional mechanisms for the collection of information on land and sea sources of marine litter with a life cycle approach.	3.2.2. Investigate and identify as many sources of marine litter as possible, such as ballast water, water treatment plants, waste custody chains, illegal discharges, dumping, etc.	National, local, municipal governments, Ministries of Environment, Universities, NGOs, private sector	Regional						- Study on sources of marine litter
	3.2.3. Encourage the development of a repository or database, or linkage to an existing platform with regional information and data on sources, impacts of marine litter.	Ministries of Environment, Universities, NGOs, private sector	Regional						- Repository created and updated with regional information and data on marine litter sources
3.3. Development of projects and pilot studies for the characterization, inventory and monitoring of marine and terrestrial sources of single-use plastic waste in the coastal marine zone of the Northeast Pacific.	3.3.1. Development of projects to characterize the plastic waste present in marine ecosystems (beaches, mangroves, seagrasses, corals) of priority sites based on the map of Terrestrial Sources of Marine Pollution, in the Northeast Pacific and their impacts.	Universities and NGOs, Ministries of Environment	National						- Number of departments with an inventory of marine and land sources of plastic waste - Projects developed for the characterization of formulated plastic waste
	3.3.2. Development of a pilot plan to inventory the sources of plastic waste in some of the coastal departments of the Northeast Pacific.	Universities and NGOs, Ministries of Environment	National						
	3.3.3. Identify “critical points” of terrestrial and marine sources of plastics and microplastics.	Ministries of Environment, Universities, NGOs, private sector	Regional						- Study with results of critical points in terrestrial and marine sources of plastics and microplastics
	3.3.4. Monitor plastic trash in different parts of the Pacific coast and in the tropics.	Ministries of Environment, Universities, NGOs, private sector	Regional						- Plastic garbage monitoring reports
	3.3.5. Promote research and innovation in the design of sustainable materials/products as an alternative to single-use plastics.	Universities and NGOs, Ministries of Environment	National						- Number of investigations into the design of alternative materials/products

4.4. Governance and institutionality

Objective: Strengthen regional, national, municipal and local legal, political, and institutional frameworks for marine litter management (Table 7).

Table 7. *Marine Litter Action Plan for the Northeast Pacific: governance and institutionality.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
4.1. Strengthen the regulatory framework and action of national/ local/regional governments to combat marine litter.	4.1.1. Promote National Action Plans on marine litter to strengthen regional actions.	National governments	National						- Number of authorities that have formalized/ adopted the Action Plan
	4.1.2. Promote exchange of experiences and practical guides on the adoption of restrictions or other materials, or gradual substitution of certain materials.	National, local, municipal governments, Ministries of Environment, Universities, NGOs, private sector	Regional/ National						- Number of experiences sharing sessions - Number of practical guides on adoption of restrictions and/or adoption of other
	4.1.3. Establish, depending on the context of each country, restrictions, or alternatives for the gradual substitution of materials that pollute the environment.	National Governments, Ministries of Environment, civil society, NGOs	National						- Number of restrictions established
	4.1.4. Promote the responsibility of producers and distributors of plastics and other polluting and persistent materials with mechanisms for reuse, recycling and proper management of waste without a useful second life.	National, local, municipal governments, productive sectors, private sector	National						- Number of liability programs formalized by the corresponding authorities
	4.1.5. Promote the inclusion of the marine litter issue in regional policies	National governments, regional coordination spaces	Regional						- Regional policies with the theme included/visible
	4.1.6. Encourage related sectors (fishing, tourism, transportation, passengers, etc.) to adopt codes of conduct to prevent the dumping of waste and solid waste into water bodies.	National, local, municipal governments, productive sectors, fishing and navigation authorities	Regional/ National						- Number of adopted codes of conduct
	4.1.7. Promote fee collection programs, payment for environmental services and extended producer responsibility for the benefit of different levels of government in the prevention and management of marine litter.	National, municipal and local governments	National						- Number of fee collection schemes, payment for environmental services and extended producer responsibility

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
4.1. Strengthen the regulatory framework and action of national	4.1.8. Promote the formalization of recyclers' associations throughout the country.	National, local, municipal governments, national recycling associations	National						- Number of formalized recycling associations
4.2. Use existing mechanisms to promote the integrated management of basins and shared basins to prevent, reduce and adequately manage plastic waste in cooperation with the private sector or civil society groups in different countries.	4.2.1. Involve companies, organizations and civil society to actively participate in the collection of plastic waste.	National, local, municipal governments, productive sectors	National						- Number of companies involved in the collection of plastic waste
	4.2.2. Develop local agreements for the use of plastics and other recyclable materials in coastal and riverside municipalities.	National, local, municipal governments, productive sectors, civil society	National						- Number of local agreements for the use of plastics and other materials
	4.2.3. Encourage the participation of civil organizations within the territory of interest to promote mechanisms for the reduction, management, collection and disposal of plastic waste.	National, local, municipal governments, productive sectors, civil society	National						- Number of civil organizations created
4.3. Provide accreditations for waste management processes.	4.3.1. Promote a regional certification strategy for companies that adopt good practices in waste management.	National, local, municipal governments, productive sectors, private sector	Regional						- Number of strategies formulated - Number of certifications created
4.4 Promote regional actions to favor legislation aimed at reducing waste.	4.4.1. Promote recommendations, protocols, or technical guides for the development of legislation or regulatory mechanisms focused on the reduction and management of waste to adequately manage marine litter.	National, municipal and local governments, NGOs, private sector	Regional						- Documents prepared and disseminated on recommendations, protocols or technical guides
	4.4.2. Promote the development of national or regional regulations on marine litter.	National, municipal and local governments	Regional/ National						- Marine litter regulations developed for application throughout the country for the consideration of the States
	4.4.3. Promote regulations for single-use plastics, ranging from social awareness to the reduction and replacement of this type of plastics.	National, municipal and local governments, NGOs, private sector	Regional/ National						- Number of regulations developed or strengthened in the region

4.5. Infrastructure for integrated waste management

Objective: Reduce levels of marine litter in the Northeast Pacific through the development and strengthening of regional and national infrastructure for integrated solid waste management (Table 8).

Table 8. *Marine Litter Action Plan for the Northeast Pacific: infrastructure for integrated waste management.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
5.1. Promote the development of infrastructure for integrated waste management incorporating circular economy principles in all stages of the reduction cycle (separation, collection, recovery, proper disposal).	5.1.1. Strengthen the provision of cleaning services, collection and final disposal of solid waste to cities and municipalities	National, municipal, local governments, local control entities, cleaning service providers	Regional/ National						- Amount of investment in sanitation, cleaning, collection and final disposal of solid waste
	5.1.2. Promote the installation of collection centers in cities and small municipalities.	National, municipal, local governments, Ministries of Environment, private sector, NGOs	Regional						- Number of cities and municipalities with collection centers installed - Total number of collection centers
	5.1.3. Encourage citizens and productive sectors to separate and classify waste for reincorporation into production chains, when feasible.	National, municipal, local governments, Ministries of Environment, private sector, NGOs	Regional						- Number of cities and productive sectors that are collecting, classifying, quantifying and recovering waste
	5.1.4. Promote or strengthen the installation of containers for the collection and separation of waste by color or by material in the municipalities (e.g. black lids for organics, white lids for recyclables such as cardboard, plastics and glass, among others) including banners explaining how to classify waste before placing it in the containers.	National, municipal, local governments, Ministries of Environment, private sector, NGOs	Regional						- Number of municipalities/ cities with containers installed - Number of containers installed
	5.1.5. Promote the development or strengthening of solid waste selection and collection systems for local sanitation authorities to ensure proper treatment.	Local sanitation authorities, Ministries of Environment, private sector	Regional/ National						- Number of systems for selection and collection of reinforced solid waste

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
5.1. Promote the development of infrastructure for integrated waste management incorporating circular economy principles in all stages of the reduction cycle (separation, collection, recovery, proper disposal).	5.1.6. Identify opportunities for managing recoverable waste in the region when what is produced does not allow a specific investment.	National, municipal, local governments, Ministries of Environment	Regional						
	5.1.7. Develop a national and municipal infrastructure for the reception of garbage from marine sources such as maritime transport (e.g. ships, constructions in the sea, fishing elements).	National, municipal, local governments, Ministries of Environment, private sector, NGOs, independent financial organization, development banks, fishing and navigation authorities	Regional/ National						- Number of infrastructure developments implemented at the national and municipal levels for the reception of garbage from marine sources
5.2. Promote the use of technologies and innovations to mitigate and manage marine litter.	5.2.1. Encourage the establishment of waste treatment plants with state-of-the-art technology at the service of the region.	National, municipal, local governments, Ministries of Environment, private sector, NGOs	Regional						- Number of waste treatment plants established
	5.2.2. Promote the use of cutting-edge technologies, artificial intelligence, to monitor, detect and reduce the volume of plastics in the oceans, seas and rivers.	National, municipal, local governments, Ministries of Environment, private sector, NGOs, independent financial organization, development banks	Regional						- Document with monitoring reports

4.6. Control and surveillance

Objective: Improve maritime and land inspection and surveillance actions to prevent, reduce and control marine litter in the Northeast Pacific (Table 9).

