G20 Report on Actions Against Marine Plastic Litter

Sixth Information Sharing based on the G20 Implementation Framework

2024

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Disclaimer: The report does not necessarily provide exhaustive documentation of all activities by G20 members, other countries and regions sharing the Osaka Blue Ocean Vision and key international organisations; rather it documents their on-going efforts and best practices at the time when compilation work was conducted between July 2024 and September 2024.

The information included in this report is based on voluntary submissions from the G20 members, other countries and regions sharing the Osaka Blue Ocean Vision, and international organisations / NGOs. For more details on actions, please refer to the direct links in the annexure.

2nd Edition (As of 20 November 2024)

Acknowledgement

This report is the sixth compilation of policies and measures undertaken to tackle marine plastic litter by countries and international organisations across the world. Previous editions have been successfully published over the last five years, with the first report published in October 2019, the second in November 2020, the third in November 2021, and the fourth in November 2022, and the fifth in July 2023. The 2024 report aims to identify the current policy status on tackling marine plastic litter as a global issue, among the G20 countries and regions sharing the Osaka Blue Ocean Vision, and international organisations.

We thank the following G20 members, Invited/ Other Countries and International Organisations for their inputs to the 6th Report (As of 1 November 2024):

G20 Members:

1. Australia
2. Brazil
3. Canada
4. China
5. European Union
6. France
7. Germany
8. Indonesia
9. Italy
10. Japan
11. Mexico
12. Saudi Arabia
13. South Africa
14. The Republic of Korea
15. Türkiye
16. United Kingdom
17. United States

Invited Countries:

1. Myanmar
2. The Netherlands
3. Norway
4. The Philippines
5. Singapore
6. Spain

International Organisations:

1. ERIA – Economic Research Institute for ASEAN and East Asia
2. FAO – Food and Agriculture Organization
3. OECD - Organisation for Economic Co-operation and Development
4. UNEP - United Nations Environment Programme
5. UN-Habitat - United Nations Human Settlements Programme
6. WEF/GPAP – World Economic Forum (GPAP-Global Plastic Action Partnership)

We hope that this report will be helpful to promote policies and measures among the contributing countries and organisations through peer learning from best practices, as well as for the wider international community.

Acronyms and Abbreviations

3Rs	Reduce, Reuse, Recycle
ADB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CE	Circular Economy
CEN/TC	European Committee for Standardizaion / Technical Committee
COBSEA	Coordinating Body on the Seas of East Asia
COVID-19	CoronaVirus Disease of 2019
CSR	Corporate Social Responsibility
DMC (of ADB)	Developing Member Country of Asian Development Bank
EC	European Commission
EPR	Extended Producer Responsibility
EPS	Expanded Polystyrene
ERIA	Economic Research Institute for ASEAN and East Asia
FAO	Food and Agriculture Organization of the United Nations
G20	Group of Twenty
G7	Group of Seven
GEF	Global Environment Facility
GPAP	Global Plastic Action Partnership
HELCOM	Baltic Marine Environment Protection Commission - Helsinki Commission
ILBI	International Legally Binding Instrument
IMO	International Maritime Organization
MARPOL	International Convention for the Prevention of Pollution from Ships
MPL	Marine Plastic Litter
MSFD	Marine Strategy Framework Directive
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PE	Polyethylene
PET	Polyethylene terephthalate
PO	Polyolefin
PRO	Producer Responsibility Organizaitons
PS	Polystyrene
PVC	Polyvinyl chloride
R&D	Research and Development
REACH	European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
SDGs	Sustainable Development Goals
SME	Small and Medium-sized Enterprises
SUP	Single-Use Plastics
UN	United Nations
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

Table of Contents

List of Figures and Tables

List of Figures

List of Tables

Executive Summary

Building on the preceding G20 processes, and based on the G20 Implementation Framework for Actions on Marine Plastic Litter, *the Sixth G20 Report on Action against Marine Plastic Litter* prepared under the leadership of Brazil, the G20 Presidency for 2024, in collaboration with the Ministry of the Environment, Japan provides latest snapshot of countermeasures against MPL reported by the G20 members, invited countries and international organisations on a voluntary basis.

Aiming to promote mutual learning among G20 member countries on countermeasures against marine plastic litter, the report provides comprehensive assessment and synthesis of submitted information including policy framework (Chapter 2), measures (Chapter 3), challenges (Chapter 4) and international cooperation (Chapter 5 and 6). Detailed submissions of the contributing members, countries and organizations are made available online at the official site of the G20 Implementation Framework for Actions on Marine Plastic Litter (www.g20mpl.org) and are accessible from the QR codes listed as Annex to this synthesis report. In addition to the questions that captures specific aspect of actions against marine plastic litter adopted in the previous versions of the report, efforts were made to unpack the details of actions reported in an attempt to gain insights, for instance, highlighting different policy tools and approaches employed.

Preventing and reducing plastic pollution requires coordinated policy interventions across the plastics lifecycle, across boarder, different governance tiers and stakeholders. In fact, countries are increasingly relying on combination of different policy instruments and approaches to address each stages of plastics value chain as illustrated in the Report, although its extent differ among them. A few key findings are presented below:

(1) Policy Framework

- National policy framework for preventing, reducing, improving circularity of plastics and managing them at the end of lifecycle, including national action plans, strategies, laws, regulations are well established in many countries with 21 out of 23 responding countries reported having instituted action plans and strategies, and all countries reported having enacted legislations relevant to MPL, highlighting strong commitment and recognition of these instruments in mitigating the impact of MPL.
- Countries are also instituting indicators and targets to monitor the state of plastics leakage to the environment and to track the progress of countermeasures against MPL. Indicators such as microplastics in beach/coastline and biota (leakage), plastic use and recovery/recycle (plastic flow), SUP ban/reduction/elimination and ALDFG removal/recovery/recycle (interventions) are among the most well monitored types of indicators and in many instances of quantitative and time-bound targets established. However, gaps still exist among countries and regions on the extent to which such.
- Technical standards, guidelines, and methodologies also play instrumental role in ensuring consistency in data collection and reporting, as well as standardizing countermeasures on how plastic products are manufactured, managed before/post-consumer stages. Eighteen out of 23 countries reported having guideline(s) relevant to MPL, of which 11, eight and seven were categorised into *leakage monitoring*, *Production/manufacturing*, and *waste management/recycling* respectively based on the topic of focus of the reported tools.

(2) Measures

- Countries are increasingly aware of the need for comprehensive lifecycle approach to address MPL issue and are in the process of introducing or implementing interventions at different stages of plastic value chain, although on a varying degree.

- Governments are employing a wide variety of policy instrument. Reported actions ranged from legislative initiative, development of guidelines and standards to guide subnational governments and/or value chain actors, Extended Producer Responsibility (EPR) schemes, to green procurement aiming to create market for products based on secondary materials and funds for supporting actions by diverse non-government actors.
- In terms of Measures across Value Chain, the most widely implemented actions include those for reducing SUP through regulations and voluntary measures (21 out of 23 countries), improving waste management and recycling systems (22 countries), and conducting clean-up activities (all 23 countries), while those for restricting microplastics in products (13 countries) and installing capturing equipment for preventing leakage of macroplastics to aquatic environment (14 countries) were less reported.
- Slightly more G20 countries reported actions on ALDFG than last year, with many responding countries reporting gear retrieval and beach clean-ups, while some shared mandatory fishing gear loss reporting. Preventive measures including introduction of standards for circular design of fishing gear and conditional license scheme to promote sustainable fisheries are also reported.

(3) Science

- Seventeen countries reported conducting monitoring/estimation/scientific research on leakage of plastic/microplastics to the natural environment and/or their flow on ocean surface, with 11 of them conducting on a regular basis. Life Cycle Assessment and Material Flow Analysis of plastics are less with ten and nine countries respectively.

(4) Challenges

- Recycling system improvement was identified as a challenge the most with 15 countries, followed by data collection on waste and marine plastic litter by 12 and 14 countries respectively. Lack of local capacity, financial incentives for waste treatment and technology development were mentioned by nine, eight and eight countries respectively.
- More detailed responses heighted the importance of ensuring market for recycled materials, deployment of waste management service, technology, and infrastructure at scale to meet demand, consistent methodologies /standardised metrics to measure recycling system performance, strengthening data collection and reporting system, and optimising economic incentives to direct behaviors and investments towards sustainability.

(5) International Cooperation

- Nineteen countries are engaged in multilateral international cooperation through international organizations and/or multilateral groups. Examples included participation to and national implementation of Multilateral Environmental Agreements (MEAs), harmonization of data collection and reporting methodologies such (e.g. microplastics and ALDFG), engaging in policy discussions on MPL through global/regional groups, engagement to the on-going plastics treaty negotiation through INC, and financing multilateral development institutions and their projects which support comprehensive/ topic-specific assistance on MPL.
- Thirteen countries are also engaged in bilateral cooperation with regional focus on Southeast Asia (six), Africa (seven), South Asia (six), Latin America & Caribbean (seven).
- Six International Organizations also provided responses on their assistance to countries on MPL, with many reported a global focus, targeting national government, although regional and thematic focus are diverse.

1 Introduction

Background

The global annual production of plastics has doubled in the past decade from 234 million tonnes (Mt) in 2000 to 460 Mt in 2019[1]. The increasing clarity of the linkage between plastic and human and environmental health – including negative impacts on species and climate through its lifecycle –, as well as the urgent need to transform our current take-make-waste plastic economy is widely shared[2].

During the resumed Fifth Session of the United Nations Environmental Assembly (UNEA-5.2) organised in February through March 2022, member countries agreed on adopting a historic resolution titled "End plastic pollution: towards an international legally binding instrument" (UNEA 5/14), initiating political process under Intergovernmental Negotiating Committee (INC) to develop an international legally binding instrument (ILBI) on plastic pollution, including in the marine environment. By September 2024, four sessions[3] were organised. With the fifth session (INC-5) scheduled to take place in Busan, Republic of Korea for 25 November to 1 December 2024, countries are tasked to agree on an effective instrument by the end of 2024.

1 OECD (2022), Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options, OECD Publishing, Paris, https://doi.org/10.1787/de747aef-en.

2 UNEP (2024), Plastic pollution science (updated for the fourth session of the intergovernmental negotiating committee (UNEP/PP/INC.4/INF/1), Intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment Fourth session, Ottawa, 23–29 April, 2023, https://wedocs.unep.org/bitstream/handle/20.500.11822/45368/PlasticPollutionScience.pdf

3 The first session of the INC (INC-1) took place in Punta del Este, Uruguay from 28 November to 2 December 2022, followed by a second session (INC-2) from 29 May to 2 June 2023 in Paris, France. The third session (INC-3) marked the process' midway point from 13 to 19 November 2023 in Nairobi, Kenya, followed by the fourth session (INC-4) from 23 to 29 April 2024 in Ottawa, Canada. For the latest developments, access https://www.unep.org/inc-plastic-pollution

Prior to the ongoing INC process, the global policy discussions over marine plastic litter gradually evolved over the past years through different fora. For instance, during G7 El Mau Summit in 2015, leaders for the first time acknowledged the global ecosystems, and potentially human health challenges posed by marine litter[4]. In September 2015, Sustainable Development Goals (SDGs) adopted at the United Nations Summit contained a target to "*by 2025, prevent and significantly reduce marine pollution of all kind, in particular from land-based activities, including marine debris and nutrient pollution*", under Goal 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".

