



LEGAL BRIEF

A “Source-to-Sea” (S2S) approach to address marine plastic pollution: Policy, legal and institutional outlook

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Introduction

Holistic, inclusive and adaptive approaches are essential to address complex and dynamic challenges such as climate change, biodiversity loss and pollution.

One of the largest pressures affecting both nature and people globally is pollution, which results from untreated wastewater discharges, agricultural runoff, stormwater from urban areas, plastics and other sources. Pollution poses a threat to the effective management and governance of interconnected land, freshwater, coastal and marine ecosystems.

Basins constitute an example of this, where soils, rivers, lakes, aquifers, wetlands and seas are interconnected in a continuum. In the same way ecosystems in a river basin are interconnected, their challenges and pressures are likely to spread passing from a local specific concern to grow to a national, regional and even global challenge. This can be seen in the case of basins in Asia (Ganges, Indus, Yellow, Yangtze, Haihe, Pearl, Mekong and Amur) and in Africa (Nile and Niger) which constitute some of the largest land-based sources of marine plastic pollution worldwide (McIntyre, 2022). Similarly, plastic pollution can result in extensive environmental, social and economic impacts which require coordinated and cooperative efforts among multiple key stakeholders, at different governance levels to collectively prevent, control and reduce this pressure and its effects. Often, plastic pollution in river basins span across State administrative and political boundaries, as in the case of the Ganges, Indus, Mekong, Amur, Nile and Niger, adding a political level of complexity to their management which demands regional and transboundary coordination and cooperation efforts to

ensure coherence and integrated actions that recognise the different multiple levels of governance that regulate these ecosystems.

The management and governance of land, water, coastal and marine ecosystems is complex and dynamic by nature. Each one of these ecosystems is regulated by policies, laws and institutions that govern their access, use and protection and has specialised management approaches. This, at first would not seem to be a concern, however, when considering these as part of a complex interconnected and interdependent system such as a river basin, there is a risk to encounter management gaps, contradictory approaches and fragmented policies, laws and institutions.

Some approaches to manage interconnected and interdependent ecosystems include:

- Integrated Water Resource Management
- Integrated Coastal Zone Management
- Ecosystem-based Approaches
- Marine Spatial Planning
- Ridges to Reefs
- Source-to-sea (S2S)

While there is merit to define these approaches to better understand the differences between them, for the purpose of this assessment, we will focus on the S2S given the fact that this approach not only consider the interconnectedness between the physical ecosystem elements of a basin, but also the mutual interdependencies between the different stakeholders that live and depend on their resources, as well as the various environmental, social, economic and political dynamics among them.

Governance

The effectiveness of a S2S approach depends on the policy, legal and institutional frameworks and mechanisms in place to coherently regulate land, freshwater, coastal and marine ecosystems.

The governance challenge to implement such an approach is that commonly, States regulate these ecosystems and natural resources in silos, often with gaps as well as contradictions and fragmentation. Most of the times, national environmental strategies, plans and agendas focus on specific environments and sectors without considering their interconnections and interdependencies. Considering that, it is necessary that States adopting this approach procure a throughout analysis of the different policy, legal and institutional processes at the regional, basin, national and local levels to determine the needed actions to ensure an effective source-to-sea implementation. States should also promote coordination and

cooperation among the multiple stakeholders representing different governance levels and sectors that are involved in the management and governance of the source-to-sea continuum. This will help to identify the needs, priorities and interests of these stakeholders with the aim to ensure benefits for all (Welling et al., 2021).

As the impact and effects of marine plastic pollution have progressively been recognised and addressed, States have been gradually adopting binding as well as non-binding mechanisms to deal with this challenge incorporating aspects related to the S2S approach that are materialised in plans, strategies, declarations and agreements at different levels from global to local.

The following is a selection of mechanisms that directly or indirectly serve to establish the legal foundation for a S2S approach at international level.



A. Global Level

States have committed to ensure the protection of rivers, coastal and marine ecosystems, recognising their connectivity as a continuum mainly through three instruments of global nature, the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses (UN Watercourses Convention), the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention) and the 1982 Convention on the Law of the Sea (UNCLOS Convention).

i. 1997 UN Watercourses Convention

The 1997 UN Watercourses Convention is the main global treaty regulating the uses of international watercourses by providing measures for their protection, preservation and management. In terms of pollution, the Convention defines it as any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct (Art. 21.1).