Table 9. *Marine Litter Action Plan for the Northeast Pacific: control and surveillance.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
6.1. Develop and strengthen control and surveillance measures to prevent discharges into marine and land sources.	6.1.2. Strengthen control and regulation mechanisms on mainland.	National, municipal, local governments, maritime authorities, control entities	Regional/ National						- Number of updated and strengthened control and regulation mechanisms
	6.1.3. Develop and strengthen control and surveillance measures in continental areas (since the waste comes from high areas).	National, municipal, local governments, maritime authorities, control entities	Regional/ National						- Number of control and surveillance measures implemented in continental areas
	6.1.4. Establish controls and inspection measures to avoid the dumping of persistent garbage from ships or smaller vessels.	Maritime authorities, naval force, water transport and ports	Regional/ National						- Number of control measures implemented to prevent the dumping of persistent garbage from ships or smaller vessels
	6.1.5. Strengthen the control of marine litter in docks and ports.	Maritime authorities, naval force, water transport and ports	Regional/ National						- Follow-up reports
	6.1.6. Encourage the identification of fishing gear associated with vessels for monitoring and recovery in the event of loss.	National, local, municipal governments, maritime authorities, productive sectors, civil society, fishing and navigation authorities	Regional/ National						- Number of fishing gear identified and tracked
	6.1.7. Monitor the line of integrated management of waste from ships to avoid transferring the problem to land.	National, local, municipal governments, maritime authorities, productive sectors, civil society	Regional/ National						

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
6.1. Develop and strengthen control and surveillance measures to prevent discharges into marine and land sources.	6.1.8. Promote new or better facilities in port for the reception of marine litter.	National, municipal, local governments, maritime authorities and the private sector, control entities	Regional/ National						- Number of new or improved facilities in port for reception of marine litter
6.2. Facilitate training on regulatory and environmental monitoring issues for control entities.	6.2.1. Provide training aimed at control and inspection authorities on issues of current regulations and waste identification, among others, in addition to having regional guidelines for control and surveillance tasks.	National, municipal, local governments, maritime authorities and the private sector, control entities	Regional/ National						- Number of trainings - Participant roster - Established regional guidelines
6.3. Improve control and monitoring of marine litter management through voluntary international instruments between countries.	6.3.1. Encourage adherence and ratification (when applicable) of international agreements or other regional initiatives. Likewise, strengthen the implementation of the instruments in question at the national level through regulations, specific regulations, agreements, etc.	National, municipal, local governments, maritime authorities and the private sector, control entities	Regional						- Number of international agreements or other regional initiatives ratified by the countries
6.4. Strengthen regulatory bodies in the field of marine litter management.	6.4.1. Strengthen compliance with local and national regulations on the prevention, control, cleaning and disposal of marine litter.	National, local, municipal governments, control entities, maritime entities, productive sectors	National						- Evaluate compliance with local and national regulations on prevention, control, cleaning and disposal of marine litter

4.7. Funding and resource mobilization

Objective: Identify funding sources for the implementation of the Northeast Pacific Marine Litter Action Plan (Table 10).

Table 10. *Marine Litter Action Plan for the Northeast Pacific: funding and resource mobilization.*

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
7.1. Adopt and strengthen budgetary measures.	7.1.1. Develop a resource mobilization strategy that establishes a budget to address marine litter management (considering interministerial support and cooperation) for the implementation of the Northeast Pacific Marine Litter Action Plan.	National, municipal, local governments, development banks, international organizations	Regional						- Strategy document
	7.1.2. Identify the capabilities and resources available in each region in order to optimize them for the solution of the marine litter situation.	National, municipal, local governments, control entities.	Regional/ National						- Diagnostic document of capacities and resources
	7.1.3. Evaluate the environmental costs of those activities that generate some type of marine pollution.	National, municipal, local governments, control entities.	National						- Environmental cost evaluation document
	7.1.4. Consider the "polluter pays" environmental principle and evaluate possible financing through mechanisms such as PES.	National, municipal, local governments, control entities.	National						- Financial mechanisms evaluated or proposed and designed to apply the "polluter pays" environmental principle.
	7.1.5. Develop or strengthen a fund for compensation measures for related activities.	National, municipal, local governments, control entities.	Regional/ National						- Number of activity-based compensation measures created
	7.1.6. Incorporate sectoral management plans for waste flows, so that each sector can contribute to the partial solution from the financial point of view.	National, municipal, local governments,productive sectors.	Regional/ National						- Number of sectoral waste stream management schemes created/incorporated/identified.

Actions	Activities	Potential partners	Scope	Timeframe					Indicator(s)
				2022	2023	2024	2025	2026	
7.1. Adopt and strengthen budgetary measures.	7.1.7. Manage opportunities for resource mobilization or cooperation synergies for the implementation of pilot projects for the prevention and reduction of marine debris.	National, municipal, local governments, control entities.	Regional/ National						- Number of identified resource mobilization opportunities
7.2. Design financing strategies for the management of waste and marine litter.	7.2.1. Encourage investment in infrastructure for the management and treatment of waste on land.	National, municipal, local governments, control entities.	Regional/ National						- Amount of investment in infrastructure for the management and treatment of waste on land
	7.2.2. Implement incentives for the use of alternatives to plastic (e.g. the incentive for packaging in recycled bottles).	National, municipal, local governments, productive sectors.	Regional/ National						- Number of incentives created
7.3. Facilitate the development and application of monetary incentives to the consumer.	7.2.3. Promote regional incentive programs for consumers who recycle (e.g. Ecoin).	National, municipal, local governments, productive sectors	Regional/ National						- Number of regional incentive programs created for consumers who recycle

As a result of the pandemic, gloves and masks were added to the list of plastic pollution

5. Coordination and follow-up

The following coordination, implementation, monitoring and follow-up mechanisms are proposed to ensure the effective implementation of the Marine Litter Action Plan for the Northeast Pacific.

5.1. Coordination and implementation

The implementation of the Action Plan will be led by the Coordinating Committee made up of a government representative from each of the member countries (Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama and Colombia). The Committee will be supported by the UNEP – Office for Latin America and the Caribbean, and MarViva Foundation.

The Presidency of the Coordinating Committee will correspond to one of the member countries of the Plan and each one will exercise this function on a rotating basis for periods of one year.

The functions and responsibilities of the Coordinating Committee mainly directed toward the implementation and monitoring of the Action Plan are as follows:

i. Promote cooperation among the countries of the Northeast Pacific region for the implementation of regional and national activities.

ii. Facilitate access to information and tools available and of interest to address the problem of marine litter and contribute to the implementation of the Plan.

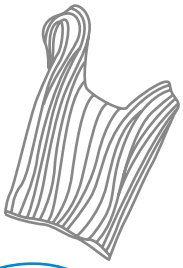
iii. Promote and coordinate the mobilization of resources for the implementation of the Plan.

iv. Promote and facilitate cooperation with different stakeholders from the public, private, NGO, or academic sectors, at different levels.

v. Convene periodic follow-up meetings.

vi. Facilitate monitoring and follow-up in the implementation of the Action Plan.

5.2. Monitoring and evaluation



The Coordinating Committee, with the support of UNEP and the MarViva Foundation, will monitor the implementation of the Action Plan. To this end, the member countries will submit an annual report with information on the activities carried out and the progress of each nation concerning to the objectives and actions of the Plan. The Coordinating Committee consolidates the information in an annual progress report that will include regional information.

At the end of the second year, a mid-term evaluation will be carried out for the member countries to recommend adjustments to the Action Plan. At the end of the implementation period, in the fifth year, the final evaluation of the Plan will be carried out to design the Plan for the new period.

6. Literature cited

Acosta Coley, I., and Olivero Verbel, J. (2015). Microplastic resin pellets on an urban tropical beach in Colombia. *Environmental Monitoring and Assessment, 187*(7): 435. Available at: https://doi.org/10.1007/s10661-015-4602-7

ARAP (n.d.). *Los recursos costeros*. Autoridad de Recursos Acuáticos de Panamá. Available at: https://arap.gob.pa/unidad-ambiental/recursos/

Bernaola Regout, D. (2015). *Gobernanza en los procesos de ordenamiento territorial en la Amazonia peruana: Las experiencias de San Martín y Loreto*. 100 pp. Available at: https://www.dar.org.pe/archivos/libro_OT.pdf

Caribbean Insider (n.d.). *Honduras*. Available at: http://www.caribeinsider.com/en/geografiaen/205

CGR (2016). *Auditoría operativa recolección de residuos ordinarios*. Informe núm. DFOE-DL-IF-1-2016, División de Fiscalización Operativa y Evaluativa, Contraloría General de la República de Costa Rica. 58 pp. Available at: https://www.hablandoclarocr.com/images/pdfs/recoleccion_residuos_definitivo.pdf

CONPES (2016). *Política nacional para la gestión integral de residuos sólidos*. Consejo Nacional de Política Económica y Social (CONPES 3874), Departamento Nacional de Planeación. 73 pp. Available at: https://faolex.fao.org/docs/pdf/col191813.pdf

CONPES (2018). *Política de crecimiento verde*. Consejo Nacional de Política Económica y Social (CONPES 3934), Departamento Nacional de Planeación). 144 pp. Available at: https://faolex.fao.org/docs/pdf/col191629.pdf

CONPES (2020). *Colombia Potencia Bioceánica Sostenible 2030*. Consejo Nacional de Política Económica y Social (CONPES 3990), Departamento Nacional de Planeación. 91 pp. Available at: https://cco.gov.co/cco/publicaciones/83-publicaciones/794-conpes-colombia-potencia-bioceanica-sostenible.html

Cózar, F., González, I., Irigoien, X., Úbeda, B., Hernández, S., Palma, A., Navarro, S., García-de-Lomas, J., Ruiz, A., Fernández-de-Puelles, M. and Duarte, C. (2014). Plastic debris in the open ocean. *PNSA, 111*(28): 10239-10244. Available at: https://www.pnas.org/doi/pdf/10.1073/pnas.1314705111

Derraik, J.G.B. (2002). The pollution of the marine environment by plastic debris: a review. *Marine Pollution Bulletin, 44*(9): 842-852. Available at: https://www.sciencedirect.com/science/article/pii/S0025326X02002205?via%3Dihub

DIGESTYC (2017). *Encuesta de hogares de propósitos múltiples*. Dirección General de Estadistica y Censos. Available at: http://digestyc.microdatahub.com/index.php/catalog/16

Ellen MacArthur Foundation (n.d.). *What is Circular Economy?*. Available at: https://www.ellenmacarthurfoundation.org/circular-economy/concept

FAO (n.d.). *Características socioeconómicas y ecológicas de Guatemala*. Food and Agriculture Organization of the United Nations. Available at: www.fao.org/3/j0605s/j0605s02.htm

FAO (2015a). *El Salvador*. Food and Agriculture Organization of the United Nations. Available at: www.fao.org/3/ca0419es/ CA0419EN.pdf

FAO (2015b). *Nicaragua en una mirada*. Food and Agriculture Organization of the United Nations. Available at: www.fao.org/nicaragua/fao-en-ni-caragua/nicaragua-en-una-mirada/es/

FAO (2015c). *Costa Rica*. Food and Agriculture Organization of the United Nations. Available at: www.fao.org/3/ca0419es/ CA0419EN.pdf

FAO (2015d). *Panam*a. Food and Agriculture Organization of the United Nations. Available at: http://www.fao.org/3/ ca0422es/CA0422ES.pdf