G20 and Marine Plastic Litter

In this context, G20 also played an instrumental role in pushing MPL forward to a global policy discussion and accelerate countermeasures. During the G20 Hamburg Summit in 2017, leaders agreed on The G20 Marine Litter Action Plan to prevent and reduce marine litter. In 2019, at the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth, Karuizawa, the "G20 Implementation Framework for Actions on Marine Plastic Litter" was established, and endorsed by the G20 Leaders at the subsequent G20 Osaka Summit. During the Osaka Summit, leaders also shared Osaka Blue Ocean Vision which aims to reduce additional pollution by marine plastic litter to zero by 2050 through a comprehensive life-cycle approach, which acted a stepping stone for the MPL issue to be discussed as a global environmental policy agenda.

The 6th Report

G20 Report on Actions Against Marine Plastic Litter is a product of G20 Implementation Framework which facilitates effective implementation of the G20 Action Plan, and aimed at promoting information exchange and mutual learning among the G20 members and invited countries on actions against MPL based on voluntary reporting of own actions by the contributing countries. Since its initial publication in 2019, the report has been acted as a unique source of information for G20 members and non-members to understand the latest trend of countermeasures against MPL.

The 6th G20 Report on Actions against Marine Plastic Litter was prepared and published in October 2024 under the leadership of the Brazil G20 Presidency for 2024, with the support of the Ministry of the Environment, Government of Japan (MoEJ) and knowledge partner the Institute for Global Environmental Strategies (IGES), which collectively formed a Joint Drafting Team. The report compiles the results of two surveys conducted in July 2024: one targeting countries and another focusing on international organisations and NGOs active in the field of MPL issue.

Methodology

Survey templates (See Annex II) were co-developed by the Joint Drafting Team and distributed by 2024 G20 Brazilian Presidency to the members of G20 ECSWG, invited countries and organisations in July 2024. This report synthesises submissions from the 23 countries (17 G20 members and six invited countries) and six international organisations received by the Secretariat of Joint Drafting Team by 23 August 2024.

4 https://sustainabledevelopment.un.org/content/documents/7320LEADERS%20STATEMENT_FINAL_CLEAN.pdf

Retrieved inputs were coded and compiled based on what respondents provided on the template. However, for the questions where respondents selected none of the presented multiple responses but provided useful descriptive responses, selection of multiple responses were complimented by the drafting team based on their best possible judgment to interpret them. Efforts were also made to categorise responses for further analyses where possible, including re-categorising responses from one question to another that could better inform other inquiries.[5]

The complete information on each country as submitted is made available online at the website of G20 Implementation Framework for Actions against Marine Plastic Litter (https://g20mpl.org/) and can be accessed from the QR codes listed in Annex I of this report.

With the ongoing political process to develop ILBI on plastics expected to complete soon, it is our hope that this key publication will serve as an information source on actions by countries, and assist countries and organisations in continuously improving and accelerating actions against marine plastic litter through collaboration at local, national, regional and global levels.

5 Detailed description of actions reported by countries varied with some illustrating generally and comprehensively while others referring to specific policy tools and/or approaches. The additional categorization and analysis of policy tools / approaches presented in the report are intended to derive new insights from such unstructured responses. As a result, some of the reported country actions that are difficult to categorize are left unmarked in the coding process.However, this does not necessarily mean that the country do not implement such actions.

Section A:
Initiatives by Countries

2 Policy Framework for Marine Plastic Litter (MPL)

Countries around the globe have increasingly recognised the critical importance of developing comprehensive action plans and strategies at national, regional, and global levels to address the issue of plastic litter disposal and reduce marine plastic litter (MPL). According to responses from 23 countries, a substantial 91% have already implemented national action plans or strategies specifically targeting MPL. This high level of commitment reflects a global consensus on the need for structured and strategic approaches to tackle marine plastic pollution.

Moreover, all participating countries have enacted legislation related to MPL, demonstrating a strong legal framework supporting these efforts. This universal implementation of MPL-related laws highlights the widespread recognition of the importance of regulatory measures in mitigating the environmental impact of plastic litter.

In addition to national plans and legislation, 78% of the countries have established MPL-specific indicators and guidelines. These indicators and guidelines are essential tools for monitoring progress, measuring the effectiveness of interventions, and ensuring accountability. However, the development and standardisation of these indicators remain an ongoing challenge for some nations, as indicated by the varied status in the implementation of technical standards and data collection frameworks.

Figure 1 illustrates these findings, showcasing the significant strides made by countries in addressing MPL through national action plans, legislation, and the establishment of specific indicators and guidelines. Despite these advances, there remains a need for further development and harmonisation of technical standards and methodologies to ensure consistent and effective management of MPL across borders. This ongoing effort is crucial for fostering global cooperation and achieving a significant reduction in marine plastic pollution.

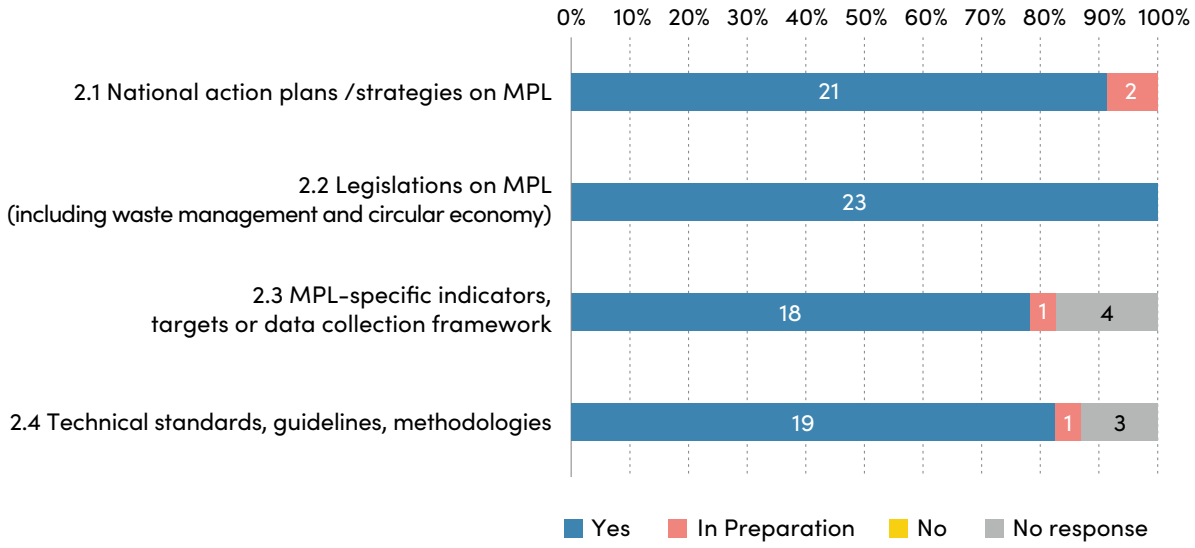


Figure 1. **Status of prevalence policy framework for MPL in countries**

2.1 National Action Plans

There is a growing consensus that the issue of marine litter, particularly marine plastic litter (MPL), must be addressed both at the national level and through coordinated global cooperation. Effective solutions hinge on the implementation of appropriate legislation and/or comprehensive action plans. Countries are approaching this challenge in two primary ways:

- Specific Marine Litter Management Measures: These targeted strategies are designed to directly address marine litter, focusing on reducing marine debris, enhancing clean-up efforts, and preventing further pollution. Such measures often include specific actions tailored to the local environmental context and the unique challenges faced by each country.
- General Plastic Waste Management/Plastic Pollution Control Policies: These broader policies encompass the entire lifecycle of plastics, from production to disposal. They aim to reduce overall plastic waste generation, promote recycling and circular economy practices, and mitigate the environmental impacts of plastic pollution on land and in marine environments.

Most countries are adopting a combination of these approaches to tackle marine plastic pollution. The integration of general plastic waste management strategies with specific marine litter management measures presents a comprehensive and coordinated approach, enhancing the effectiveness of national and global efforts. Coordinated action across these two domains could be highly valuable, fostering synergies that maximise impact and address the problem at its root.

This section outlines the national action plans currently being implemented by various countries, as detailed in Table 1. These plans demonstrate a range of strategies, from comprehensive national policies such as Australia's National Waste Policy and Canada's Action Plan on Zero Plastic Waste, to more focused marine litter initiatives like Indonesia's National Action Plan for Marine Plastic Litter.

Additionally, innovative approaches by countries like France and Germany highlight the integration of circular economy principles into their national strategies. Regional cooperation, exemplified by the European Union's directives, plays a crucial role in addressing marine litter, underscoring the importance of harmonised policies across borders.

Long-term planning and visionary goals, such as those seen in Saudi Arabia's Vision 2030 and the Republic of Korea's Framework Plan for Marine Debris Management, emphasise the need to embed environmental sustainability within broader national development agendas.

In summary, the strategic combination of specific marine litter management measures with broader plastic waste management policies, underpinned by strong legislation and international collaboration, is essential to effectively combatting marine plastic litter. The country-specific action plans outlined in Table 1 illustrate the diverse and decisive steps being taken worldwide to protect marine environments and reduce the pervasive impact of plastic pollution on a global scale.

Table 1: Summary of national action plans by countries

Country	National Action Plans shared by countries
G20 Members	
Australia	• National Waste Policy (2018) • National Waste Policy Action Plan (2019) • National Circular Economy Framework • National Plan of Action for the UN Global Framework on Chemicals
Brazil	• National Plan to Combat Marine Litter (2019) *In preparation* • Plastic-free Ocean National Strategy
Canada	• Canada-wide Action Plan on Zero Plastic Waste (Phase 1, 2019 and Phase 2, 2020) • Canada-wide Strategy on Zero Plastic Waste (2018) *In preparation* • Canadian Ghost Gear Action Plan.
China	• Opinions on Further Strengthening Plastic Pollution Control (2020) • Plastic Pollution Control Action Plan (2021-2025)
European Union	• EU Strategy for Plastics in a Circular Economy (2018) • The Single-Use Plastic Directive (2019), targeting the top 10 single-use plastic products most often found on Europe's beaches and seas as well as fishing gear containing plastics and the Port Reception Facilities Directive (2019) • The EU's new approach for a sustainable blue economy (2021) • The EU's International Ocean Governance Agenda (2022) *In preparation* • Circular Economy Act
France	• Action Plan for the Marine Environment (Marine Strategy Framework Directive – MSFD) • Biodiversity Plan • National Roadmap against Marine Litter • National Roadmap for a Circular Economy (CE) • National "3R" strategy on single use plastic packaging

Country	National Action Plans shared by countries
Germany	• German Resource Efficiency Program III (ProgRess III, 2020) • Programme of Measures (PoM) (2020) • Action Plan "Nein zur Wegwerfgesellschaft" (2018)
Indonesia	• National Action Plan for Marine Plastic Litter (2018)
Japan	• National Action Plan for Marine Plastic Litter (2019) • Basic policy for comprehensively and effectively promoting coastal debris countermeasures (2019) • Resource Circulation Strategy for Plastics (2019) • The 5th Fundamental Plan for Establishing a Sound Material-Cycle Society (2024) • The Plastic Resource Circulation Act: Basic Policy (2021) • Roadmap for Bioplastics Introduction (2021)
Italy	• Implementation of the Directive 2008/56/EC on Marine Litter • The Regional Plan on the Marine Litter Management in the Mediterranean in the Framework of Article 15 on the Land Based Sources Protocol
Republic of Korea	• The 1st Framework Plan for Management of Marine Debris and Contaminated Marine Sediment (2021-2030)
Mexico	• National Action Plan for Marine Debris and Plastic Pollution • National Policy for Seas and Coasts
Saudi Arabia	• Saudi Arabia Vision 2030 • National Environmental Strategy • National Center for Waste Management • Strategic Targets by 2035 to support transition to a Circular Economy
South Africa	• National Waste Management Strategy (2020)
Türkiye	• 12th National Development Plan of the Republic of Türkiye (2024-2028)
United Kingdom	• UK Marine Strategy • UK Plastics Pact (UKPP) (Voluntary) • Environmental Improvement Plan 2023 (EIP23) • The Resources and Waste Strategy for England (2018) • Litter Strategy for England (2017) • Waste Prevention Programme for England (2023) • Marine Litter Strategy (Scotland) • National Litter and Flytipping Strategy (Scotland) • Circular Economy Bill (Scotland) • Scotland: making things last – a circular economy strategy • The Northern Ireland Waste Prevention Programme • Northern Ireland Marine Litter Strategy • Wales Marine Litter Action Plan 2020-23 • Wales Waste Prevention Programme – 2013-2050
United States of America	• Strategy to improve post-consumer materials management and infrastructure for the purpose of reducing plastic waste and other post-consumer materials in waterways and oceans, Save Our Seas 2.0 Act, Title 3, Section 301 • Further, through NOAA's Marine Debris Program, the U.S. has developed sixteen sub-national marine debris action plans that identify and prioritise activities to reduce marine debris and its impacts, coordinate local level implementation, and help better understand the scope and scale of the issue in the U.S. coastal and marine environment.