The Convention elaborates on this definition by establishing that States shall prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse. (Art. 21.2). In terms of specific measures to consider, the Convention determines that States shall consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of an international watercourse, such as (Art. 21.3):

- Setting joint water quality objectives and criteria.
- Establishing techniques and practices to address pollution from point and non-point sources.

- Establishing lists of substances, the introduction of which into the waters of an international watercourse is to be prohibited, limited, investigated or monitored.

Regarding the connection with the marine environment, the Convention expressly establishes that States shall cooperate to take all measures that are necessary to protect and preserve it, including estuaries (Art. 21.2)

ii. 1992 UNECE Water Convention

The Water Convention adopted in 1992 within the United Nations Economic Commission for Europe, thoroughly provides for the protection of transboundary watercourses focusing on water quality aspects. In this sense, it expressly establishes the following obligations to take measures to prevent, control and reduce any transboundary impact. (Art. 2):

- a. To prevent, control and reduce pollution of waters causing or likely to cause transboundary impact.
- b. To ensure that transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection.
- c. To ensure that transboundary waters are used in a reasonable and equitable way, considering their transboundary character, in the case of activities which cause or are likely to cause transboundary impact.
- d. To ensure conservation and, where necessary, restoration of ecosystems.

The Convention also contemplates that measures for the prevention, control and reduction of water pollution shall be taken, where possible, at source. Finally, it establishes that these measures shall not directly or indirectly result in a transfer of pollution to other parts of the environment.

In terms of prevention, control and reduction of pollution, the Convention establishes that (Art

3) States shall develop, adopt and implement as far as possible, render compatible relevant legal, administrative, economic, financial and technical measures among others to ensure:

- a. The emission of pollutants is prevented, controlled and reduced at source through the application of, inter alia, low- and non-waste technology.
- b. Transboundary waters are protected against pollution from point sources through the prior licensing of waste-water discharges by the competent national authorities, and that the authorized discharges are monitored and controlled.
- c. Limits for waste-water discharges stated in permits are based on the best available technology for discharges of hazardous substances.
- d. Stricter requirements, even leading to prohibition in individual cases, are imposed when the quality of the receiving water or the ecosystem so requires.
- e. At least biological treatment or equivalent processes are applied to municipal wastewater, where necessary in a step-by-step approach.
- f. Appropriate measures are taken, such as the application of the best available technology, to reduce nutrient inputs from industrial and municipal sources.
- g. Appropriate measures and best environmental practices are developed and implemented for the reduction of inputs of nutrients and hazardous substances from diffuse sources, especially where the main sources are from agriculture (guidelines for developing best environmental practices are given in annex II to this Convention).
- h. Environmental impact assessment and other means of assessment are applied.
- i. Sustainable water-resources management, including the application of the ecosystems approach, is promoted.
- j. Contingency planning is developed.
- k. Additional specific measures are taken to prevent the pollution of groundwaters.
- l. The risk of accidental pollution is minimized.

In terms of the protection of the marine environment, the Convention establishes that States shall cooperate on the basis of equality and reciprocity in particular through bilateral and multilateral agreements to develop harmonised policies, programmes and strategies aimed at the prevention, control and reduction of transboundary impact aimed at the protection of transboundary waters or the environment influenced by such waters, including the marine environment.

iii. Law of the Sea

The 1982 Convention on the Law of the Sea (UNCLOS) is the main global instrument that governs the rights and obligations of States in all marine and maritime activities. This Convention incorporates a section on the protection and preservation of the marine environment from land-based sources.

UNCLOS is clear by providing that States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, considering internationally agreed rules, standards and recommended practices and procedures

UNCLOS establishes that States have the right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment. As part of the measures to prevent, reduce and control pollution of the marine environment the Convention establishes that:

1. States shall take all measures necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection.

2. States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights
3. The measures taken pursuant to this Part shall deal with all sources of pollution of the marine environment. These measures shall include, inter alia, those designed to fully minimize:
 - a. the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping.