Farnum, F. and Kelly, R. (2019). Primera caracterización nacional de recicladores de oficio de Panamá. *Revista Saberes, 2*(1): 1-14. Available at: http://portal.ame- lica.org/ameli/jatsRepo/223/2231137005/html/

González, R. (2005). *Diagnóstico sobre la basura marina en la República de Panamá*. Comisión Permanente del Pacífico Sur. 48 pp. Available at: https://aquadocs.org/handle/1834/8009

GWPCA (2014). *Conformemos consejos de cuencas en Honduras*. Una guía fácil para constituir organismos de cuenca, bajo las pautas de la Ley General de Aguas. Global Water Partnership Central America. 28 pp. Available at: https://www.gwp.org/globalassets/global/gwp-cam_files/manual-consejos-de-cuencas.pdf

Gregory, M. (2009). Environmental implications of plastic debris in marine settings-entanglement, ingestion, smothering, hangers-on, hitch-hiking, and alien invasions. *Philosophical Transactions of the Royal Society, 364:* 2013-2025. Available at: https://doi.org/10.1098/rstb.2008.0265

IMO (2018). Marine litter. International Maritime Organization. Available at: https://www.imo.org/en/MediaCentre/HotTopics/Pages/marinelitter-default.aspx

IUCN (n.d.). *Cuenca hidrográfica*. Available at https://www.iucn.org/es/news/south-america/202110/beneficios-compartidos-de-la-gestion-de-cuencas-hidrograficas

Jambeck, J., Geyer, R., Wilcox, C., Siegler, T., Perryman, M., Andrady, A., Narayan, R. and Lavender, K. (2015). Plastic waste inputs from land into the ocean. *Science, 347*(6223): 768- 771. Available at: https://www.science.org/doi/10.1126/science.1260352

Le Guern, C. (2020). *When Mermaids Cry: The Great Plastic Tide*. Special report. Costal Care. Available at: https://coastalcare.org/2009/11/plastic-pollution/

Lebreton L., Slat, B., Ferrari, F., Sainte-Rose, B., Aitken, J., Marthouse, R., Hajbane, S., Cunsolo, S., Schwarz, A. Levivier, A., Noble, K., Debeljak, P., Maral, H., Schoeneich-Argent, R., Brambini, R. and Reisser, J. (2018). Evidence that the Great Pacific Garbage Parch is rapidly accumulating plastic. *Scientific Reports, 8:* 4666. Available at: https://doi.org/10.1038/s41598-018-22939-w

MADS and INVEMAR Invemar (2017). *Diagnóstico de residuos microplásticos en las zonas marinas*. Resolution núm. 646 of 2017. Formulación de lineamientos, medidas de conservación, manejo y uso de ecosistemas marinos y costeros, con la intención de apoyar acciones de fortalecimiento en la gestión ambiental de las zonas costeras de Colombia 239 p + Anexos. Available at: https://alfresco.invemar.org.co/share/s/DDX0_eRcTH2_dbTSlPLyVw

MINAE (2012). *Programa Nacional de Monitoreo de la Calidad de los Cuerpos de Agua*. Ministerio de Ambiente y Energía, Dirección de Agua. 23 pp. Available at: https://da.go.cr/wp-content/uploads/2017/01/Programa-Nacional-de-Monitoreo-de-la-Calidad-de-Cuerpos-de-Agua-Junio-2012.pdf

MARN (2015). *Política nacional para la gestión integral de residuos y desechos sólidos*. Ministerio de Ambiente y Recursos Naturales de Guatemala. 92 pp. Available at: https://faolex.fao.org/docs/pdf/gua201306.pdf

MRE (2019). *El Salvador*. Ministerio de Relaciones Exteriores, Oficina de Información Diplomática. 13 pp. Available at: https://www.exteriores.gob.es/documents/fichaspais/elsalvador_ficha%20pais.pdf

MD (2004). *Libro de la Defensa Nacional de Nicaragua*. Ministerio de Defensa. 125 pp. Available at: https://www.files.ethz.ch/isn/157136/Nicaragua%202005%20parte%201_spa.pdf

MINSA (2017). *Estrategia nacional para la sustitución de plásticos de un solo uso por alternativas renovables, compostables y reciclables 2017-2021*. Ministerio de Salud de Costa Rica. Available at: https://www.undp.org/es/costa-rica/projects/estrategia-nacional-para-la-sustitucion-de-plasticos-de-un-solo-uso-por-alternativas-renovables-y-compostables

NOAA (2017). *Marine Debris Program Accomplishments Report*. National Oceanic and Atmospheric Administration. Available at: https://marinedebris. noaa.gov/sites/default/files/publications-files/FY17_NOAA_MDP_Accom- plishments_Report_0.pdf

NOAA (2020). *Why should we care about the ocean?* National Ocean Service, National Oceanic and Atmospheric Administration. Available at: https://oceanservice.noaa.gov/facts/why-care-about-ocean.html

National Geographic (2016). *Los partidarios de continuar con los vertidos en los océanos incluso tenían un eslogan: "La solución a la contaminación es la dilución". La contaminación marina*. Available at: http://www.national- geographic.es/medio-ambiente/la-contaminacion-marina

Norori Solís, J.M., Baquedano, V. and Del Cid, J.A. (2016). Visión urbana de la Ciudad de Choluteca en Honduras para el año 2034. Ciencias Espaciales, 9(1): 150-184. Available at: https://doi.org/10.5377/ce.v9i1.3131

Ocean Conservancy (2017). *Together for our Ocean, International Coastal Clean-up 2017 Report*. Available at: https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup_2017-Report.pdf

Essig, K. (2016). *Estado de la Normativa Internacional para la Preservación del Ambiente Marítimo en Centroamérica MARPOL (FRP) - OPRC*. Available at: http://www.cocatram.org.ni/repica/Repicas/38Cr/Status%20Convenios%20Ambientales%20OMI_Klauss%20Essig%20Julio%2020%202016.pdf

UNEP (2017). *La ONU lucha por mantener los océanos limpios de plásticos,* Noticias ONU. United Nations Environment Programme. Available at https://news.un.org/es/story/2017/05/1378771

UNEP (2018a). *Perspectiva de gestion de residuos en America Latina y el Caribe*. Programa de las Naciones Unidas para el Medio Ambiente, Oficina para América Latina y el Caribe. Ciudad de Panamá, Panamá. 260 pp. Available at: https://www.unep.org/es/resources/informe/perspectiva-de-la-gestion-de-residuos-en-america-latina-y-el-caribe#:~:text=La%20Perspectiva%20de%20la%20Gesti%C3%B3n,econom%C3%ADa%20circular%2C%20clave%20para%20el

UNEP (2018b). V*olumen y caracterización de basura marina. Panama*. Programa Informe Estado en Desarrollo Humano Sostenible (2018). Informe Estado de la Nación 2018. United Nations Environment Programme. Available at: https://estadonacion.or.cr/informes/

Reichert, J., Schellenberg, J., Schubert, P., and Wilke, T. (2018). Responses of reef building corals to microplastic exposure. *Environmental Pollution, 237:* 955-960. Available at: https://doi.org/10.1016/j.envpol.2017.11.006

Ross Salazar, E., Jiménez Ramón, J.A., Castro Campos, M. and Blanco Bolaños, M. (2019). *Atlas Domo Térmico de Costa Rica*. Fundación MarViva, San José. 108 pp. Available at: https://marviva.net/wp-content/uploads/2022/07/Atlas-Domo-Termico-de-Costa-Rica.pdf

Schlumberger (2020). *Energy Glossary en Español*. Available at: https://glossary.slb.com/es/

ACOREMA (2010). *El Mar se ahoga ¡Sálvalo! Una mirada al grave problema de la basura marina*. 22 pp. Available at: https://www.acorema.org.pe/documentos/elmarseahoga.pdf

SCDB (2020). *Áreas Marinas de Importancia Ecológica o Biológica (AIEB)*. Lugares especiales en los océanos del mundo. Volume 5: Océano Pacífico Oriental Tropical y Templado. Secretaría del Convenio sobre la Diversidad Biológica. 69 pp. Available at: https://www.cbd.int/marine/ebsa/booklet-05-ettp-es.pdf

SEMARNAT (2018). *Océanos y mares de México*. Secretaría de Medio Ambiente y Recursos Naturales. Available at: https://www.gob.mx/semarnat/articulos/oceanos-y-mares-de-mexico

The CLME+ Hub. (2020). *El Programa de los Mares Regionales de la ONU*. Available at: https://clmeplus.org/el-programa-de-los-mares-regionales-de- la-onu/?lang=es

The Pew Charitable Trusts (2020). *Breaking the Plastic Wave*. 29 pp. Available at: https://www.pewtrusts.org/-/media/assets/2020/07/breakingtheplasticwave_summary.pdf

UNEP (2009). *Marine Litter: To Global Challenge*. United Nations Environment Programme. 232 pp. Available at: https://wedocs.unep.org/handle/20.500.11822/7787

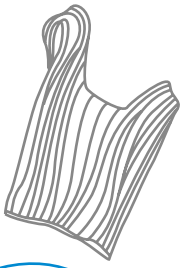
UNEP (2018). *Single Use Plastics: A Roadmap for Sustainability*. United Nations Environment Programme. Available at: https://www.unep.org/resources/report/single-use-plastics-roadmap-sustainability

UNEP and IMO (2020). Available at: http://www.imo.org/es/MediaCentre/HotTopics/marinelitter/Paginas/default.aspx#:~:text=%C2%BFQu%C3%A9%20es%20la%20basura%20marina,en%20nuestros%20mares%20y%20oc%C3%A9anos.&text=La%20basura%20marina%20ha%20sido,el%20medio%20marino%20y%20costero.

Williams, A., Rangel-Buitrago, N. Anfuso, G. Cervantes, O. and Botero, C. (2016). Litter impacts on scenery and tourism on the Colombian north Caribbean coast. Science, 55: 209-224. Available at: https://www.sciencedirect. com/science/article/abs/pii/S0261517716300218

Glossary

Aquifer or groundwater. Geological formations where water is found and due to its permeable characteristics, it allows for storage in underground spaces (IUCN, n.d.).



Interstitial waters of sediments. Water naturally present in the pores of rocks. Water from fluids introduced into a formation through drilling operations and other interferences, such as mud and seawater, does not constitute interstitial water. Interstitial water, or formation water, might not have been the water present when the rock originally formed (Schlumberger, 2020).