Country	National Action Plans shared by countries
Invited / Other Countries	
Myanmar	*In preparation* • National Plastic Action Plan in Myanmar
Norway	• Norwegian Plastics Strategy (in Norwegian: Noregs plaststrategi) (2021) • A national strategy for a Green, Circular Economy was launched in 2021
Netherlands	• European Marine Strategy Framework Directive • Dutch Programm of Measures – Specific Measures to Reduce Marine Litter (2022-2027) • OSPAR Marine Litter Regional Action Plan • Various European policies focused on reducing Marine Litter e.g. implementation of the Single Use Plastics and fishing gear • Directive and EU Port Reception Facilities Directive • National policies focused on prevention of litter (macro- and micro plastics) • National Circular Economy Programme (2023-2030)
Philippines	• National Plan of Action for the Prevention, Reduction and Management of Marine Litter (NPOA-ML) • Philippine Action Plan for Sustainable Consumption and Production (PAP4SCP) (2023)
Singapore	• National Action Strategy for Marine Litter (NASML)
Spain	• Marine Strategies Program of Measures on Marine Litter (2022-2027)

2.2 Legal Framework

Several countries have integrated the issue of marine litter into their broader environmental legislation, encompassing solid waste management, plastic waste management, and other related waste laws. These legal frameworks are designed to address the multifaceted challenges of marine plastic litter by regulating the lifecycle of plastics, from production and consumption to disposal and recycling.

This section provides an overview of the legal frameworks currently in place at the national level, as detailed in Table 2. These frameworks include both general environmental protection laws and specific regulations targeting marine litter. Countries like Japan, Australia and Canada have enacted comprehensive waste management laws, such as Japan's Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging (1995) and Australia's Recycling and Waste Reduction Act 2020 and Canada's Canadian Environmental Protection Act (1999), which include provisions directly addressing plastic pollution.

In addition, many nations have introduced targeted regulations to tackle the most problematic forms of plastic pollution. For instance, the European Union's Single-Use Plastic Directive and China's Circular Economy Promotion Law focus on reducing single-use plastics and promoting sustainable practices. These laws are crucial for minimising the environmental impact of plastics, particularly in marine environments.

Moreover, countries are increasingly adopting legislation that integrates circular economy principles. This is evident in the EU's directives on circular design and Germany's Packaging Act, which aim to promote recycling, reuse, and the reduction of plastic waste. These laws reflect a growing recognition of the need to transition from a linear to a circular economy to effectively address the issue of marine litter.

Specific marine-focused legal measures, such as the United Kingdom's Marine Strategy Regulations and the United States' U.S. Marine Debris Act, demonstrate the importance of protecting marine ecosystems through targeted legislation. These laws are designed to prevent marine pollution, enhance clean-up efforts, and in some cases, ensure the sustainable management of marine resources.

Additionally, some countries integrate national laws with international agreements and regional directives, which highlights the importance of global cooperation in combating marine litter. The alignment of some national frameworks with relevant international conventions, such as the London Convention and the OSPAR Convention, underscores the shared objectives of nations to address this global issue.

In summary, the legal frameworks described in this section illustrate the diverse and coordinated efforts being undertaken by countries to combat marine plastic litter. By incorporating marine litter into broader environmental legislation and adopting specific regulations, these frameworks play a critical role in reducing plastic pollution, protecting marine environments, and promoting sustainable waste management practices.

Table 2: Summary of legal frameworks by countries

Country	List of legal frameworks
G20 Members	
Australia	• Recycling and Waste Reduction Act 2020 (RAWR Act) • Recycling and Waste Reduction (Export—Waste Plastic) Rules 2021 (Waste Plastic Rules) • National Environment Protection (Used Packaging Materials) Measure 2011
Brazil	• Environment National Policy Law – Federal Law No. 6,938/1981. • National Solid Waste Management Policy – Federal Law No. 12,305/2010 • Federal Law No. 14,026/2020 • Environmental Crimes Law – Federal Law No. 9,605/2008 • Decree No. 10,936/2022, regulates the National Solid Waste Management Policy – (Law No. 12,305/2010) • Decree No. 11,043/2022, approves the National Plan to Solid Waste Management. • Decree No. 11,413/2023, Establishes the Reverse Logistics Recycling Credit Certificate • Decree No. 11,414/2023, Establishes the Wastepickers Program for Popular Recycling and the Interministerial Committee for the Socioeconomic Inclusion of Wastepickers of Reusable and Recyclable Materials • National Environmental Council (Conama) Resolution No. 454/2012 • Normative Instruction MPA-MMA No. 12/2012, requires the identification of marine gillnet and trammel net fisheries • Decree No. 12,082/2024, Establishes the National Strategy for Circular Economy • Decree No. 12,106, Regulates the incentive for the recycling industry provided for in Law No. 14,260, of December 8, 2021 *In preparation* • Decree establishing reverse logistics for plastic packaging

Country	List of legal frameworks
Canada	• Canadian Environmental Protection Act (1999) – Microbeads in Toiletries Regulations (2017) – Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations (2021) – Single-use Plastics Prohibition Regulations (2022) – Federal Plastics Registry (2024) • Fisheries Act • Species at Risk Act (2002) • Canada Shipping Act (2001) • Canada Water Act • Hazardous Products Act • Canada Consumer Product Safety Act
China	• Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste (2020 Amendment) • Circular Economy Promotion Law of the People's Republic of China (2018 Amendment) • Marine Environmental Protection Law of the People's Republic of China (2023 Amendment)
European Union	• Legislation on Waste and Marine Strategy Framework Directive (2008) • The Directive on Port Reception Facilities for the delivery of waste from ships (2019) • The Single-Use Plastic Directive focusing on most frequently found marine litter (including fishing gear containing plastic) (2019) • The European Committee for Standardisation as regards circular design of fishing gear (2021) • The six harmonised standards for a circular design of fishing gear to prepare for its reuse, repair and recycling will be delivered by the end of November 2024 • A Zero Pollution Action Plan in May 2021 *In preparation* • Proposal for a Regulation on Plastic Pellets Losses • Packaging and Packaging Waste Regulation (PPWR)
France	• The Legislation for Energy Transition for Green Growth (2015) • The Legislation for Reclaiming Biodiversity, Nature, and Landscapes Law (2016) • The Legislation for Trade Relations Balance in the Agricultural Sector and Healthy and Sustainable Diet (EGAlim, 2018) • The Legislation against Waste and for a Circular Economy (2020) • "3R" Decree for Reduction, Reuse and Recycling of single use plastic packaging for 2021-2025 period • National provisions for companies that produce, handle or store plastic pellets to prevent their release into the environment
Germany	• Kreislaufwirtschaftsgesetz (KrWG) • Wasserhaushaltsgesetz (WHG) • Hohe-See-Einbringungsgesetz (HSEG) • Verpackungsgesetz (VerpackG), (Packaging Act)
Indonesia	• Presidential Regulation Number 83/2018 concerning Marine Debris Management
Italy	• National legislative measure to reduce the improper discarding of small and micro waste (receipts, chewing gum, tissues, cigarette butts, etc.) in the environment (2015) • National legislative measure: ban on light and ultralight shopping plastic bags that are not biodegradable and compostable, 2018; National legislative measure: ban on microplastics in soaps, creams, toothpastes (2018) • National legislative measure: ban on plastic cotton buds' sticks, 2019; Italy joined the European Plastic Pact (EPP) (2020) Transposition of DIRECTIVE 2019/904/EC on the reduction of the impact of certain plastic products on the environment. D.Lgs 196/2021

Country	List of legal frameworks
	• Transposition of DIRECTIVE 2019/883/EC on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC. D.Lgs 197/2021 • Updated Program of measures according to Article 13 of the MSFD, 2021 • Update of D.Lgs 197/2021 on port reception facilities for the delivery of waste from ships (upcoming) • Legislative Decree 3 April 2006, n. 152, also known as the "Environmental Code" (Codice dell'Ambiente) • National Strategy for Circular Economy, 2022 • Salvamare Law May 2022, n. 60: defines the methods of passively fished waste; regulates cleaning campaigns aimed at voluntary collection; promotes circular economy and the criteria and methods by which passively fished waste cease to be classified as waste; regulates the management of stranded plant biomass and the measures for the collection of floating waste in rivers; defines the monitoring and control activities of the marine environment; regulates information and awareness campaigns for the achievement of the purposes of this law, including in schools • Decree 27 October 2023, Definition of the minimum national annual collection rate of discarded fishing gear containing plastic for recycling
Japan	• Act on Waste Management and Public Cleaning (1970, formulated in 2022) • Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging (1995) • Act on Promotion of Resource Circulation for Plastics (2021) • Law Concerning Special Measures for Conservation of the Environment of the Seto Inland Sea (1973, 2022) • Act Concerning Sophistication of Recycling Business, etc. to Promote Resource Circulation (2024)
Republic of Korea	• Management Act on Marine Litter and Contaminated Sediment (2019) • Act on Promotion of Transition to Circular Economy and Society (2016)
Mexico	• General Law for the Prevention and Integral Management of Waste (LGPGIR) published October 2003. • Prevention and sound waste management Law and Regulation
Saudi Arabia	• Waste Management Law and Executive Waste Management Regulations • Saudi Arabia Active Engagement in International Conventions and Treaties
South Africa	• National Environmental Management Waste Act 2008 • Extended Producer Responsibility Regulations 2021 • Plastic Bag Regulations 2003 and Amendments 2021 • South African National Standard (SANS) 695 (Compulsory Specification for Plastic Carrier Bags to improve recyclability of plastic bags) • Plastics Master Plan, which is intended to serve as South Africa's national action plan to tackle plastic pollution and achieve sustainable production and consumption of plastics
Türkiye	• Circular on the Preparation and Implementation of Marine Litter Provincial Action Plans by Law on Zero Waste (2019) • By-Law on Zero Waste (2019) • Communiqué No. 5/1 on the Regulation of Fishing for Commercial Purposes (2020) • Action Plan on Land Based Pollution