The International Convention for the Prevention of Pollution from Ships (MARPOL) is another key treaty which aims at preventing marine pollution from ships due to operational or accidental causes. Annex V of MARPOL specifically prohibits the discharge of plastics and garbage from ships into the sea. MARPOL plays a critical role in addressing marine plastic pollution by regulating waste disposal at sea and promoting proper waste management on vessels.

The 1972 London Dumping Convention together with its 1996 Protocol, focuses on controlling the deliberate disposal of wastes at sea. It bans the dumping of plastics and other harmful materials from vessels, aircraft, and platforms, thereby complementing MARPOL's objectives. The London Dumping Convention strengthens global efforts to reduce marine plastic pollution by targeting ocean dumping practices.

Together, these international agreements are part of the legal framework tackling marine pollution from land-based sources and as such essential to set out the basis for a S2S approach to address pollution across the entire water cycle from land into the ocean.

iv. Principles

It is worth noting that the UN Watercourses Convention, the UNECE Water Convention and UNCLOS define rights and obligations to States in terms of the use, management and protection of land, freshwater, coastal and marine environments. These rights and obligations are enshrined in principles that, as such inform development of agreements and related instruments and for that are relevant to be considered in the context of a S2S approach:

- Equitable and reasonable use
- Obligation not to cause significant harm
- Duty to cooperate
- Environmental Protection and Ecosystem Approach
- Pollution prevention, reduction and control
- Sustainable use
- Precautionary principle
- Polluter pays principle

In summary, the UN Watercourses Convention, the UNECE Water Convention and the Law of the Sea, provide guidance for States to manage land, freshwater, coastal and marine ecosystems in a continuum which can serve as the basis for the development of specific national and local level legislation.

B. Regional Level

At regional level, States have negotiated and adopted several multilateral agreements primarily under the UNEP Regional Seas Programme to protect the marine environment considering the impacts from land-based sources and thus relate to the subject matter of this paper. The following are some of the most relevant ones:

v. Convention on the Protection of the Marine Environment of the Baltic Sea Area

The Convention includes the protection of the Baltic Sea from all sources of pollution from land, air and sea. It also commits the signatories to take measures on conserving habitats and biological diversity and for the sustainable use of marine resources. The Convention covers the whole of the Baltic Sea area, including inland waters as well as the water of the sea itself and the seabed. Measures are also taken in the whole catchment area of the Baltic Sea to reduce land-based pollution.

vi. Convention for the Protection of the Marine Environment of the North-East Atlantic

This Convention establishes that Parties shall take all possible steps to prevent and eliminate pollution and shall take the necessary measures to protect the maritime area against the adverse effects of human activities to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected. This includes all possible steps to prevent and eliminate pollution from land-based sources.

vii. Convention for the Protection of the Mediterranean Sea Against Pollution and Protocols

The Convention provides that Parties shall take all appropriate measures in force to which they are party to prevent, abate, combat and

eliminate pollution of the Mediterranean Sea Area and to protect and enhance the marine environment in that Area to contribute towards its sustainable development. An important Protocol for this Convention is the Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources and Activities which establishes that States shall take all appropriate measures to prevent, abate and eliminate to the fullest extent possible pollution of the Mediterranean Sea by from land-based sources and activities, by the reduction and phasing out of substances that are toxic, persistent and liable to bioaccumulate listed in the Protocol.

viii. Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region

This Convention establishes that Parties shall endeavour to conclude bilateral or multilateral agreements including regional or sub region, for the protection of the marine environment including pollution from land-based sources caused by coastal disposal or by discharges emanating from rivers, estuaries, coastal establishments, outfall structures or any other source on their territories.

ix. Convention for Co-operation in the Protection and Development of the Marine and Coastal environment of the West and Central African Region and protocol

This Convention provides that Parties shall take all appropriate measures to prevent, reduce, combat and control pollution in West Africa and Central African Region. This includes pollution from land-based sources that are caused by discharges from rivers, estuaries, coastal establishments and outfalls, coastal dumping or emanating from any other sources on their territories.