Marine Litter. Any persistent, manufactured or processed solid material that is discharged, evacuated, or abandoned in the marine and coastal environment. Marine litter consists of articles that have been manufactured or used by people and that are deliberately discarded in rivers, seas and beaches; carried indirectly through rivers, sewage, torrential waters, or winds; accidental losses, including material lost at sea due to bad weather (fishing gear, cargo) or deliberately left by people on beaches and shorelines (UNEP and IMO, 2020).

Watershed. System, geographical and hydrological unit, formed by a main river and all its associated territories between the origin of the river and its mouth. It includes the area and the ecosystems (territories and minor rivers, groundwater or aquifers, coastal areas and their influence on the sea) and interactions that affect the water course, both in quantity and quality (IUCN, n.d.).

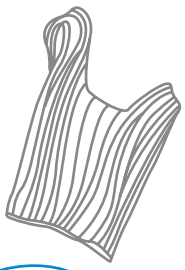
Upper basin. It includes the area of slopes and mountains, where the source of the main river is located (IUCN, n.d.).

Middle basin. Consists of undulating lands and valleys, generally where the river begins to zigzag (IUCN, n.d.).

Lower basin. Where the lowlands are located. Here, the flow of the river loses strength and solid materials settle forming plains (IUCN, n.d.).

Thermal Dome. It is an oceanographic phenomenon resulting from the action of winds and marine currents that produces the vertical displacement of deep, cold and nutrient-rich waters that approach the surface, creating an upwelling zone. It is in the Tropical East Pacific, west of Central America and can measure from 300 to 1,000 kilometers in width. The identification of the thermocline from 20 ˚C to 35 m depth has been one of the most useful ways to delimit the size and position of this variable phenomenon during the year (Fundación MarViva, n.d.).

Circular economy. It is the deliberately restorative and regenerative economy, which tries to ensure that products, components, and materials always maintain their maximum utility and value, establishing distinctions between technical and biological cycles. This new economic model attempts to decouple global economic development from the consumption of finite resources. A circular economy is based on three principles: (i) eliminating waste and pollution from the design, (ii) keeping materials in use at their highest value, (iii) regenerating natural systems (Ellen MacArthur Foundation, n.d.).



Microplastics. They are small particles and plastic fibers. There are no standards established to determine the maximum size of a particle, but the particle is generally considered to be less than 5 millimeters in diameter (FAO, 2017).

Waste. Things or materials from human activity that have been voluntarily or involuntarily discarded due to their loss of value in use, efficiency, effectiveness, excessive use and destruction or decomposition due to human or natural causes (UNEP, 2018a).

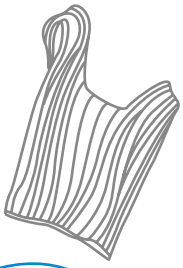
Solid waste. Waste resulting from human activities or nature and the possible consequences of its treatment or non-treatment on the quality of the soil, air, or water and on territorial planning (UNEP, 2018).

Appendix

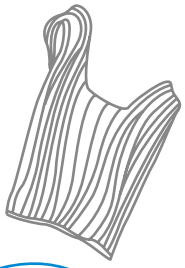
Summary sheet of authorities and regulations for marine litter and related topics

Mexico	
Departments and government agencies	• The Ministry of the Environment and Natural Resources (SEMARNAT, for its acronym in Spanish) aims to protect, restore, conserve and preserve the environment, in addition to making sustainable use of ecosystems, natural resources, goods and environmental services, to guarantee the right to a healthy environment. • The National Water Commission is a decentralized body of SEMARNAT responsible for preserving national waters and their public assets for sustainable administration to ensure water security. Among other responsibilities, it oversees the Clean Beaches Program, and one of its priority areas is pollution prevention and control. • The Federal Attorney for Environmental Protection (PROFEPA) is the inspection and surveillance arm of SEMARNAT and oversees monitoring strict compliance with the law and regulations for the management of hazardous waste in industrial establishments and services under federal jurisdiction through inspection visits carried out by its delegations in the 31 states and in the Metropolitan Area of the Valley of Mexico.

Mexico	
Departments and government agencies	• Secretariat of the Navy is responsible for exercising the National Maritime Authority in the Mexican marine areas, coasts, ports, port facilities, marine terminals and national port facilities in matters such as the prevention of marine pollution caused by ships or naval artifacts, in addition to the dumping of waste and other materials into the sea other than wastewater, among others. • National Aquaculture and Fisheries Commission: responsible for promoting and developing coordination mechanisms with different instances to implement policies, programs and regulations that lead and facilitate the competitive and sustainable development of the country's fisheries and aquaculture sector. • Intersecretarial Commission for the Sustainable Management of Seas and Coasts: Its purpose is to coordinate actions related to the formulation and implementation of national policies for the planning, management and sustainable development of the seas and coasts in the national territory. It is made up of the heads of the Ministries of Government; Foreign Affairs; Marine; Social Development; Energy; Economy; Agriculture, Livestock, Rural Development, Fisheries and Food; Communications and Transport; Tourism and Environment; and Natural Resources. • Federative entities: they are responsible for formulating, conducting and evaluating the state policy on special waste management, in addition to authorizing its integrated management. • Municipalities: they are responsible for the integrated management of urban solid waste, including collection, transfer, treatment and final disposal.
Legislation	• General Law for the Prevention and Integrated management of Waste and its Regulations refers to the protection of the environment in matters of prevention and integrated waste management. • General Health Law: refers to the possession, management and disposal of waste that may pose a risk to human health. • Law on Discharges in Mexican Marine Zones: establishes that the authority in matters of discharges is the Secretariat of the Navy and that it is responsible for the control and prevention of pollution or alteration of the sea due to discharges in Mexican marine zones. It also considers a preventive approach for the benefit of the marine environment against pollution that may result from the release or introduction into the marine environment of materials whose composition may include compounds that cause adverse effects on the marine ecosystem. • General Law on Ecological Balance and Environmental Protection: establishes that the Federation, the states, the Federal District and the municipalities will exercise their powers in matters of preservation and restoration of the ecological balance and protection of the environment. • National Waters Law: regulates the exploitation, use or utilization of national waters, their distribution and control, as well as the preservation of their quantity and quality to achieve their integrated sustainable development.
Policies	• National Policy of the Seas and Coasts of Mexico: it anticipates actions, objectives and strategies recognizing that the richness of ecosystems and marine and coastal biodiversity have been affected in part by the dumping of industrial waste in marine areas and on land due to a lack of infrastructure for the treatment of organic waste and due to the lack or insufficiency of integrated waste treatment. • National Program for the Prevention and Integrated Management of Waste: establishes the policy on urban and hazardous solid waste. • National Program for the Prevention and Integrated Management of Special Waste: establishes the policy on special management waste.



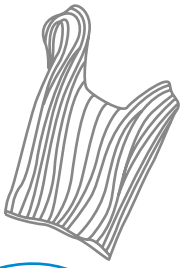
Mexico	
Marine litter awareness programs/ activities	• Campaña Limpiemos Nuestro México (Let's Clean Our Mexico Campaign): It is responsible for raising awareness in the community about the garbage problem, its solutions and its ghastly effect on the environment, as well as the need to recycle all that is possible. • Programa Playas Limpias (Clean Beaches Program): program of the Ministry of Environment and Natural Resources that focuses on the quality of the water of the most popular beaches in the country. • Yo Cuido mi Playa (I look after my beach): run by the National Association of Plastic Industries. Focuses on raising awareness on the effects of litter on the marine environment and helps clean up the beaches of Mexico. • National Cleaner Production Centres Programme: its objective is to promote the application of cleaner production in companies in developing countries and countries with economies in transition. • National Programs for the Prevention and Integrated Management of Waste and Special Waste: promotes the management and integrated management of urban solid waste, special waste, and hazardous waste in the country. It establishes the environmental policy on waste and sets objectives, guidelines, actions and goals.
Marine Protected Areas in the Pacific	• El Vizcaíno Biosphere Reserve - Upper Gulf of California and Colorado River Delta Biosphere Reserve - Pacific Islands of the Baja California Peninsula - Cabo Pulmo National Park - Los Angeles Bay Marine Zone - Nayarit National Marshes - Reserve Chamela-Cuixmala Biosphere Reserve - Huatulco National Park - La Encrucijada Biosphere Reserve - Guadalupe Island Biosphere Reserve - Deep Mexican Pacific Biosphere Reserve - Isabel Island National Park - Marietas Islands National Park - San Pedro Island Biosphere Reserve Mártir - El Veladero National Park - San Lorenzo Archipelago Marine Zone - Valle de los Cirios Flora and Fauna Protection Area - El Pinacate and Gran Desierto de Altar Biosphere Reserve - Loreto Bay National Park - Espiritu Archipelago Marine Zone Santo - Cabo San Lucas Flora and Fauna Protection Area - Cajón del Diablo Special Biosphere Reserve - Whale Channels and d e Salsipuedes - Meseta de Cacaxtla Natural Protected Area - Lagunas de Chacahua National Park - Flora and Fauna Protection Area Gulf of California Islands - Flora and Fauna Protection Area Gulf of California Islands - Islas Marías Biosphere Reserve - Park National Revillagigedo - Balandra Flora and Fauna Protection Area.
Guatemala	
Departments and government agencies	• Municipalities: the municipality is the basic unit of territorial organization of the State and within its powers is the collection, treatment and disposal of solid waste, cleaning and embellishment (Decree no. 12-2002 of the Congress of the Republic of Guatemala, articles 2 and 68 and Health Code 90-97, article 102). • Ministry of Environment and Natural Resources: its purpose is to ensure the maintenance of the ecological balance and the quality of the environment to improve the quality of life of the inhabitants of the country (Decree No. 69-86, article 11). • Ministry of Public Health and Social Assistance: within its purposes, it is to favor the access of the population to public health services, and it oversees the adequate disposal of solid waste (Health Code 90-97, articles 16 and 38). • Department of Prevention of Pollution from Ships of the General Directorate of Maritime Affairs of the Ministry of National Defense: its objective is to promote control from the ships, on the conservation, preservation and protection of Guatemalan coastlines, creating measures to prevent and eliminate pollution of the Guatemalan coastlines caused by the dumping of waste and other materials into the sea that may constitute a danger to human health, damage biological resources and marine life.