Country	List of legal frameworks
United Kingdom	• The Marine Strategy Regulations 2010 • The Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020 • The Merchant Shipping and Fishing Vessels (Port Waste Reception Facilities) 2003 (as amended) • IMO Action Plan for Marine Litter from Ships 2018 • Plastic Packaging Tax (2022) • London Convention 1972 (Convention on the Prevention of Maritime Pollution by Dumping of Wastes and Other Matter) and 1996 Protocol; and the OSPAR (Oslo and Paris) Convention 1999 • The Environmental Protection Act 1990 and Litter (Northern Ireland) Order 1994 • Landfill tax 1996 (Scottish Landfill tax and Landfill Disposal Tax (Wales)) • Responsible Fishing Vessel Standard (RFVS) (Voluntary Measures) • Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries (CCRF) (Voluntary Measures)
United States of America	• Marine Debris Act (2018) • Clean Water Act (1972) • Infrastructure Investment and Jobs Act (2021) • Resource Conservation and Recovery Act (1976) • Save Our Seas 2.0 Act (2020) • Microbead-Free Waters Act; Toxic Substances Control Act (2015) • Rivers and Harbours Appropriations Act (1899) • Toxic Substances Control Act (1976) • Pollution Prevention Act (1990)
Invited / Other Countries	
Myanmar	• Environmental Conservation Law (2012) • Environmental Conservation Rules (2014) • Myanmar National Waste management Strategy and Master Plan (2018-2030)
Netherlands	• The EU Marine Strategy Framework Directive (Directive 2008/56/EC) – adopted in Dutch Water act. • EU Waste Framework Directive on the reduction of the impact of certain plastic products on the environment (Directive 2019/904) • EU packaging and packaging waste directive, (Directive 94/62/EC), currently under revision and changed into Packaging and Packaging Waste Regulation. • Implemented in the Dutch packaging decree (last revised in 2021), both new recycling and reuse targets and the new deposit system for plastic bottles and beverage cans. • Implemented in the Dutch single use plastics decree (2021)
Norway	• The Pollution Control Act • The Marine Resources Act • The Product Control Act • The Harbour and Fairways Act • The regulations relating to pollution control, chapter 32A • Waste Regulation • Ship Safety and Security Act • Act on Sustainable Products and Value Chains *In preparation* • The Product Regulations chapter 2b

Country	List of legal frameworks
Philippines	• EPR Act of 2022 (RA No. 11898) • Ecological Solid Waste Management Act of 2000 (RA 9003) • Marine Pollution Decree of 1976 (Presidential Decree 979) • Philippine Clean Water Act of 2004 (RA 9275)
Singapore	• Environmental Protection and Management Act (EPMA) • Environmental Public Health Act (EPHA) and subsidiary legislation; Sewerage and Drainage Act • Sewerage and Drainage (Trade Effluent) Regulations; Prevention of Pollution of the Sea Act (PPSA) • Resource Sustainability Act (RSA)
Spain	• Law 41/2010, 29th December, on protection of the marine environment • Royal Decree on the Management of Fishing Gear Containing Plastic (in preparation)

2.3 Indicators and/or Targets

Specific indicators to measure the flow and volume of marine plastic litter (MPL) are being developed, with several countries actively formulating dedicated metrics to assess the extent and quantity of MPL. However, obtaining accurate and comprehensive data remains a significant challenge due to the complexity and scale of plastic pollution. Integrating indicators for both plastic pollution and marine plastic pollution could provide a more holistic understanding of the stocks and flows of marine litter, offering valuable insights into the sources, distribution, and impacts of MPL.

To enhance the effectiveness of these efforts, establishing standardised indicators and measurement methodologies is crucial. Such standardisation would not only streamline the monitoring and reporting processes but also facilitate the comparison of data across borders, aiding in the management of transboundary MPL. Harmonised indicators would enable countries to track progress more effectively and ensure that their efforts align with global initiatives to combat plastic pollution.

This section presents the MPL-specific indicators that are currently being implemented in various countries, as detailed in Table 3. These indicators reflect a range of approaches, from monitoring plastic flows and recycling rates to setting specific targets for the reduction of single-use plastics and marine litter. The indicators also highlight the importance of both national and international cooperation in tackling the global challenge of marine plastic litter, as countries work to develop effective monitoring systems and contribute to a collective understanding of MPL dynamics.

By continuously refining these indicators and adopting standardised methodologies, countries can improve their capacity to manage marine plastic pollution and contribute to the broader global effort to protect marine environments from the pervasive impacts of plastic waste.

Table 3: **Summary of MPL indicators/targets by countries**

Country	List of indicators/targets
G20 Members	
Australia	• Data collection framework: The annual Australian Plastic Flows and Fates reporting shows Australia's plastic consumption, flow, recovery, and recycling from 2000 to 2021 • The National Packaging Targets have driven systemic change to how packaging is designed, collected, recovered, and reprocessed, and are increasing recovery rates. National Packaging Target 2 is focused on achieving 70% of plastic packaging being recycled or composted by 2025 • The Government supports the Australasian Recycling Label (ARL) as a world-leading educational tool to help households recycle correctly, including by investing $5 million to assist 20,000 small to medium enterprises improve packaging sustainability and labelling by adopting the ARL to increase plastic recycling rates • Phasing out problematic and unnecessary plastics by 2025
Canada	• Extend the life of products and divert at least 75% of plastic waste from federal operations by 2030 • Physical Flow Account for Plastic Material (PFAPM) annual data collection on the flow of plastic through the Canadian economy, measured in tonnes and broken down by product category, resin type, and province or territory. As of 2024, the PFAPM includes time series data from 2012 to 2020 • Federal Plastics Registry data collection on identity, source and weight in kilogram of plastics chemically or mechanically recycled in the product categories packaging, single-use and disposable products, construction, transportation, electronics and electrical equipment, tires, textiles and apparel, fishing and aquaculture equipment, and agriculture and horticulture equipment • Percentage of wild capture commercial fisheries whose licences are revised for ALDFG ("ghost gear") best practices based on gear type • Number of commercial fisheries in which in-season ghost gear retrieval and alternatives to plastic gear tags are piloted
China	• By 2022, the proportion of resourceful energy utilization of plastic waste will be substantially increased • By 2025, management systems for the production, circulation, consumption and recycling and disposal of plastic products will have been basically established, and the efficiency of plastic waste collection and transfer will have been greatly improved; the recovery rate of agricultural films will reach 85% • By 2020, take the lead in banning and restricting the production, sale and use of some plastic products in some areas and some fields; ban the production and sale of disposable foamed plastic tableware and disposable plastic swabs; and ban the production of daily chemical products containing plastic microbeads • By 2022, the consumption of disposable plastic products will be significantly reduced; the sale of daily chemical products containing plastic microbeads shall be prohibited; and a number of replicable and scalable models of plastic reduction and green logistics will be formed in areas with prominent plastic pollution problems and in emerging areas such as e-commerce, express delivery and takeaway • By 2025, the intensity of consumption of non-biodegradable disposable plastic tableware in the catering takeaway sector in cities at the prefecture level or above will be reduced by 30%, and all hotels and guest houses nationwide will no longer actively provide disposable plastic products • By 2022, alternative products will be promoted; the use of non-biodegradable plastic bags will be banned in shopping malls, supermarkets and other places in the built-up areas of cities at or above the prefecture level and in the built-up areas of counties in coastal areas, and the use of non-biodegradable plastic bags will be regulated and restricted in the marketplaces; the use of non-degradable disposable plastic tableware is prohibited in catering and dine-in services in the built-up areas of counties and scenic spots

Country	List of indicators/targets
	• By the end of 2025, the use of non-biodegradable plastic bags will be prohibited in the marketplaces of the above areas; the intensity of consumption of non-degradable disposable plastic tableware in the field of food and beverage takeaway in cities at or above the prefecture level will be reduced by 30%; the use of non-biodegradable plastic bags, plastic tapes, disposable plastic woven bags, etc., will be prohibited in postal express outlets nationwide, basic e-commerce express shipments will be no longer packaged twice, and the scale of application of recyclable express packaging will reach 10 million units • By 2025, the incineration treatment capacity of urban domestic waste nationwide will reach about 800,000 tonne/day, the amount of plastic waste directly land-filled will be significantly reduced, and plastic pollution will be effectively controlled; the amount of ground film residue nationwide will achieve zero growth • Action Plan for Marine Litter Cleanup in Coastal Cities (2024-2027) promoting coastal cities and counties to establish a long-term mechanism for cleaning up marine plastic litter, and keep key coastal areas free of obvious plastic waste • Regulate the recycling and disposal of used fishing nets and gear
European Union	• In the new Packaging and Packaging Waste Regulation, Member States shall incentivize restaurants to serve their customers tap water, where available, free of charge • A target threshold value for beach litter (i.e. 20 litter items/100 m of coastline), has been established in 2020 • The Packaging and Packaging Waste Regulation contains targets requiring Member States to reduce packaging waste by 5% by 2030 with reference to year 2018 as the base-year; the targets gradually increase reaching 15% by 2040 • 77% separate collection target for plastic bottles by 2025 – increasing to 90% by 2029 & incorporating 25% of recycled plastic in PET beverage bottles from 2025, and 30% in all plastic beverage bottles from 2030
France	• 100% recycled plastic by 2025 • 20% reduction target for single-use plastic packaging by 31 December 2025, taking into account that at least 50% of this target must be achieved through the reuse of packaging • A threshold has been defined at the EU level and it sets a target for good environmental status of a maximum of 20 litter items for 100 meters of beaches • OSPAR targets that less than 10% of fulmars should not have more than 0.1g of plastic in their stomachs. Two turtles • OSPAR contracting parties set the aim to reduce single-use plastics (SUP) and marine related items on beaches by 75% by 2030s • 100% of coastal municipalities committed to the national charter "Plastic waste-free beaches for eco-exemplary coastal communities" by 2030
Germany	• Packaging Act requires 63 % (input quota) mechanical recycling of plastic packaging subject to mandatory system participation, in 2022 the target was overfulfilled with a recycling quota of 67.5% • The indicator is defined in terms of median litter abundance per 100 m beach for comparison with the threshold value of less than 20 litter items per 100 m beach • To increase the total number of vessels participating in FFL schemes in the OSPAR maritime area by 100% in 2021, compared to the baseline situation in 2017 • OSPAR long-term target that fewer than 10% of fulmars should have no more than 0.1g of plastic in their stomachs
Indonesia	• To reduce the marine plastic waste leakage by 70% in 2025 • 30% of waste reduction from waste generation by 2025 • 70% of waste managed from waste generation by 2025