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x. **Convention on the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean**

This Convention establishes that States shall take all appropriate measures in force to which they are party, to prevent, reduce and combat pollution and to ensure sound environment management of natural resources, using for this purpose the best practicable means at their disposal, and in accordance with their capabilities. In terms of land-based sources and activities. In terms of land-based sources, the Convention establishes that States shall take all appropriate measures to prevent, reduce and combat pollution of the Convention area caused by coastal disposal or by discharges emanating from rivers, estuaries, coastal establishments, outfall structures, or any other land-based sources and activities within their territories.

xi. **Framework Convention for the Protection of the Marine Environment of the Caspian Sea**

This Convention governs the protection of the Caspian environment from all sources of pollution including the protection, preservation, restoration and sustainable and rational use of the biological resources. This Convention applies to the marine environment of the Caspian Sea, considering water level fluctuations, and pollution from land-based sources. In terms of pollution from land-based source, this Convention provides that States shall cooperate in the development of Protocols prescribing additional measures for prevention, reduction and control of pollution of the Caspian Sea from land-based sources

In a nutshell, these regional agreements have helped to protect the marine environment from land-based sources of pollution through critical mechanisms including monitoring, data and information exchange as well as consultation.

C. Basin Level

At river basin level, States have developed and adopted multiple agreements to address the challenges affecting the use, management and protection of land, freshwater, coastal and marine ecosystems as a continuum. The following are two examples that illustrate provisions relevant to the implementation of the S2S approach:

xii. Convention on the Cooperation for the Protection and Sustainable use of the Danube River

The Parties to shall strive at achieving the goals of a sustainable and equitable water management, including the conservation, improvement and the rational use of surface waters and ground water in the catchment area as far as possible. Moreover, Parties shall make all efforts to control the hazards originating from accidents involving substances hazardous to water, floods and ice hazards of the Danube River. Parties shall endeavour to contribute to reducing the pollution loads of the Black Sea from sources in the catchment area.

xiii. Convention on the Protection of the Rhine River

The Convention establishes that States shall pursue the sustainable development of the Rhine ecosystem through among others maintaining and improving the quality of the Rhine's waters, including the quality of suspended matter, sediments and ground water, notably by - preventing, reducing or eliminating as far as possible pollution caused by noxious substances and by nutrients from point sources (e.g. industry and municipalities) and diffuse sources (e.g. agriculture and traffic) - including that from groundwater - and pollution from shipping. Also, a specific objective of this Convention is to help restore the North Sea in conjunction with actions to protect it

In brief, the examples provided above indicate there is still limited inter-connection between the river, coastal and marine environments and the reference to coastal and marine environment is broad in terms of defining the mechanisms to ensure their conservation in relation to the land and inland waters. Relating to that the assumption is that river basin organisations will define their mandate within the borders of a river/lake basin and leave the rest of the competencies to the respective sea organisation. Hence, to implement a S2S approach, at least coordination between these two instances should be fostered with a view of securing a coherent approach.



D. National Level

States are progressively developing and adopting plans, policies and laws to control, prevent and reduce plastic pollution. Some of these efforts are directed to strengthen waste management by banning single use plastics, as well as through economic instruments like taxes and fees, labelling and certifications; and by adopting best practices including circular economy. The following are some examples of national efforts to address marine plastic pollution:

xiv. Bans on Single Use Plastic:

- Barbados: Control of Disposable Plastics Act
- Peru: Law that Regulates Single Use Plastic and Disposable Containers or Packing
- Colombia: National ban on Single Use Plastic at National Natural Parks
- Benin: National ban on the production, importation, possession, and use of nonbiodegradable plastics
- DR Congo: National ban on the production, importation, commercialization, and distribution of nonbiodegradable plastic bags and packaging

xv. Economic instruments:

- Colombia: National fee on plastic bags
- Ecuador: National fee on plastic bags
- England: Single Use Carrier Bags Charges
- Estonia: Packaging Act

xvi. Labelling and certifications:

- EU Classification: labelling and packaging of chemicals
- EU: Packaging and Packing Waster Regulation

xvii. Circular Economy:

- German Circular Economy Act
- Scotland Circular Economy Bill
- Philippine Circular Economy Promotion Act

It is outside the scope of this report to analyse in detail each of these instruments, however it has to be stressed that addressing marine plastic pollution becomes much more complex as legislation spreads across different themes that cut across sectors and embraces various approaches let aside the bodies responsible for monitoring implementation: what institution out of the existing ones? Or is it worth creating a specialised agency?