Guatemala	
Departments and government agencies	• Directorate of Fisheries and Aquaculture Regulation of the Ministry of Agriculture, Livestock and Food: competent authority for the administration of hydrobiological resources and the application of the General Law of Fisheries and Aquaculture and Ministerial Agreements establishing fisheries management measures (Ministerial Agreement No. 95-2010). • National Port Commission of Guatemala, chaired by the Ministry of Public Finance: an advisory, technical and representative institution operating with the port community to defend national port interests and contribute to the effectiveness, security and protection of the National Port System. Collaborates with those responsible for environmental management systems of the ports in the identification, control and supervision of environmental aspects and impacts of port activities in normal and emerging conditions. It promotes the creation of synergies at the port system level to resolve common issues between port companies, institutions and organizations with environmental competencies.
Legislation	• Law for the Protection and Improvement of the Environment (Decree no. 68-86): its objective is to prevent, regulate and control any of the causes or activities that cause deterioration of the environment and contamination of ecological systems, in addition to saving and restoring bodies of water that are threatened or in danger of extinction. • Regulations for the Discharge and Reuse of Wastewater and the Disposal of Sludge (Government Agreement 236-2006): its purpose is to establish the criteria and requirements for the discharge and reuse of wastewater. It also establishes evaluation, control and monitoring mechanisms for the Ministry of the Environment and Natural Resources to promote the conservation and improvement of the hydric resource. • Radioactive Waste Management Regulation (Government Agreement no. 176-2015): its objective is to establish the legal provisions and essential technical requirements for the stages of radioactive waste management in Guatemala, to guarantee the safety and protection of the people, property and the environment from the harmful effects of ionizing radiation, in the present and the future. • Regulations on Hospital Solid Waste (Government Agreement No. 509-2001): includes the collection, classification, storage, transport, treatment and final disposal of waste from public or private hospitals, autonomous or semi-autonomous medical care and veterinary centers.
Policies	• Policy for the Integrated Management of the Coastal Marine Zones of Guatemala, Governmental Agreement no. 328-2009: its general objective is to protect, manage and use coastal marine ecosystems and their hydrographic basins to guarantee their permanence and the equitable development of the population in coastal areas. Defines “Prevention of degradation and contamination” within its Strategic Lines proposal. • National Policy for the Integrated management of Residue and Solid Waste, Government Agreement 281-2015: its objective is to implement and strengthen integrated management of solid waste with involved stakeholders and sectors through social participation to promote sustainable development in Guatemala. • National Policy for the Management of Radioactive Waste in Guatemala: Its objective is to establish a safe management model for radioactive waste, in coordination with the entities that use, store and regulate activities in the country to [...] protect life, property and the environment.

Guatemala	
NGOs and communities	• Center for Conservation Studies: is a scientific research institute of the University of San Carlos de Guatemala administratively attached to the Faculty of Chemistry and Pharmacy, within which the Protected Areas Unit manages a series of nature reserves. • Center for the Study of the Sea and Aquaculture of the University of San Carlos de Guatemala: it is the academic unit directly in charge of the production, conservation, monitoring and evaluation of hydrobiological resources. During its history, the Center for the Study of the Sea and Aquaculture has contributed proactively to the development of aquaculture production in freshwater environments, the promotion of marine aquaculture, the monitoring and evaluation of the water quality of natural environments as future reservoirs and the management of fisheries, accompanying producers, businessmen, the Government and civil society in the advancement of their activities. • Institute for Research and Projection on the Natural Environment and Society: it is an academic instance created by the Rafael Landívar University to promote scientific-critical research on the current situation of the natural environment, as well as the processes that explain it and possible trends, both at a national and territorial-local scale, such as Mesoamerica. • The Inter-American Association for the Defense of the Environment (AIDA, for its acronym in Spanish): is an NGO that works to improve the quality of life of the most disadvantaged populations in developing countries and make human rights a universal reality, executing cooperation projects and involving experts and development professionals. • ARCAS: an NGO whose vision is to improve the chances of survival and conservation of endangered species and their habitats, in addition to assisting in the regional management of natural resources. • Defensores de la Naturaleza Foundation: the vision is to conserve the biological and cultural diversity of important ecosystems in Guatemala, through the sustainable use of natural resources with the active participation of society. • The Foundation for Ecodevelopment and Conservation (FUNDAECO, for its acronym in Spanish): is a private non-profit environmental organization dedicated to the creation, management, protection and conservation of Protected Areas. • Healthy Reefs Initiative: The Healthy Reefs Initiative for Healthy People was born in 2003, based on the premise that healthy reefs are essential to keep people healthy. At the same time, only healthy and prosperous local people will be able to protect the reefs and other natural resources on which their livelihoods and quality of life depend. • The Private Institute for Climate Change Research (ICC, for its acronym in Spanish): is a leading private institution in research and project development for mitigation and adaptation to climate change in the communities and productive systems of the Mesoamerican region. • The Blue World Foundation: Its objective is to protect the populations of sharks and rays in Guatemala, with a regional vision, through scientific knowledge and educational efforts that generate awareness and transform human behavior. • Rainforest Alliance: is an international non-governmental organization that works to conserve biodiversity, ensure sustainable livelihoods. • The Nature Conservancy: is a global environmental organization dedicated to conserving the lands and waters on which life depends. Guided by science, we create innovative and practical solutions to our world's most pressing challenges for the joint prosperity of nature and people. • World Wildlife Fund: conserve nature, its habitats and species, and fight against threats to life on Earth.

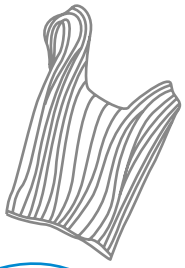
Guatemala	
NGOs and communities	• The Ocean Cleanup: foundation that develops technology to extract plastic waste and prevent it from continuing to enter ocean waters.
Programs/Activities on marine litter awareness	• Clean Beaches: its objective is to promote cleaning and solid waste collection days with municipalities and other entities to contribute to water sanitation in the population. • National Cleaner Production Centres Programme: its objective is to promote the application of cleaner production in companies in developing countries and countries with economies in transition. • Campaign #SalvarLosOceanos (Save the Oceans): The importance of caring for the oceans lies in the fact that they regulate the climate, are home to a great diversity of living creatures and are a source of food for many species, including human beings. • Limpiemos Nuestra Guatemala (Let's clean up Our Guatemala): An initiative to reduce pollution and raise awareness among the Guatemalan population about the problems generated by garbage thrown in the streets and how this affects the environment.
Marine Protected Areas in the Pacific	• Manchón Guamuchal Private Natural Reserve. • Sipacate-Naranjo National Park. • Canaima Private Natural Reserve. • Monterrico Multiple Use Area. • Hawaii Multiple Use Area.
Success of implemented policies and programs	• National Policy for the Integrated management of Residues and Solid Waste, Government Agreement 281-2015: although since its creation the different institutions responsible for the issue have aligned their actions to implement the Policy, the first monitoring will be carried out by the end of this year and the progress on the subject. • Policy for the Integrated Management of the Coastal Marine Zones of Guatemala, Government Agreement 328-2009.
Honduras	
Departments and government agencies	• Secretariat of Natural Resources and Environment: responsible for promoting the sustainable development of Honduras through the formulation, coordination, execution and evaluation of public policies aimed at achieving the preservation of natural resources and the conservation of the environment. • Secretariat of Health: entity in charge of waste management and regulation of hazardous waste generated in health establishments (hospitals) and with responsibilities in the management of solid waste for the well-being of the population. • Municipalities: responsible for providing garbage collection and disposal services at sites authorized by each Municipality. • Port National Company: manages, orders and regulates the ports of Honduras. • General Directorate of Fisheries and Aquaculture: promotion and protection of maritime and continental fishing resources, as well as aquaculture, research and fishing policies in general. • General Directorate of the Merchant Marine: national maritime authority responsible for flagging ships, training and certification of Seafarers, maritime safety, and protection of the marine environment, administering and faithfully complying with international laws and conventions, and contributing to the comprehensive development of the country.



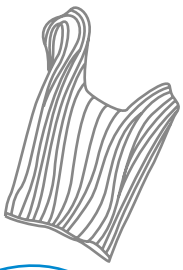
Honduras	
Legislation	• General Environmental Law: establishes the prohibition of discharging pollutants and toxic substances treating it as a crime, but without having a specific law about waste. • Regulation for the Integrated Management of Solid Waste: regulates the integrated management of solid waste, including prevention, reduction, storage and conditioning operations, transportation, treatment and final disposal of waste, promoting its utilization to avoid risks to human health and the environment. • Regulation for the management of hazardous waste in health establishments: its purpose is to regulate the management of hazardous waste produced in health establishments until their final disposal and enforce compliance with the provisions contained in articles 51 literal e), f), g), 53, 56, 57 of the Health Code, to reduce the risk of infection, intoxication of people and environmental contamination. • Health Code (DL. 65-91): requires processing wastewater discharges (Article 35) and having treatment plants for such discharges from industrial activities (Article 36). It establishes generic obligations for solid waste, defined as garbage (Article 51), including those produced by health establishments. • Organic Law of the Merchant Navy Regulations, Amendments and Annexes. Decree No. 167/94. • Regulation of Environmental Powers of the General Directorate of the Merchant Marine, Agreement DGMM no. 004/2020. • General Law on Fisheries and Aquaculture, Decree No. 106-2015.
Policies	• National Policy for the Integrated management of Solid Waste with a 3R approach in Honduras: aimed at improving the health conditions and quality of life of the population (in draft).
Marine litter awareness programs/ activities	• Honduras sin Basura (Honduras Without Garbage) Campaign: seeks to raise awareness in the Honduran population on how to properly dispose of solid waste. • Mi Playa Limpia (My clean beach) Program: promoted and executed by the Ministry of Natural Resources and Environment. • Beach and Coastal Cleaning Program: promoted and executed by the Department of Protection of the Marine Environment of the General Directorate of the Merchant Marine, it is carried out with the support of other State institutions and civil society. • Awareness campaign, “Sumate y resta plástico” (Join and reduce plastic), led by the Department of Protection of the Marine Environment, General Directorate of the Merchant Navy.
Marine Protected Areas in the Pacific	• Isla Zacate Grande - Chismuyo Bay Wildlife Reserve - Isla Zacate Grande - San Lorenzo Wildlife Reserve - Isla Guguenesi - Los Delgaditos Wildlife Reserve - Las Iguanas and Punta Condenga Wildlife Reserve - San Bernardo Wildlife Reserve - Isla del Tigre Multiple Use Area - Fonseca Gulf Archipelago Marine National Park.