Country	List of indicators/targets
Italy	• By 31 December, 2025: 65% by weight relative to all packaging waste; 50% for plastics, 25% for wood, 70% for ferrous metals, 50% for aluminum, 70% for glass, 75% for paper and cardboard • By 31 December, 2030: 70% by weight relative to all packaging waste; 55% for plastics, 30% for wood, 80% for ferrous metals, 60% for aluminum, 75% for glass, 85% for paper and cardboard • Definitions of Environmental Targets pursuant Ministerial Decree of 15 February, 2019, according to the implementation of the Directive 2008/56/EC • The minimum annual national collection rate of plastic-containing fishing gear waste for recycling is set at 15% by weight of the plastic-containing fishing gear placed on the national market during the respective reference years for the biennium 2024 and 2025 • Extended producer responsibility schemes shall ensure separate collection for recycling and compliance with minimum percentages of use of recycled plastic: - by 2025, of a quantity of waste single-use plastic products listed in Part F of the Annex equal to 77 % by weight of such single-use plastic products placed on the market in the reference year; - by 2029, of a quantity of waste single-use plastic products listed in Part F of the Annex equal to 90 % by weight of such single-use plastic products placed on the market in the reference year
Japan	• National Action Plan for Marine Plastic Litter" includes five indicators for monitoring progress: (a) Amount of plastic waste generated, recycled, heat recovered, incinerated without energy recovery, and landfilled. (b) Amount of land-based litter collected, illegal dumping, and scattered waste. (c) Amount of marine litter collected by clean-up activities. (d) Production capacity and amount of consumption of alternative materials such as marine degradable plastics and paper. (e) Increment of plastic waste generated, recycled, heat recovered, incinerated without energy recovery, and landfilled, as a results of international cooperation • Indicators and Targets under Resource Circulation Strategy for Plastics (2019): (a) Cumulative suppression of 25% of single-use plastics by 2030. (b) Reusable/recyclable design by 2025. (c) Reuse/recycle60%of containers and packaging by 2030. (d) Effective use of 100% of used plastics by reuse and recycling etc. by 2035. (e) Double the use of recycled content by 2030. (f) Introduce about 2 million tonnes of bio-based plastics by 2030 • Indicators and Targets under the 5th Fundamental Plan on Establishing a Sound Material-Cycle Society: Status of resource recycling throughout the life cycle of each material, etc. by 2030 (a) Circulation utilization rate(input) – approximately 19%. (b) Circulation utilization rate(output) – approximately 44%. (c) Amount of final waste disposal – approximately 11 million tonnes/year. (d) Amount of bio-based plastics introduced – approximately 2 million tonnes
Republic of Korea	• Replacement of existing plastic fishing gear with biodegradable alternatives (gillnets and traps) • The amount and type of marine debris collected by the National Marine Debris Monitoring Program • Investigation and project to manage ghost fisheries in progress from 2023 by the Korea Fisheries Infrastructure Public Agency • Working towards the goal of zero marine plastic waste by 2050. Middle target is reducing generation of MPL by 60% by 2030 compared to 2018
Mexico	Not Available
Saudi Arabia	Not Available

Country	List of indicators/targets
South Africa	• In South Africa, the majority of plastic waste still ends up in landfills • Recycling is a key element of circulating plastic material in the economy. However, while all plastics are technically recyclable, not all plastics are currently recycled in practice in South Africa • The end-use market demand for recycled material is still one of the limiting factors for growth of the plastic recycling sector in South Africa. This is largely linked to the competitive price of virgin plastic
Türkiye	• Number of plastic carrier bags (Reducing the number of lightweight plastic bags used per person per year to not exceed 40 by 31/12/2025) • In order to prevent plastic pollution caused by fishing, Ministry of Agriculture and Forestry has been carrying out cleaning activities of abandoned or lost fishing gear from the sea and inland waters with the "Ghost Net Project" since 2014 • Microplastics (in sediment, water column, surface water), floating litter (surface water), seafloor litter (macro litter), digested litter (microplastics in biota), beach litter indicators • Microplastic monitoring in waste water treatment plants (as a pilot and research and development component
United Kingdom	• The UK Marine Strategy uses marine litter as a descriptor of clean seas, with three indicators falling within the descriptor (beach, sea surface, and seafloor litter) • Environmental Improvement Plan (EIP 2023) interim target to ensure that by 31 January 2028, the total mass of residual municipal plastic waste in the most recent full calendar year does not exceed 42kg per head of population in England • The UK Marine Strategy Part One (HM Government, 2012) sets out the following aim, in 2012: "the amount of litter on coastlines and in the marine environment is reducing over time and levels do not pose a significant risk to the coastal and marine environment, either as a result of direct mortality such as through entanglement, or by way of indirect impacts such as reduced fecundity or bioaccumulation of contaminants within food chains" • Under the North East Atlantic Environment Strategy, OSPAR committed to reduce the prevalence of the most commonly found single-use plastic and maritime-related plastic items on beaches by 50% by 2025, and 75% by 2030
United States of America	• Federal law and the Federal Acquisition Regulation direct that all federal agencies purchase biobased products in categories identified by the U.S. Department of Agriculture (USDA). To date, USDA has identified 139 categories (e.g. cleaners, carpet, lubricants, paints) of biobased products for which agencies and their contractors have mandatory purchasing requirements. As USDA identifies product categories for mandatory federal purchasing, minimum biobased content is established for the category • On 19 July, 2024, the Biden-Harris administration announced its commitment to phase-out federal procurement of single-use plastics from food service operations, events and packaging by 2027, and from all federal operations by 2035
Invited / Other Countries	
Myanmar	*In preparation* Plastic recycling Indicators and targets • Limit on the export and import of virgin plastic /plastic recycle scrap • Licensing requirements for plastic importers and manufacturers • The Percentage of current local plastic waste recycling rate • Increase recycling rates by improving infrastructure and community involvement: • Achieve increased resource efficiency by limiting virgin plastic exports, imports and encouraging recycling • Formalize and support the recycling sector- Provide organised support and control for the informal recycling sector to improve operational efficiency and outcomes

Country	List of indicators/targets
	• Increase the recycling rate- Aim to improve the plastic recycling rate beyond the current recycling rate through enhanced policies, infrastructure support, and community engagement • Implement fees and EPR effectively- Successfully implement and enforce fees on plastic bags and other products and ensure EPR compliance to shift the costs of waste management to producers Plastic use reduction indicators and targets • Restriction on the usage of single-use plastics (SUP) across various sectors (hospitality, institutions, nationwide) • Reduction in the volume of single-use plastics (SUP) produced and consumed • Introduction of fees for SUPs (plastic bags, take-away food packaging, Betel Nut Sachets) • Research on alternatives (plant-based and biodegradable materials) • Incentive programs for businesses to promote alternatives (BYO containers, reduced plastic bag usage) • Reduce the consumption of single-use plastics (SUP) • Phase out selected single-use plastics (such as plastic bags, straws, and cutlery) by short and medium term, with an ultimate goal of reducing SUP usage by long-term • Reduce operational costs by transitioning to alternative materials • Encourage consumer behavior change by eliminating the perception of SUPs as free items Plastic to alternatives, such as glass, paper, or bioplastics: • Promote alternatives to plastics, such as glass, paper, and bioplastics • Incentive industries to use biodegradable or plant-based material instead of SUPs • Achieve a substitution rate of SUPs by 2035 • Achieve a significant increase in the market share of alternative such as glass, paper, and bioplastics Plastic leakage indicators and targets: • Implementation of source-segregated waste collection systems to prevent plastic leakage into the environment • Reduce plastic waste leakage into the environments • Reduction in the amount of plastic waste improperly disposed of or dumped in the open site • Decrease leakage by 2030 Beach Cleanup indicators and targets: • Conduct regular beach cleanups to mitigate marine plastic pollution • Frequency and coverage of Clean-up Activities (e.g., number of beaches, total coastline length, or specific priority areas cleaned) • Achieve a measurable reduction in litter on target beaches • Set a goal for the volume of waste collected per clean-up (e.g., 10 tonnes of plastic waste removed per event) and the types of waste collected (e.g., single-use plastics, fishing gear, glass, metal, etc.)
Norway	• About 28% of all the plastic packaging put on the market was recycled in 2020. In line with Norwegian regulations relating to the recycling of waste (Waste Regulations), 47% of all plastic packaging put on the market must be recycled by 2025 and 52% by 2030 • The targets for sorting/separating the collection of plastic waste from households; is 50% from 2028, 60% from 2030 and 70 % from 2035. There will not be any data available on this target until 2028. We aim to achieve that all packaging (100%) is recyclable by 2030 • 92% of plastic bottles that were put on the market by Infinitum's members (Infinitum is a Norwegian producers responsibility organisation for plastic bottles) in 2023 were recycled through Infinitum's return scheme. 77% of PET bottles shall be separately collected by 2025 (already achieved)

Country	List of indicators/targets
	• Baseline of 55% average content of recycled plastic in plastic beverage bottles (mainly PET) in 2023. We aim to achieve at least 25 % recycled plastic on average in beverage PET bottles meeting certain criteria from 2025, and at least 30 % recycled plastic on average in all beverage bottles meeting certain criteria from 2030 (already achieved) • We aim to achieve a minimum percentage of recycled content recovered from post-consumer plastic waste ranging from 10 to 35 % in any plastic part of packaging placed on the market by 1 January 2030 or later depending on the implementing act, and a minimum percentage of recycled content recovered from post-consumer plastic waste ranging from 25 to 65 % in any plastic part of packaging placed on the market by 1 January 2040 • In line with EU targets, 55% of municipal waste and 65% of packaging waste must be prepared for re-use or recycled by 2025 • 60% of all building waste was prepared for reuse or recycled in 2022 Target to prepare for reuse or recycle 70 % of construction and demolition waste by 2020 was not achieved • Reduce the amount of plastic carrier bags to an equivalent of 40 plastic carrier bags per person per annum in 2025 • Reduce the use of plastic take-away food containers and beverage cups incl. lids to 50% by 2026 compared to 2022 • Ban of certain single-use plastic products that has been in place since 2021 is estimated to reduce SUP use with around 6% or 3600 tonnes/year (1.9 billion SUP items/year)
Netherlands	• In 2022, of all plastic packaging put on the Dutch market, 46% was recycled. 68% of plastic drink bottles were collected • 42% recycling or reuse of plastic packaging waste • 40% reduction in the use of single use plastic cups and food containers in 2026, compared to 2022 levels (national goal to implement EU SUP Directive) • The regional sea convention for the North-East Atlantic, OSPAR, has developed several common indicators to monitor marine litter: In addition, the Netherlands has cooperated in the development of the updated EU monitoring guidelines and EU beach litter assessments (see website MSFD Technical Group on Marine Litter: MSFD Technical Group on Marine Litter (europa.eu))
Philippines	• Plastic product recovery indicators: Percentage of plastic product footprint recovered increased (from the PDP 2023-2028 Results Matrix Chapter 2)
Singapore	• Yearly Flotsam Data
Spain	• Beach litter; Seafloor litter • Floating litter; Microplastics on beaches • Microplastics on beaches • Microplastics on the water surface • Microplastics on sediments • Citizen Science • Marine Litter in biota (ingestion and entanglement on marine turtles)

Figure 2 summarises indicators and targets adopted in countries by four main categories (indicators/targets on leakage, plastics flow, waste flow and those on specific interventions and activities) and sub-categories. For indicators/targets for monitoring plastics leakage is institutionalised in countries with "macroplastics on beach" and macro/microplastics in biota (fulmar stomach being a dominant methodology) are most prevalent. For those on plastics flow, "plastic use" and "recovery/recycling" are widely used with many respondents reported having quantitative and timebound targets beyond indicators. For those on specific interventions and activities, eight countries have targets on SUP ban/reduction/elimination. Nine countries also reported having indicators and targets for removal, recovery and recycling of ALDFG.