E. Local Level

It is estimated that nearly 75% of the total plastic waste generation derives from municipal solid waste streams, much of which ends up in landfills, waterways, and the ocean (UNEP, 2023). Coastal cities associated with urban drainage and paved surfaces highly contribute to plastic pollution into the ocean (Meijer et al, 2021). Governance at the local level is mostly reflected in the provision of public services including water and waste management. Local governments also determine permits to construct infrastructure, approve specific activities as well as carry out the necessary controls to ordinances and environmental impact assessments. These are competencies that require large amounts of funding to be carried out in an effective manner. The lack of

funding to ensure the adequate provision of basic public services, the control and monitoring of activities might impact ecosystems and human health (Mathews & Stretz, 2019). Some of the efforts from municipalities to control, prevent and reduce marine plastic pollution include banning single use plastics, strength waste management systems as well as the installation of net traps and barriers to catch plastic before entering to the ocean.

In short, at local level, municipalities have a relatively clear mandate and competences, however the various functions that these have require large financing that not all cities can access. In this sense, the lack of resources for monitoring purposes becomes a challenge for the local management of marine plastic pollution.



Preliminary assessment

The overview above suggests that various efforts have been made at global, regional, basin, national and local levels to address marine plastic pollution.

Agreements at global, regional and basin levels include a land, water and coastal continuum to address pollution. However, this continuum could be reinforced through the implementation of a S2S approach.

While the agreements reflect holistic attempts to manage complex system looking into its

environmental, social, economic and political dynamics, governance instruments at national and local levels to address the breath of the complexities of marine plastic pollution are still in early stages.

At these levels, we find various plans, ordinances and laws that address plastic pollution mainly through bans and economic incentives, without looking at aspects of ecosystem connectivity, human health and public participation.

Governance level	Policy dimension	Legal dimension	Institutional dimension
Regional	Regional declarations to prevent marine plastic pollution	Convention to prevent marine pollution from plastics	Economic organisation
Basin	River basin mgmt. plan on plastic pollution	Convention on plastic pollution management	River Basin Organisation
National	Strategy to prevent, control and reduce plastic pollution	Environmental code, water code, plastic pollution act	Ministries of Env., Water, Climate Change
Local	Plan to control plastic pollution at source	Ordinance on plastic pollution	Municipal, env., water, waste management authorities

A critical point in this review is that the institutional dimension to address marine plastic pollution is still rather unclear, given the fact it is considered mainly from a waste management perspective which limits the complex environmental, social, economic and political dimension and potential impacts for nature and people.

The lack of a specialised agency in charge of implementing the various regulations on marine plastic pollution might compromise the effective monitoring of land-based sources, as well as the capacities required to coordinate actions across different institutional layers.

Initial findings

Given that the regulation of marine pollution from plastics is still under development, below are some findings about the S2S approach in the context of marine plastic pollution:

- **Management:** The complexities derived from addressing marine pollution from plastics require an approach that consider critical interconnected ecosystems; multiple dynamics happening in it and the variety of mechanisms available and to be developed for its management. In this context, the S2S appears as a suitable approach to address marine plastic pollution.
- **Environmental, social, economic and political aspects:** Marine plastic pollution is a complex challenge that affects ecosystems, biodiversity, human health, livelihoods and in some cases even the relationships between States. This challenge needs to be addressed in a holistic, inclusive and adaptive manner.
- **Principles:** Pollution and marine plastic pollution requires attention from States based on fundamental principles such as cooperation, the duty not to cause significant harm, the duty to prevent and the polluter pays principle.
- **Cooperation and coordination:** As land, water, coastal and marine ecosystems are complex and span across different political and administrative borders, they need to be managed and governed based on cooperation in good faith between States and with a spirit of coordination between the different relevant stakeholders and institutions.
- **Governance:** States should consider that addressing marine plastic pollution is not a local circumscribed issue, but requires understanding the different uses, activities and challenges faced not only in coastal and marine environments, but also rivers, lakes, aquifers and wetlands where plastic is generated, managed and discarded.
- **Institutional capacities and monitoring:** A complex challenge such as marine plastic pollution can only be addressed if it is well understood, for which States require specialised institutions in charge of this, with adequate financial and technical capacities to monitor and provide best strategies, plans and actions to address this challenge.