El Salvador	
Departments and government agencies	• Ministry of the Environment and Natural Resources: is the rector in integrated waste management and recycling, in charge of regulating, directing, issuing authorizations, monitoring, evaluating, controlling, sanctioning and carrying out other acts necessary for compliance with the law, its regulations and other applicable technical regulations. • Municipal governments - Municipal corporation of the Republic of El Salvador: It is the representative and interlocutor of municipal interests, and its main function is to influence public policies in favor of the local development of the country. Municipalities are responsible for the management of waste generated in all areas of their jurisdiction and are responsible for promoting and guaranteeing waste management services provided by themselves or through contracting and participation of third parties, issuing the corresponding municipal regulations, in addition to establishing municipal sanctions for breach of established duties. • The Ministry of Education, in collaboration with the Ministry of the Environment and Natural Resources, must include in the national curriculum the topic of integrated waste management and the promotion of recycling at the preschool, basic, secondary and higher education levels, in addition to implementing good practices in the educational environment and in the surrounding communities. In addition, they are responsible for incorporating training programs for teachers in all public and private educational centers, to implement integrated waste management plans and encourage recycling within their facilities. It will also incorporate good waste management and recycling practices into parent guidance activities. • Ministry of Health: entity in charge of the management of hospital waste and recommendations on solid waste management. It also has the power to carry out sanitary inspections in the infrastructure and facilities related to Integrated Waste Management, such as: sanitary landfills, composters, transfer plants, recovery sites, collection centers, separation plants, recycling and treatment plants, among other public or private managers, to evaluate environmental sanitation conditions with an impact on human health. • Maritime Port Authority: regulates and controls maritime and port activities in technical, economic and administrative aspects. • General Directorate for the Development of Fisheries and Aquaculture: promotes the development of fisheries, aquaculture and the sustainability of production in inland water bodies.
Legislation	• Environmental Law: establishes the following articles regarding waste management: - Art.2: establishes an Environmental Policy that is based on the discouragement of unnecessary production of solid waste. - Art.50: refers to the protection of the soil, gives the inhabitants the obligation to use correct practices for the disposal and treatment of waste (domestic, industrial and agricultural). - Art.51: establishes measures to prevent pollution of the marine coastal environment that must be adopted by the Ministry of the Environment and Natural Resources. - Art.52: The Ministry of the Environment and Natural Resources, in coordination with other institutions, must promote and develop regulations and programs related to the prevention of pollution and the disposal of solid waste. - Art.56 al Art.60: se refieren a las regulaciones de riesgos ambientales y materiales peligrosos.

El Salvador	
Legislation	• Law on Integrated Waste Management and Promotion of Recycling. Official Journal no. 40, Volume No. 426, of February 27, 2020: its purpose is to regulate Integrated Waste Management to help guarantee the right of everyone to live in a healthy environment and promote sustainable development. • Special Regulations to the Environmental Law on Hazardous Substances, Residues and Waste (Decree 41): provides the guidelines to control the transit of hazardous substances and waste to guarantee the protection of human health and the environment. • Special regulation to the Environmental Law on the Integrated Management of Solid Waste (Decree 43): its purpose is to regulate the management of solid waste. Its scope is the management of solid waste of household, commercial, service, or institutional origin, from the cleaning of public or industrial areas like households and non-hazardous sanitary solids. • Special Wastewater Regulations (Decree 39): Its purpose is to ensure that wastewater does not alter the quality of the receiving media, to contribute to the recovery, protection and sustainable use of water resources from the effects of pollution. • Health Code: establishes that the Ministry of Health, through regional, departmental and local health agencies, must develop environmental sanitation programs, which include the elimination of garbage and other waste (Article 56). • Municipal Code: Its purpose is to develop the constitutional principles related to the organization, operation, and exercise of the autonomous powers of the municipalities, including the integrated management of solid waste.
Policies	• National Environmental Policy: it is based on the discouragement of solid waste. • National Strategy for Environmental Sanitation: it is divided into three fundamental areas: 1. Integrated management of solid waste, hazardous materials and soil decontamination. 2. Industrial and domestic wastewater treatment. 3. Basic sanitation for peri-urban and rural areas of the country. It contemplates within its priorities the expansion of coverage and improvement of the quality of services.
Marine litter awareness programs/ activities	• The National Cleaner Production Centres Program: its objective is to promote the application of cleaner production in companies in developing countries and countries with economies in transition. • National Program for the Integrated management of Solid Waste: its objective is to improve final disposal and reduce costs for municipalities by expanding the supply of treatment and final disposal of solid waste and guaranteeing the sustainability of systems through the conciliation of economic and health-environmental interests, the creation of regulatory mechanisms and the implementation of educational programs and 3R (Reduction, Reuse and Recycling of solid waste). • Program for the Recovery of Common Solids of the Ministry of Health: promotes the separation of inorganic solid waste at the source, such as plastics, aluminum and paper, among others. • Technical Guidelines for the Proper Management of Electrical and Electronic Equipment Waste. • Country guide for the reception, handling and final disposal of waste generated in normal ship operations. • Guide for the protection and prevention of pollution in the marine coastal area.

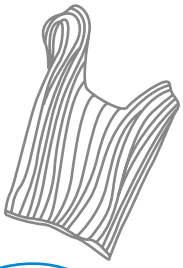


El Salvador	
Marine Protected Areas in the Pacific	• Protected Natural Area and Ramsar Site Los Cobanos Complex - Santa Clara Forest-BosqueConchagua-El Imposible-Barra de Santiago - Jiquilisco BayConservationArea - Gulf of Fonseca Conservation Area - Xiriualtique-Jiquilisco Biosphere Reserve - Jaltepeque Complex - La Union Bay.
Nicaragua	
Departments and government agencies	• Ministry of the Environment and Natural Resources: carries out the norms and regulations of natural resources and environmental quality, effectively and efficiently controlling environmental pollution through works, projects and activities, contributing to the protection of Mother Earth, adaptation to climate change, conservation and sustainable use of biodiversity, forests, soils and water. • Ministry of Health: in terms of environmental health, its priority is to significantly reduce environmental risk factors associated with solid waste management, to help protect and promote the health of the population in general in a shared and decentralized manner with the help of all sectors and entities with direct responsibilities such as local governments and environmental and sectoral authorities. • Municipalities: oversee non-hazardous solid waste. • Nicaraguan Institute of Fisheries and Aquaculture: administers the fishery and aquaculture resources of Nicaragua. • EPN (National Port Company): it is the managing authority of the national state port system, which includes all public ports; carries out necessary actions for the conservation, preservation and compensation of damages caused by third parties to the environment, within the ports under its ownership, administration, or concessions provides port services and support for tourism in the ports it manages. • Ministry of the Environment and Natural Resources, Ministry of Development, Industry and Commerce and Ministry of Energy and Mines: they coordinate the Cleaner Production Commission, with other sectors and universities. In terms of waste from ships classified by MARPOL, according to Annex V (garbage), the following are competent: • Ministry of the Environment and Natural Resources: authority responsible for evaluating, authorizing and monitoring companies dedicated to the management of hazardous and non-hazardous solid waste, final disposal facilities according to the provisions contemplated in the National Legislation and the Environmental Assessment System. • General Directorate of Water Transport: responsible authority in the port perimeter to evaluate, authorize and follow up on companies interested in managing MARPOL waste, Annex V, in correspondence with the Environmental Management Plan previously authorized by the competent authority. • General Directorate of Customs Services: competent authority to authorize the unloading of MARPOL waste and guarantee the chain of custody up to the final disposal site. • Agricultural Protection and Health Institute: competent authority to authorize landings and establish preventive measures for residues that constitute a phytosanitary risk for the country. • Minsa: competent authority that authorizes the landing of waste that constitutes a health risk for the country. • National Port Company: responsible for monitoring within the port facilities the companies authorized to handle MARPOL waste, ensuring that they are legalized and comply with the authorization of the Ministry of the Environment and Natural Resources and the General Directorate of Water Transport.

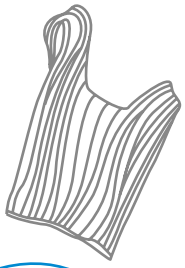


Nicaragua	
Legislation	• Law no. 168 of 1994: prohibits the traffic of hazardous waste and toxic substances and establishes that for the protection of the environment and health, the transport, handling, storage and final disposal of waste is prohibited. • Environmental Technical Standard 04 014-02 for the management, treatment and final disposal of non-hazardous solid waste: establishes the technical and environmental criteria that must be met in the execution of projects and activities for the management, treatment and final disposal of non-hazardous solid waste for environmental protection. • Environmental Technical Standard 05 015-02 for the management and disposal of non-hazardous waste; management and disposal of hazardous solid waste: its purpose is to establish the environmental technical requirements for the storage, collection, transportation, treatment and final disposal of hazardous solid waste generated in industrial activities and establishments that provide medical care. • General Health Law: establishes that the Ministry of Health must promote actions for the control, proper disposal and elimination of plastic waste and polluting chemical products. • General Law of the Environment and Natural Resources: indicates that it is the obligation of the State to protect the marine environment constituted by the waters of the territorial sea and the adjacent economic zone, the marine subsoil, the continental shelf, the beaches and their natural resources. (Article 89). It also establishes that the municipalities will operate systems for the collection, treatment and final disposal of non-hazardous solid waste of the Municipality for the protection of the environment and health (Article 129). It also prohibits the direct dumping of polluting substances or waste into soil, rivers, lakes, lagoons and any other water course (Article 113). • Law 838, General Law of Ports of Nicaragua, in which international, merchandise or passenger transport activities are carried out, as well as in those of local interest under its administration and control and in those that it may develop or promote in the future. • Art. 51. Unloading, transfer, treatment and disposal of polluting waste: all port facilities, storage areas and loading and unloading terminals must have means, systems or procedures, as established by international conventions on the matter, for unloading, transferring, the treatment and disposal of waste, petroleum residues, chemicals, oils, grease and other polluting products, resulting from the normal operations of ships. Likewise, they must have the necessary means to prevent and prevent any type of environmental pollution. The General Directorate of Water Transport is responsible for supervising, determining and approving the availability of the necessary means, systems and procedures, according to the applicable regulations, in order to authorize the operation of the facilities. • Art. 85. Classification of port services: port services are the following: a) Pilotage; b) Maritime signaling and use of access channels; c) Towing and salvage; d) Mooring and unmooring; e) Passengers, which includes: the embarkation and disembarkation of passengers, cargo, unloading of baggage, or vehicles under the passenger regime; f) Reception of solid and liquid waste generated by ships • Special Law for crimes against the environment and natural resources (Law 559): penalizes the discharge of waste or toxic pollutants into marine waters. Repealed and incorporated into the New Code of Criminal Procedure. • Special Law for Integrated management of Residues and Hazardous and Non-Hazardous Solid Waste: regulates and promotes the integrated management of residues and solid waste through environmental education, citizen participation and the promotion of sustainable use, to protect the environment and health of the population. Its purpose is to avoid and minimize generation, promoting recycling and recovery, reducing the amount of waste for final disposal and contributing to the prevention and mitigation of risks to health and the environment.