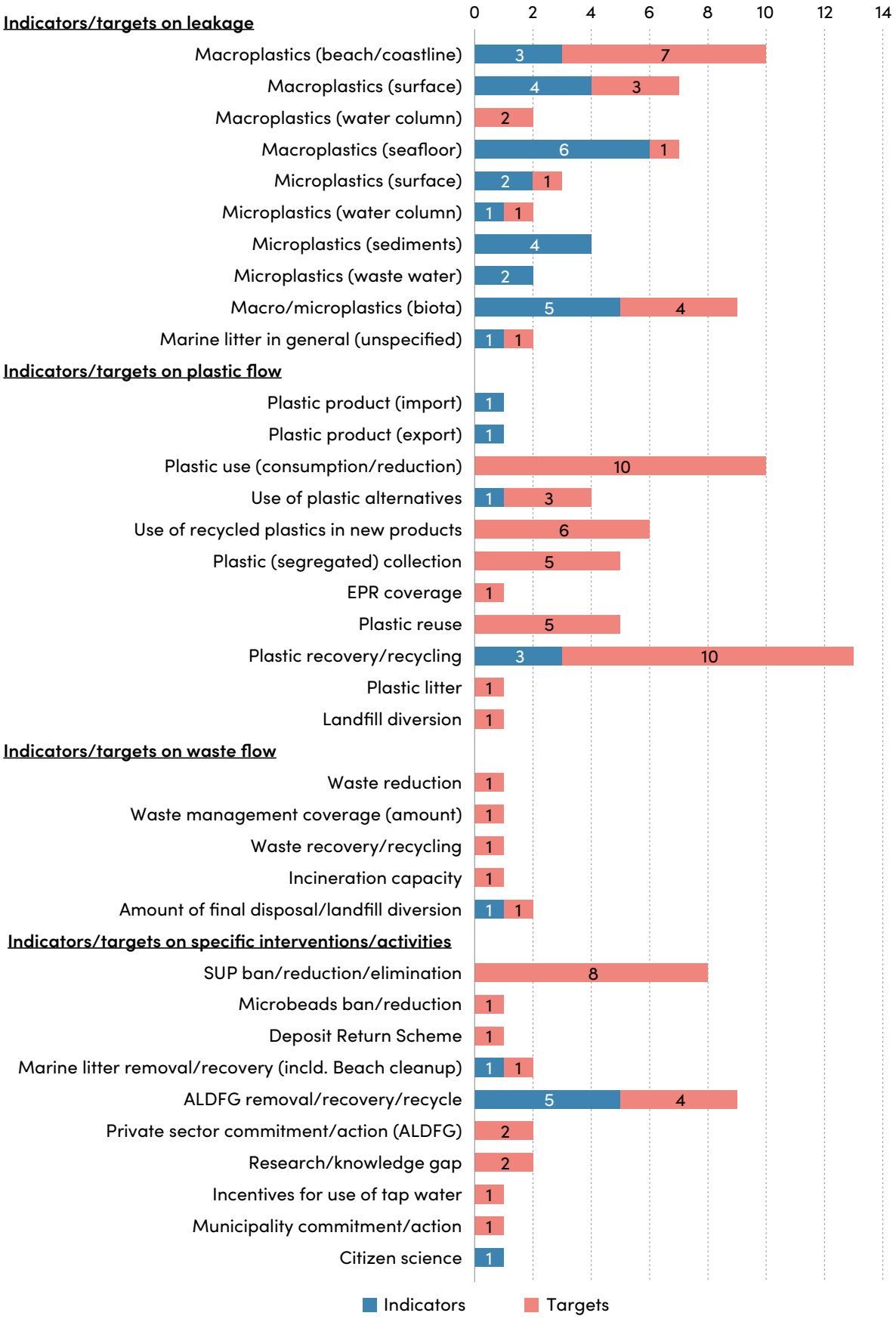


Figure 2: Typology of indicators and targets adopted in countries

2.4 Technical Standards, Guidelines, Methodologies

Technical standards, guidelines, methodologies are instrumental policy tools to translate policies into practice in each step of the plastics lifecycle and ensure how plastics are produced, manufactured, sold, used, and disposed of and their environmental implications assessed in standardised fashion.

For instance, as the previous section indicates, the establishment of standardised indicators and measurement methodologies is crucial for streamlining the monitoring of MPL. Standardization ensures consistency and comparability in data collection and reporting, which is vital for comparing results across different regions and over time within a country. Technical guidelines play a critical role in this process. By developing and adhering to standardised technical guidelines, countries can provide structured approach and a common framework to the monitoring and assessment of MPL conducted by different subnational governments and entities, ensuring that data are collected in a reliable, comparable and reproducible manner within the jurisdiction. For example, the European Union's harmonised monitoring guidelines and China's "Technical Specification for Monitoring Marine Microplastics" offer clear instructions on how to measure and evaluate plastic pollution in marine environments. Such guidelines can pave the foundation for informed policy decisions as well as implementation, evaluation and updating of actions against marine plastic pollution.

Harmonization of standards, guidelines and methodologies across countries is also instrumental to gain holistic insights into the stocks and flows of plastics in the economy and the environment, and enable its better management of MPL at global level.
Hamonization not only ensures consistency and comparability of data across different regions and countries, making it easier to aggregate data at a global level and assess the overall impact of MPL, but it can also facilitate international cooperation, allowing countries to collaborate more effectively in addressing the shared challenge of marine plastic pollution.

This section presents the MPL-relevant technical standards, guidelines, and methodologies that are developed in various countries, as detailed in Table 4. These documents range from those intended to control plastics in up-stream (production/manufacturing) to those in down-stream (waste management/recycling) and ensure monitoring plastics in the environment (Figure 3).

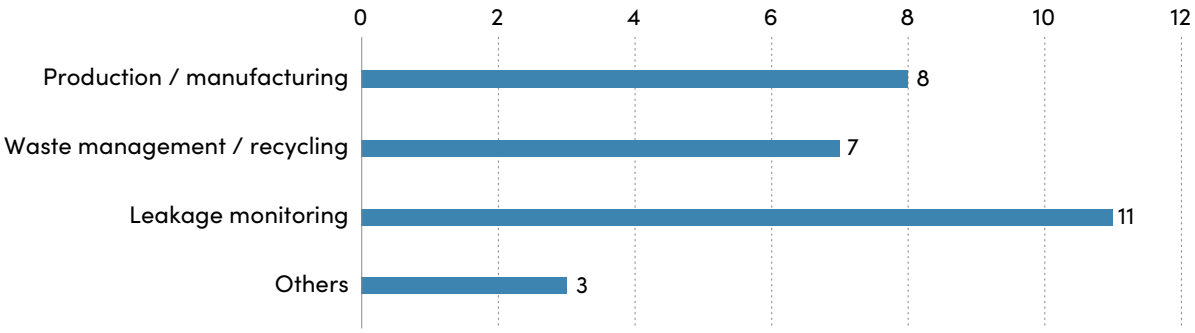


Figure 3: **Reported instruments by thematic categories**

Table 4: Summary of MPL technical standards, guidelines, and methodologies by countries

Country	List of technical standards, guidelines and methodologies
G20 Members	
Australia	• The Australian Marine Debris Initiative (AMDI) Monitoring Protocols for Litter and Marine Debris, coordinated by an Australian NGO the Tangaroa Blue Foundation *In preparation* • Design standards, recycled content requirements and a national monitoring method (CSIRO) are currently being developed
Canada	• Notice with respect to reporting of plastic resins and certain plastic products for the Federal Plastics Registry for 2024, 2025 and 2026
China	• Technical specification for pollution control of plastic waste, 2022 • Guidelines for Monitoring and Evaluation of Marine Litter (Trial), 2024 • Technical Specification for Monitoring Marine Microplastics (Trial), 2023
European Union	• A Joint list of litter categories has been developed, so that collected data are recorded in a harmonised way • The harmonised EU monitoring guidelines were updated in 2023
France	• OSPAR guidelines on beach litter monitoring for the quantification and classification of the collected litter ("Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area") • As part of the National Roadmap against Marine Litter "0 plastic reaching the sea 2019-2025", a "guideline on the fight against illegal waste dumping and abandonment" was published in 2020, aimed primarily at local authorities • EU guidelines on the monitoring of marine litter in Europeans Seas (JRC Technical Report 2023) • Within the framework of the roadmap for circular economy : definition of standard ranges of reusable packaging for the catering sector, as well as for fresh products and drinks
Germany	• As per EU MSFD and regional provisions (OSPAR, HELCOM) • Beach litter, litter on the seafloor • Plastic particles in the stomachs of seabirds (Northern fulmars) • Minimum standard for determining the recyclability of packaging subject to mandatory PRO participation pursuant to section 21 (3) VerpackG, annually updated standard published by Central Agency Packaging Register (Zentrale Stelle Verpackungsregister – ZSVR), in agreement with the German Environment Agency (Umweltbundesamt – UBA) • Monitoring handbook of the current German Bund/Länder monitoring programs (BLMP) • Guidance on Monitoring of Marine Litter in European Seas (MSFD TG ML, JRC Scientific and Policy Reports)
Indonesia	• To reduce the marine plastic waste leakage by 70% in 2025 • LIPI - In situ measurements of stranded marine debris using transect lines along the low tide coastline. Based on 2018 data • TKN PSL - Combining potential marine debris leakage from land-based and sea-based activities. Based on 2018 data • World Bank - Modeling of waste data generated, waste composition, waste management systems, field analysis of waste disposal and capture, and in situ waste sampling in waterways and coastal areas. Based on 2014–2015 data • NPAP - Modeling of waste mass flow analysis based on measurements in waste systems reported by local governments. Based on 2015–2018 data

Country	List of technical standards, guidelines and methodologies
Italy	• Technical Standards: – UNI EN 13432: Requirements for packaging recoverable through composting and biodegradation – UNI EN ISO 15270: Guidelines for the recovery and recycling of plastic waste – UNI EN 15343: Plastics recycling – traceability and assessment of conformity and recycled content – CONAI (National Packaging Consortium) and COREPLA (National Consortium for the Collection, Recycling, and Recovery of Plastic Packaging) provide guidelines for the management of packaging waste – Conducts environmental monitoring, including the assessment of plastic pollution and leakage into the environment, providing reports and data on waste management and environmental impacts, according to MSFD – National program Mo.Ri.net (Monitoring, Census, Collection and Recycling of Ghost Nets: Fishermen as protagonists of sea conservation). The program was conducted by ISPRA, PolieCo, Siena University, Capo Carbonara MPA and Asinara National Park – This programme aims at making a concrete contribution to solving the problem of floating rubbish deposited on the seabed. The objective is to restore compromised marine habitats through concrete waste removal actions (plastic waste and ALDFG), actively involving fishermen and raising awareness on the issue through dissemination activities
Japan	• Guideline for Design of Plastics-containing Products • Guidance for Application for Accreditation of Voluntary Collection and Recycling Business Plan by Manufacturers/Distributors, etc. under the Law Concerning the Promotion of Resource Recycling of Plastics • Guidance for Regional Planning Based on the Act on Promoting the Treatment of Marine Debris • Good Practices for Measures to Control Marine Debris Generation • Manual for Marine Litter Collection through Cooperation between Fishermen and Local Governments • The Guidelines for Harmonizing Marine Litter Monitoring Methods Using Remote Sensing Technologies • Guidelines for Harmonizing Ocean Surface Microplastic Monitoring Methods • Guidelines on fishery-related waste management • Guidelines for the Promotion of Planned Disposal of Fishery Waste
Republic of Korea	• Production / Manufacturing: Inspection regulations for biodegradable fishing gear. Criteria for biodegradable fishing gear resin, for biodegradation effectiveness, and for the strength of biodegradable nets • Leakage monitoring: Assessment of microplastic distribution to determine their quantity and form in the ocean. Monitoring the quantity and types of marine microplastics on beaches, sea surfaces, and the seafloor
Mexico	• At local level, Mexico City has a Law on Circular Economy (February, 2023), which states that productive sector has to reduce its ecological footprint; reducing the use of natural resources, energy and waste in their processes and products
Saudi Arabia	In Preparation
South Africa	• In 2003, SA promulgated the ECA: Plastic Carrier Bags and Flat Bags Regulations of 2003, and the associated Standards Act Compulsory Specification for Plastic Carrier Bags and Flat Bags of 2003. The manufacture, trade, or commercial distribution of domestically produced or imported plastic carrier bags and plastic flat bags, for use within SA, is prohibited unless they comply with the Compulsory Specification for Plastic Carrier Bags and Flat Bags