Recommendations

Below is a set of implementation measures geared towards the integration of S2S in policy and legislation to address marine plastic pollution.

1. Mainstream S2S principles in international and regional agreements

- Promote the integration of governance arrangements to address plastic pollution in basin agreements, regional seas conventions and trade arrangements.
- Implement international legal instruments related to marine pollution (e.g., MARPOL, London Dumping Convention, Basel Convention).
- Promote the harmonization of policies, standards, and monitoring methods for plastic pollution control.

2. Promote legal and policy coherence across the water, land and marine sectors

- Review and align existing legislation on water quality, water quantity, fisheries, waste management and marine protection to eliminate gaps, overlaps, and silos.
- Incorporate plastic pollution prevention into national water management and climate change adaptation strategies.
- Ensure that policy and legislation relating to land-use planning ponders upon downstream impacts on coastal and marine ecosystems.

3. Develop integrated policies to link the land with the sea

- Foster national plastic pollution strategies that explicitly integrates upstream (water & land-based) and downstream (marine) policies.
- Provide for cross-sectoral coordination between ministries and agencies responsible for the environment, agriculture, industry, urban development, waste management, and ocean affairs.
- Ensure that local and regional plans are aligned with national goals through harmonized guidelines and reporting requirements.

4. Strengthen institutional arrangements for intersectoral and multi-level coordination

- Establish/strengthen inter-ministerial task forces or similar arrangements to coordinate plastic pollution across multiple sectors and levels.
- Define clear roles and responsibilities among national, regional, and local authorities to avoid institutional gaps/overlaps.
- Provide institutional support to RBOs and coastal zone management agencies to coordinate S2S governance approaches.

5. Design legal mandates for preventive action across the entire plastic lifecycle

- Develop legislation that targets each stage of the plastic lifecycle.
- Introduce legal provisions to ban or restrict certain types of plastic (e.g. single-use plastics, microplastics, etc.).
- Introduce legal provisions for data collection at local, national, and transboundary levels, including sources, flows, and impacts.

6. Foster stakeholder engagement through inclusive governance processes

- Institutionalize stakeholder participation in policy and law making through advisory groups (or similar ones), consultations, and partnerships.
- Involve IPs, local communities, civil society organisations, and the business sector in the co-development of policies and legal reform.
- Establish legal mechanisms for public participation and access to environmental justice in plastic pollution related matters.

7. Support adaptive governance and legal flexibility

- Encourage the design and implementation of pilot projects and legal innovation within a supportive regulatory framework.
- Incorporate adaptive management clauses into legislation to allow responsive policy and legal reforms as new data and technologies emerge.
- Mandate periodic review of policy and legal frameworks to address gaps, inefficiencies, or unintended impacts.

8. Secure sustainable financing for effective capacity building and governance

- Promote the establishment of dedicated environmental funds or plastic pollution taxes to support implementation and institutional capacity.
- Include plastic pollution priorities in national budget planning processes, and donor-funded programmes.
- Support training and institutional development for enforcement officers, policy makers, and local governments.

9. Integrate ecosystem-based approaches into plastic pollution governance frameworks

- Require all national and subnational plastic pollution strategies to incorporate ecosystem-based management principles recognising the interdependence between land, water, coastal, and marine ecosystems.
- Prioritise the protection and restoration of critical ecosystems (e.g., wetlands, mangroves, coral reefs, riverbanks) as natural barriers and filters against plastic pollution.
- Introduce legal tools (e.g. ecological zoning, buffer zones, corridors, etc.) to guide urban and infrastructure development in ecologically sensitive areas.

10. Promote the integration of plastic pollution impacts in environmental assessments

- Ensure that plastic pollution reduction targets are aligned with National Biodiversity Strategies and Action Plans (NBSAPs).
- Require EIAs and SEAs to explicitly assess the potential impacts of proposed activities, projects and plans on biological diversity from plastic pollution, including indirect and cumulative impacts.
- Review and update biodiversity related policy and legislation to identify plastic waste as a threat to biodiversity, particularly freshwater and marine.

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