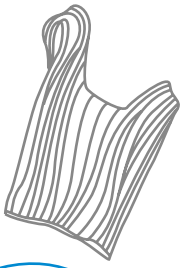
Nicaragua	
Legislation	• Sanitary Regulations for Hazardous and Non-Hazardous Solid Waste: Its purpose is to protect human health and contribute to improving the quality of life of the population, taking up the guidelines for the integrated management of solid waste established in the National Solid Waste Policy. • Ministerial Resolution 02-2008. Measures for the Control of the Triple Washing of Empty Plastic Containers of Pesticides: its purpose is the collection and management of empty plastic agrochemical containers for recovery and recycling purposes. • Municipal Ordinances by Departments and Municipalities of the country.
Policies	• National Policy on Integrated management of Solid Waste (2004-2023): its objective is to achieve the integrated management of solid, non-hazardous and hazardous waste, incorporating technical, administrative, economic, environmental and social aspects aimed at avoiding and minimizing their generation. , promoting its recovery and reducing the amount of waste destined for final disposal, in order to prevent and reduce risks to health and the environment, reduce the pressure exerted on natural resources and increase the competitiveness of the productive sectors, in a context of sustainable development and shared responsibility. • National Garbage Eradication Plan: multi-institutional alliance to properly manage and eradicate garbage. • Environmental Education Guide for the integrated management of solid waste: interactive guide for minors on environmental education in solid waste management and its consequences. • Municipal Strategic Development Plan 2018-2022: refers to municipal services related to garbage collection, cleaning of public places, transport regulation, embellishment, parks, markets and cemeteries that require the best efforts of the municipal governments. Therefore, the system will be expanded, improved and automated with modern equipment to reduce response times and care for families and the community.
Marine litter awareness programs/ activities	• National Cleaner Production Centres Programme: its objective is to promote the application of cleaner production in companies in developing countries and countries with economies in transition. • Work is carried out with the sectors involved and communities surrounding the marine-coastal zone for cleaning beaches and coasts, training, education and environmental awareness, and good management of waste recovered in the zones. • Training is being provided through the "Hazardous and non-hazardous solid waste management strategy" throughout the country and endorsing waste, including plastic.
Marine Protected Areas in the Pacific	• Delta del Estero Real Nature Reserve - Cosigüina Volcano Nature Reserve - Padre Ramos Nature Reserve - Juan Venado Island Nature Reserve - Escalante Chacocente River Wildlife Refuge - Zapatera Archipelago - La Flor Wildlife Refuge.



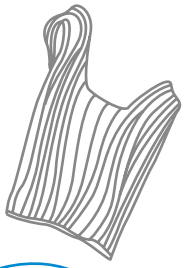
Costa Rica	
Government departments and agencies	• Ministry of Health: leading institution in waste management. • Ministry of Environment and Energy: supports the Ministry of Health, rector in waste management, in the development of regulations on waste management, as well as in the issuance and monitoring of public policies, plans and strategies. • Local governments (municipalities): responsible for the collection and management of ordinary waste. • Ministry of Public Education: environmental education on the issue of waste management. • National Coast Guard Service: police institution that protects territorial waters, the continental shelf, the insular base and the seas adjacent to the State. • Costa Rican Institute of Fisheries and Aquaculture: manages, regulates and promotes the development of fisheries and the aquaculture sector.
Legislation	• Integrated Waste Management Law: Its purpose is to regulate the integrated waste management and the efficient use of resources, through the planning and execution of regulatory, operational, financial, administrative, educational, environmental and healthy monitoring and evaluation actions. It also contemplates sanctions for the deposit of hazardous waste in marine waters. • Law No. 9786: to combat contamination by plastics. • Law No. 9703: for the prohibition of expanded polystyrene, reform of the Law for • Integrated waste management • General Health Law: prohibits any natural or legal person from contaminating territorial surface, ground and maritime waters, directly or indirectly, through drainage or the voluntary or negligent discharge or storage of liquid, solid or gaseous, radioactive or non-radioactive, sewage or substances of any nature that, by altering the physical, chemical and biological characteristics of the water, make it dangerous for the health of people, terrestrial and aquatic fauna or unusable for domestic, agricultural, industrial or recreational uses. (Article 275). • Organic Law on the Environment: establishes that the State, municipalities and other public institutions are responsible for the collection and management of waste. • Regulation on the Discharge and Reuse of Wastewater (Decree No. 33601). • Regulation for the creation of the Environmental Fee for Landfill Decree no. 31176-MINAE 2003: proposes an economic instrument to reduce water pollution. • Executive Decree No. 36093. Regulation on the management of ordinary solid waste: its objective is to protect public health and the environment, through the integral management of ordinary solid waste.
Policies	• National Strategy for the Substitution of Single-Use Plastics: aims to contribute to the solution of the problem of pollution generated by plastics in the hydrographic basins of the Greater Metropolitan Area, as well as its effects on the Costa Rican Pacific. • Policy for Integrated Waste Management (2010-2021): its purpose is to guarantee and respect access to and exercise of the right to a healthy environment and the right of society to be co-responsibly informed in matters of integrated waste management. • National Plan for Integrated Waste Management (2016-2021): Its objective is to guide government and private actions through a consensual and updated plan that guides intersectoral work in integrated waste management, in accordance with existing conditions and a gradual implementation.



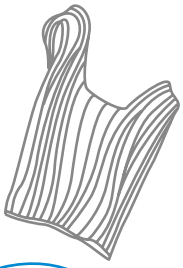
Costa Rica	
Políticas	• Costa Rica Solid Waste Plan: aims to guide government and private actions on the issue, through an agreed strategy to implement adequate comprehensive waste management in the country. • Strategy for the recovery of urban basins 2020-2030, Clean Rivers: its objective is to manage the recovery of urban rivers and their environment, through the implementation of actions aimed at improving the ecosystem and the quality of life of the people around them. urban watersheds.
NGOs and communities	• 5-minute beach cleanup: promotes dedicating a minimum of 5 minutes in beach cleaning. • MarViva Foundation (Chao Plástico Desechable): promotes the reduction of disposable single-use plastics. • Conservation International (Repetí en voz alta, sin bolsa, gracias): encourages to reject the use of plastic bags in stores. • The truth about plastic (Alonso Muñoz): reports on the multiple harmful effects of plastic on ecosystems. • Terranostra Association (#YoSeparo Movement): coordinates volunteers to clean beaches and rivers in association with the international organization Ocean Conservancy. • Preserve Planet (Playa Botella y No Seás Plástico): advocates reducing the consumption of plastic since recycling is not enough. • Keto Foundation (Mar Sin Plástico): seeks to raise awareness and generate knowledge about the problem of garbage and especially, the plastic that reaches the sea.
Marine litter awareness programs/ activities	• National Integrated Solid Waste Management Program: states that all public and private educational centers, at their various levels and modalities, must establish and implement Integrated Waste Management Plans. • Limpia tu Huella Campaign: Its objective is to clean and give a break to the marine species that inhabit the Camaronal Refuge, especially the turtles that have been the most affected by the impact of humans on the beaches.
Marine Protected Areas in the Pacific	• Santa Rosa National Park - Las Baulas de Guanacaste National Marine Park - Ostional National Wildlife Refuge - Camaronal National Wildlife Refuge - Caletas-Arío Mixed Wildlife Refuge - Cabo Blanco Marine Management Area - Cipancí National Wildlife Refuge - Puntarenas Estuary Wetland and Associated Mangroves - San Lucas Island National Park - Playa Blanca Marine Wetland - Playa Hermosa-Punta Mala National Wildlife Refuge - Manuel Antonio National Park - Ballena Marine National Park - Térraba-Sierpe National Wetland - Isla Biological Reserve del Caño - Corcovado National Park - Río Oro National Wildlife Refuge - Piedras Blancas National Park - Cocos Island National Park - Marine Management Area-Seamounts - Santa Elena Bay Marine Management Area.
Panama	
Government departments and agencies	• Ministry of the Environment: authority in charge of generating the conditions for the formulation, application and execution of an adequate national environmental policy. • Panama Aquatic Resources Authority: promotes the sustainable use of aquatic resources. • Urban and Residential Sanitation Authority. • Municipalities: exclusively responsible for the collection, treatment and final disposal of waste. • Ministry of Health: responsible for addressing waste-related issues from a public health point of view. It formulates the necessary regulations for the management and handling of solid and hazardous waste.