Country	List of technical standards, guidelines and methodologies
Türkiye	• The Ministry of Environment, Urbanization and Climate Change has published Monitoring Guidelines on Marine Litter in 2019 with a project called "Project on Standardization in Marine Monitoring". The work on the revision of guidelines according to updated and current monitoring strategies and new indicators in the first half of 2025
United Kingdom	• The administrations of the UK supported the development of a Publicly Available Specification developed by the British Standards Institution, which sets out how any business handling or managing pellets can reduce pellet loss. This is the first of its kind and was published in July 2021 • PAS 510:2021 sets out requirements for the handling and management of plastic pellets, flakes and powders throughout the supply chain to prevent spills, leaks and loss to the environment • To fulfil the UK's commitment to lead action B.2.1 of the OSPAR Regional Action Plan on Marine Litter on end-of-life recreational vessels, the UK commissioned research to identify estimates of recreational vessels in each OSPAR nation and develop a methodology to quantify the number of recreational vessels in use and coming to the end of their life across the OSPAR Maritime Area
United States of America	• NOAA's Marine Debris Program implements the Marine Debris Monitoring and Assessment Project (MDMAP) to measure the amount and types of marine debris/litter on shorelines. MDMAP developed a "Shoreline Survey Guide" as a standardised guideline that provides a written and visual explanation of NOAA's shoreline marine debris survey methods, including instructions on creating a survey site, conducting a survey, completing datasheets and submitting data to NOAA
Invited / Other Countries	
Myanmar	• Waste management / recycling: Create public awareness campaigns and provide local plastic action plan on reducing the use of single-use plastics. Promote the benefits of reusable and biodegradable alternatives to consumers and businesses
Netherlands	• The EU's Ecodesign for Sustainable Products Regulation, under which circular design requirements for a wide range of products can be set, allows e.g. for regulating microplastic release • The European Commission will adopt the Ecodesign Working Plan, which sets out the product priorities for 2025-2027, at the beginning of 2025 • Conducts environmental monitoring, including the assessment of plastic pollution and leakage into the environment, providing reports and data on waste management and environmental impacts, according to MSFD
Norway	• Under the Nordic Council of Ministers, there is an ongoing project which will help prepare for and develop more harmonised plastic statistics in the Nordic countries.
Philippines	• Guidelines for the Conduct of Waste Analysis and Characterization Study (WACS) on Municipal Solid Wastes • Guidelines on the Phasing out of Non-Environmentally Acceptable (NEA) Products and Packaging Materials
Singapore	Not Available
Spain	• Europa (Study to support the implementation of obligations set out in the Single Use Plastics and Port Reception Facilities Directives)

3 Measures

This chapter provides the measures implemented by countries in their fight against marine plastic litter, including those implemented across plastic value chain to phase out/rationalize plastic production, use and waste; those specifically targeting Abandoned, Lost and Discarded Fishing Gears (ALDFGs); measures promoting partnerships and innovation; and efforts promoting monitoring, data management and understanding on flow of plastic litters.

Governments are employing a wide range of policy tools, from legislative initiative, development of guidelines and standards to guide subnational governments and/or value chain actors, Extended Producer Responsibility (EPR) schemes, to green procurement aiming to create market for products based on secondary materials and funds for supporting actions by diverse non-government actors.

In terms of Measures across Value Chain, the most widely implemented actions include those for reducing SUP through regulations and voluntary measures (21 out of 23 coutries), improving waste management and recycling systems (22 countries), and conducting clean-up activities (all 23 countries), while those for restricting microplastics in products (13 countries) and installing capturing equipment for preventing leakage of macroplastics to aquatic environment (14 countries) were less reported.

Slightly more G20 countries reported actions on ALDFG than last year, with many responding countries reporting gear retrieval and beach clean-ups, while some shared mandatory fishing gear loss reporting. Preventive measures including introduction of standards for circular design of fishing gear and conditional license scheme to promote sustainable fisheries are also reported.

Promoting partnership and collaboration among stakeholders to induce actions are highly essential.

In the reporting countries, businesses are increasingly encouraged to set voluntary commitments, and consumers are sensitised to MPL issue through outreach programmes and formal education. In addition to conventional awareness raising activities, self-sustaining, multi-directional and action oriented multi-stakeholder platforms, business alliances, voluntary networks and national campaigns play increasingly important role in continuously engaging members for promoting mutual learning, collaboration and mobilising actions.

From development of sustainable materials alternative to plastics to promotion of circular product designs to novel collection, treatment and monitoring technologies, innovative solutions play a critical role in advancing actions against MPL. More than 70% of the responding countries are promoting innovative solutions through Research and Development through subsidy programmes and investment funds.

Understanding the state of plastic flow and the extent of pollution is a critical basis on which effective countermeasures are developed and evaluated. Governments are also investing in monitoring, data management and understanding flow of plastics waste. Seventeen countries reported having conducted monitoring/ estimation / scientific research on leakage of plastics/microplastics to the natural environment and/or flow of ocean surface, while fewer countries reported on Life Cycle Assessment (LCA) (10 countries) and Material Flow Analysis (MFA) (9 countries) of plastics in the economy. Monitoring/reporting mechanism is established and monitoring are regularly conducted in 11 countries, of which majorities are at national level.

3.1 Measures across Value Chain

This section summarizes reported actions across plastic value chain, from up-stream measures aimed at preventing plastic waste from being generated such as encouraging sustainable/circular product design to down-stream measures aimed at preventing emission of plastic waste into natural environment including aquatic environment such as strengthening waste management and recycling system and clean-up activities in coastal areas.

3.1.1. Actions for Encouraging Sustainable/Circular Product Design

Eighteen countries (13 G20 members and five invited countries) responded positively to having implemented / are implementing actions under this category while policy responses are "in preparation" in one country.

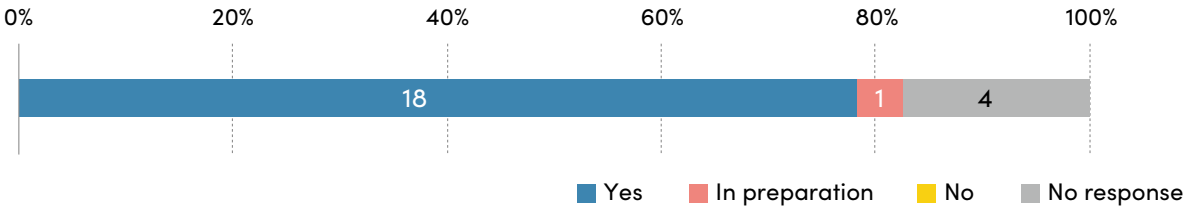


Figure 4: **Status of prevalence of policy actions for encouraging sustainable/circular product design in countries**

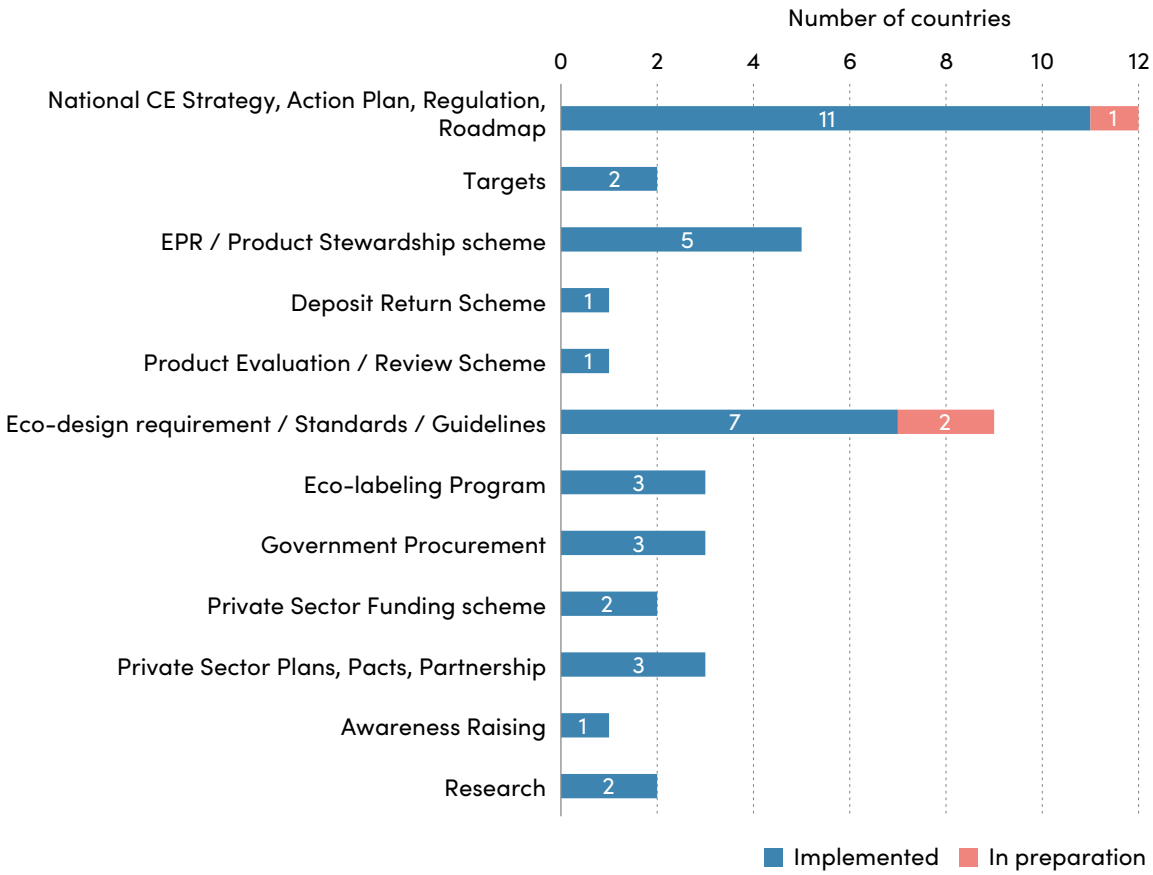


Figure 5: **Status of implementation of measures for encouraging sustainable/circular product design in countries**

Reported policy instruments ranged from formulation of comprehensive regulatory/policy framework, EPR, eco-design requirements, standards, and guidelines to product evaluation system eco-labeling, and public procurement.

Legal and Policy Framework

Many countries reported having formulated comprehensive laws, national strategies and action plans which generally promote actions in line with circular economy principles including those promoting eco-design. This includes, for instance, Canada (Action Plan on Zero Plastic Waste), China (Development of Circular Economy Plan (2021-2025), the Netherlands (National Circular Economy Programme), and the US (National Recycling Strategy).

(EPR)

EPR schemes are also intended to encourage sustainable/circular product design. EPR Law (RA 11898) of the Philippines establishes a regulatory framework that actively promotes sustainable and circular product design through reduction of unsustainable products and Product Waste Recovery Program. Italy has introduced ERP for textile products to incentivise eco-design of textile products.

(Target)

Italy set binding eco-design specification targets for 2030 under its National Strategy for Circular Economy. National Packaging Targets of Australia is driving systemic change to how packaging is designed.

Eco-design Requirements, Standards, and Guidelines

In Spain, only single-use plastic products whose caps and closures remain attached to the container during the intended use phase of that product, may be placed on the market, in accordance with harmonised standards adopted at European Union level. The Philippines also introduced national standards, while Australia plans to introduce new packaging regulations which sets mandatory packaging design requirements to ensure that all packaging placed in its market is designed to be reused, recycled and reprocessed safely. Indonesia has set a national standardisation for quality assurance, ensuring that all products meet specific criteria for performance, safety and reliability, complimented by comprehensive guidelines on material selection, manufacturing processes and testing protocols, which manufacturers must adhere to.