Panama	
Government departments and agencies	• Panama Maritime Authority: manages, promotes, regulates, projects and executes strategies, standards, plans and programs related to the operation and development of the maritime sector. • Panama Canal Authority: it is exclusively responsible for the operation, administration, operation, conservation, maintenance, improvement and modernization of the Canal, as well as its related activities and services.
Legislation	• Executive Decree No. 111 (1999) Regulations for the Management and Handling of Solid Waste in Health Establishments: regulates everything related to the management and handling of solid waste generated in human or animal health establishments, public and private, to protect the health of people and the environment. • Decreto Ejecutivo no. 197 de 1996: crea la Red Nacional de Residuos Sólidos, la cual corresponde al Ministerio de Salud. • Law No. 8 of 1991: prohibits the import of toxic or contaminated waste. • Sanitary Code: in relation to the control of the environment, it establishes that collecting and treating garbage, residue and waste are local sanitary activities. • Law No. 41 of 1998. General Environment: establishes that it is the duty of the State, through the competent authority, to regulate and control the differentiated management of domestic, industrial and hazardous waste, in all its stages, including generation, collection, transport, recycling and final disposal. • Law No. 106 of 1973, on the Municipal Regime: establishes that it is the responsibility of the Municipal Councils to collect, destroy or utilize garbage and waste. • Law no. 6 of February 6, 2017: establishes the integrated management of solid waste in public institutions. • Law no. 1 of January 19, 2018: adopts measures to promote reusable bags in commercial establishments. • Law no. 33 of May 30, 2018: establishes the Zero Waste Policy and its action framework for integrated waste management and dictates other provisions. • Law no.1 87 of December 2, 2020: regulates the reduction and progressive replacement of single-use plastics.
Policies	• National Integrated Waste Management Plan 2017-2027: contemplates, on a national scale, the current conditions of waste collection, treatment and disposal, and will propose the regulatory framework and the necessary technical measures to solve present and future waste management problems in Panama. • National Policy for the Integrated Management of Non-Hazardous and Hazardous Waste: promotes the environmentally sound and sustainable management of non-hazardous and hazardous waste with a comprehensive approach that incorporates minimization, recovery, reuse, segregation, recycling, use of best available techniques, the development of best environmental practices, cleaner production, and the use of effective and efficient technologies in accordance with the national reality. • National Manual for the Management of International Non-Hazardous Waste in the Air, Sea and Land Ports of the Republic of Panama. • Government Strategic Plan 2019-2024. • National Policy for Cleaner Production. • National Policy of Environmental Supervision, Control and Supervision. • National Climate Change Policy. • National Wetlands Policy.

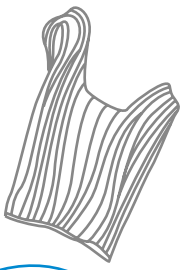


Panama	
Policies	• National Biodiversity Strategy • National Water Security Plan 2015-2050.
NGOs and communities	• National Association for the Conservation of Nature – Basura Cero-Cambia tu Barrio Campaign: consists of an alliance to face the imminent waste management crisis in Panama City. • Promar. • MarViva. • Marea Verde. • Mimar. • CostaRecicla.
Marine litter awareness programs/ activities	• Recicla por tu futuro Campaign (formerly part of the Basura Cero Program), a public-private agreement: focused on the Municipality of Panama and based on 4 areas: 1) Logistics, 2) Awareness-raising, 3) Local and national regulations, 4) Economy. • Municipio de Panama Recicla: inter-institutional alliance that seeks to strengthen the Recicla por tu Futuro Program. • Investment Project "Recolección de basura marina y Redes Fantasma": its objective is to design, together with the community, an action plan for the collection of ghost nets, cleaning of marine litter and recovery of areas of fishing interest in various coastal communities as a participatory process. • Green classrooms, in which Audubon and Marea Verde implement an education campaign in elementary schools located in the middle basin of the Matías Hernández River. In this way they are motivated to become actors of change, creating a cleaner future for our country. • #ChaoPlasticoDesechable campaign of the MarViva Foundation. • Campaign "Sin carrizo, por favor" launched by the Tortuguías Foundation. • BOB is a floating barrier that traps the waste carried by the river preventing it from reaching the coast and therefore the mangrove swamp, also facilitating its collection.
Marine Protected Areas in the Pacific	• Gulf of Montijo Wetland of International Importance - Cerro Hoya National Park - Santa Ana de Los Santos Forest and Maritime Reserve - Sarigua National Park - Chame Bay Mangrove Multiple Use Area - Punta Patiño Wetland of International Importance - Managed Resources Area Cordillera de Coiba - Gulf of Chiriquí National Marine Park - David District Coastal Mangroves Protected Area - Boca Vieja Beach Wildlife Refuge - La Barqueta Agrícola Beach Wildlife Refuge - Isla Montuosa Gulf of Chiriquí Wildlife Refuge - Urban and Environmental Territorial Protection Zone Coastal Sector of Chitré - Isla Cañas Wildlife Refuge - Isla Iguana Wildlife Refuge - Corregimiento del Espinal Coastal Zone Protected Area - Pablo Arturo Barrios Wildlife Refuge - Peñón de La Honda - Protected Area Coastal Zone of Corregimiento de La Enea - Wildlife Refuge Bay of Panama Star and Ramsar Site - Isla de Taboga and Urabá Wildlife Refuge - Isla Boná Wildlife Refuge - Coastal Marine Reserve Zone Los Manglares de Panamá Viejo - Isla del Rey Hydrological Reserve - Coiba National Park - Managed Resource Areas Ciénaga de las Macanas - Mangroves and Related Ecosystems within the District of Penonomé - Mangrove Ecological and Forest Reserve of the District of Antón - La Marinera Beach Reserve Area - Ciénaga El Mangle Wildlife Refuge - Punta Bruja Protected Landscape and Dejal Mangroves - Wetland of International Importance Punta Patiño Wetland.



Colombia	
Government departments and agencies	• Ministry of Environment and Sustainable Development – Directorate of Marine, Coastal and Aquatic Resources Affairs: provides relevance to conservation and sustainable development within the framework of public policy and management with other sectors in marine and coastal areas, giving special relevance to risk management in coastal marine areas and the prevention of pollution. • Colombian Ocean Commission: intersectoral body for advice, consultation, planning and coordination of the national Government in matters of National Ocean Policy and Coastal Spaces and different related, strategic, scientific, technological, economic and environmental issues related to the sustainable development of Colombian seas and their resources. • National Unit for Disaster Risk Management: directs, guides and coordinates Disaster Risk Management in Colombia. • Municipalities: are responsible for the management and collection of garbage. They play an important role in outreach campaigns, socialization, and promotion of programs to be implemented for the integrated management of waste or hazardous waste. • Ministry of Health: responsible, together with the Ministry of the Environment, for issuing the necessary regulations for environmental sanitation and the use, management and exploitation of natural resources to eliminate or mitigate the environmental impact of polluting activities in the environment and to reduce the main causes of morbidity and mortality related to the inadequate management of hospital waste and the like in the national territory. • Ministry of Agriculture: oversees the regulation of waste management in agricultural and livestock production. • National Aquaculture and Fisheries Authority: advances processes of planning, research, management, promotion, regulation, registration, information, inspection, surveillance and control of fishing and aquaculture activities, applying appropriate sanctions within a policy of promotion and sustainable development of these resources. • General Maritime Directorate: executes the Government's policy in this area. It contributes to the strengthening of the national maritime power, ensuring comprehensive maritime security, the protection of human life at sea, the promotion of maritime activities and scientific and technological development.
Legislation	• Law no. 1672, establishes the guidelines for the adoption of a public policy for the integrated management of waste from electrical and electronic equipment (WEEE): WEEE is waste that requires differentiated management according to the guidelines established for this purpose by the Ministry of Environment and Sustainable Development. • General Environmental Law: establishes retributive and compensatory rates for introducing or throwing waste directly or indirectly into the atmosphere, water and soil. • National Sanitary Code: establishes the sanitary standards related to human health and procedures and measures that must be adopted for the regulation, legalization and control of discharges of waste and materials that affect or may affect the sanitary conditions of the environment. • Law 430 of 1997: dictates prohibitive standards and environmental responsibility regulations related to hazardous waste. • Law 1252 of 2008, dictates prohibitive regulations on environmental matters, referring to residues and hazardous waste and other provisions. • Decree 1713 of 2002: establishes standards aimed at regulating the public sanitation service within the framework of the integrated management of ordinary solid waste, in relation to its components, levels, classes, modalities, quality and the regime of the providers of the service and the users.

Colombia	
Policies	• Tax on plastic bags with an annual increase of 50%: its purpose is to discourage the consumption of plastic bags in search of environmental protection. • Policy for the Integrated Management of Residues or Hazardous Waste: its objective is to prevent the generation of residues or hazardous waste and promote the environmentally sound management of those that are generated, to minimize the risks to human health and the environment, contributing to sustainable development. • Policy for Integrated Waste Management: its fundamental objective is to "prevent or minimize" in the most efficient way the risks to human beings and the environment caused by solid and hazardous waste and especially, to minimize the amount or hazard of those that reach final disposal sites, contributing to effective environmental protection and economic growth. • National Policy for the Ocean and Coastal Areas: focused on strengthening integrated strategies to minimize problems in coastal marine areas, while promoting the use, conservation of resources and sustainable use of the ocean, recognizing that these translate in a potential area of economic, social and cultural development for the country.
Marine litter awareness programs/ activities	• Zero Garbage Program: aims to get the citizens of Bogotá involved in the reduction, separation and use of solid waste. • Management Program for Integrated Waste Management: performs the integrated management of waste generated by the National Unit for Disaster Risk Management, providing tools that generate a minimum risk to the health of the population and the environment, seeking the minimization, reuse, recycling and proper disposal of waste. • Post-consumer Waste Programs: The Ministry of Environment and Sustainable Development has been advancing a strategy aimed at promoting the environmentally appropriate management of post-consumer waste to subject it to differential management systems and avoid final disposal together with domestic waste. It involves the extended responsibility of the producer as a fundamental element.
Marine Protected Areas in the Pacific	• Utría National Natural Park - Uramba Bahía Málaga National Natural Park - Farallones de Cali National Natural Park - Sanquianga National Natural Park - Malpelo Fauna and Flora Sanctuary - Gorgona National Natural Park - Baudó River Delta Ramsar Site.



363.737.091.164.3
M391m MarViva Foundation
Marine Litter Action Plan for the Northeast Pacific 2022–2026 / MarViva Foundation, Alberto Quesada, María Alejandra Fernández García ; translator Ana María Piza. [San José, Costa Rica] : MarViva Foundation, 2022.
115 pages, color illustrations, PDF

ISBN 978-9930-611-07-4

1. MARINE POLLUTION. 2 MARINE ENVIRONMENT. I. Quesada, Alberto. II. Fernández García, María Alejandra. III. Piza, Ana María. IV. Title

UN environment
United Nations Environment Programme

GPML
Global Partnership on Marine Litter

MarViva
www.marviva.net