In the EU, the Ecodesign for Sustainable Products Regulation entered into force in July 2024 as a part of a policy package to achieve objectives of its 2020 Circular Economy Action Plan. The instrument will enable targeted eco-design rules (covering both performance and information requirements) to be laid down for a very wide range of products on the EU market, with priority products and areas for action to be set out separately by a working plan.

Product Evaluation/Review System

The Republic of Korea introduced an evaluation system for recyclability to evaluate factors that impede the recyclability of products and to make improvements in the product manufacturing phase to promote recycling. In addition, the Quality Certification Committee on Certified Buoys was established to review the eco-friendliness, recyclability, durability and usability of new buoys.

Ecolabeling Program

The Philippines introduced a voluntary, multi-criteria-based, third-party National Ecolabeling Program (Green Choice Philippines) which aims to encourage clean manufacturing practices and consumption of environmentally preferable products and services, which is also complimented by a government procurement programme. The US developed Safer Choice and Design for the Environment (DfE) voluntary certification programmes to enable consumers to choose products that meet EPA's rigorous health and environmental criteria.

Public Procurement

In Italy, MEC (Minimum Environmental Criteria) defines sustainability requirements for product consumption in public sector. The US introduced the Environmentally Preferable Purchasing Program and its Recommendations of Specifications, Standards and Ecolabels for Federal Purchasing, which leverages performance standards and ecolabels to achieve environmental priorities of the administration, including plastics reduction.

Some countries place emphasis on specific approach/product groups for promoting circular design: The Netherlands specifically focus on extending product lifetime, making products reparable and reusable and ensuring that products can be processed more effectively in the waste stage. The Netherlands identified electric and electronic equipment, textile and furniture as particularly necessitating intervention while Italy places emphasis on textile.

Saudi Arabia National Center for Waste Management is exploring utilisation of post-consumer recycled products in the design of new building projects.

3.1.2. Policy Actions for Encouraging Plastic Alternatives and Recycled Materials in Production Stage

Promoting the use of recycled materials or sustainable alternative materials in products can in effect reduce the demand on virgin materials, reducing environmental impact at production stages.

Seventeen countries (12 G20 members and five invited countries) responded positively to having implemented / are implementing actions under this category while policy responses are "in preparation" in 1 country (Indonesia) (Figure 6). Of the 17 countries, actions on the "use of biodegradable plastics" are reported by eight countries and "use of recycled materials" by seven countries (Figure 7). Only four countries (China, France, Japan and the USA) reported on both biodegradable plastics and recycled materials.

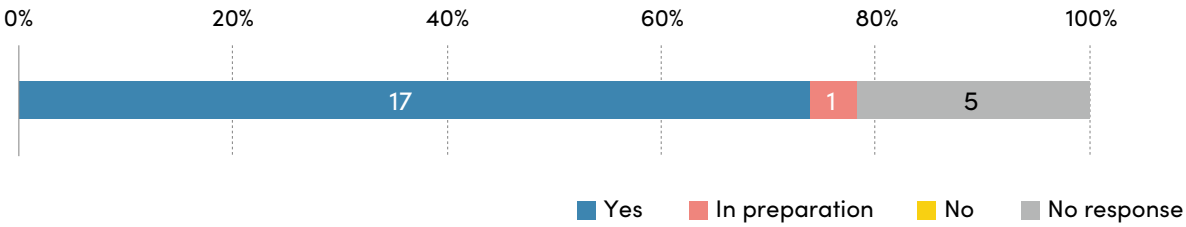


Figure 6: **Status of prevalence of policy actions for encouraging plastic alternatives and recycled materials at production stage in countries**

Countries are implementing a wide range of policy tools and approaches to promote use of plastic alternatives and recycled materials at production stage. This include introduction of product labelling on recycled contents, setting rules for recyclability in production stage, setting quality/ technical standards, minimum recycled contents/proportion requirements, requesting companies to develop and implement corporate action plan, research development and government procurement requirements.

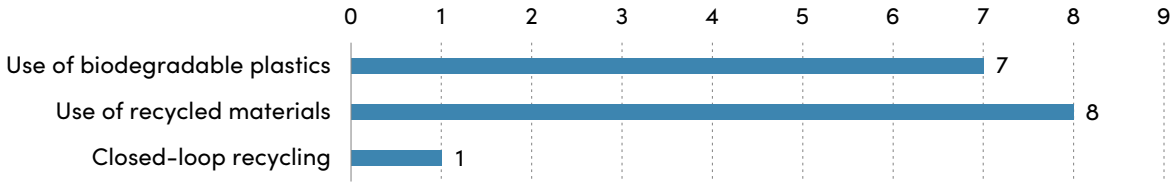


Figure 7: **Use of sustainable materials in production process in countries**

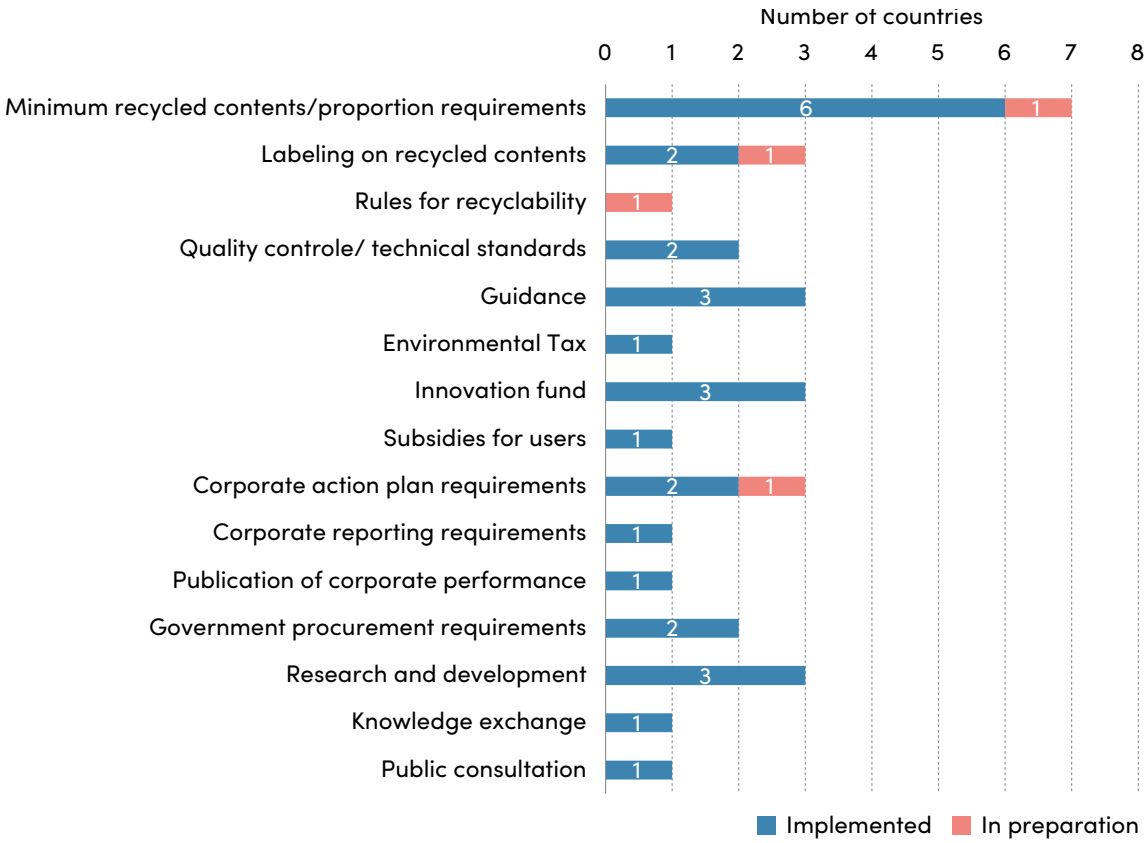


Figure 8: Status of implementation of measures to encourage plastic alternatives and recycled materials in production process in countries

Comprehensive Laws, Strategies and Action Plans

Promotion of plastic alternatives and recycled materials in production stage constitutes an important element of national laws, strategies and action plans in many countries. China, under its Opinions of Further Strengthening Plastic Pollution Control (2020) is promoting use of biodegradable packaging and other alternative materials for food and beverage takeaways that meets performance and food safety requirements and the use of recycled plastics that meet quality control standards. The Philippine Action Plan for Sustainable Consumption and Production (PAP4SCP) encourages the use of secondary raw materials (e.g. paper, plastic and glass cullets) for production, which is complemented by the recycled content requirements mandated by its EPR Act.

Recycled Contents Requirements

Some countries are introducing requirements for use of recycled contents in products. Australia is considering options for new packaging regulations to set minimum recycled content thresholds by material and polymer to drive end markets for recycled content.

Many EU member states also reported setting targets as they implement the EU's Single-use Plastics Directive. The Netherlands introduced a national standard in 2023 which sets a minimum share of circular/bio-based plastics for all the polymers placed in the Dutch market (15-20% once it takes effect in 2027, to be increased to 25%-30% in 2030). France is requiring packaging producers to gradually increase the minimum proportion of reused packaging from January 2023 (5% in 2023 and 10% in 2027). Similarly, Spain, Italy and Norway set targets for minimum recycled content in PET bottles: 25% by 2025 and 30% by 2030; while Norway also reported on its plan to implement the EU's new Packaging and Packaging Waste Regulation which sets more ambitious targets (10-35% by 2030 and 25-65% by 2040).

Tax

In the UK, Plastic Packaging Tax (2022) is charged to plastic packaging with less than 30% recycled plastic, aiming to provide an economic incentive for businesses to use recycled materials in the production of packaging.

Labelling

Efforts are also in progress in Spain to communicate such recycled content information to consumers by introducing labelling.

Standards

France defined standards for reusable packaging for the catering sector, fresh produce and drinks. China has introduced technical standards for biodegradable plastics and also demand clarification of conditions under which expected degradation will occur.

Public Procurement

Some countries are harnessing the power of public procurement to induce sustainability shifts in products and services through government procurement policy. In the US, EPA introduced Recommendations of Specifications, Standards, and Eco-labels for Federal Purchasing which requires federal procurements to utilise products and services with any standards and ecolabels to the maximum extent practicable based on the recommendation. The recommendation currently includes compostable and recyclable food service ware while inclusion of reusable food ware is also being considered by EPA under its Environmentally Preferable Purchasing Program.

Research

Countries are engaged in research (and development) although for different purposes and motivations. Canada is investing in plastics science, including to detect, characterize and assess the impacts of plastic pollution. China is investing in R&D of recyclable materials and materials with improved recyclability. Canada through its Plastic Innovation Challenge is also supporting innovators and SMEs to develop solutions, while the UK through its funding to WRAP is also supporting the development of reuse/refill schemes by industry. On the other hand, the UK is widely inviting domestic actors to share scientific evidence as a basis for standards for bio-based, biodegradable and compostable plastics to address concerns over such materials regarding the extent to which plastics marketed as biodegradable actually biodegrade in the open environment. Similarly, oxodegradable/oxobiodegradable plastics were also subject to call for evidence in 2019.

3.1.3. Steps Taken towards Restricting Microplastics in Products

Thirteen countries (ten G20 members and three invited countries) responded positively to having implemented / are implementing actions under this category while four countries responded that they do not implement actions.

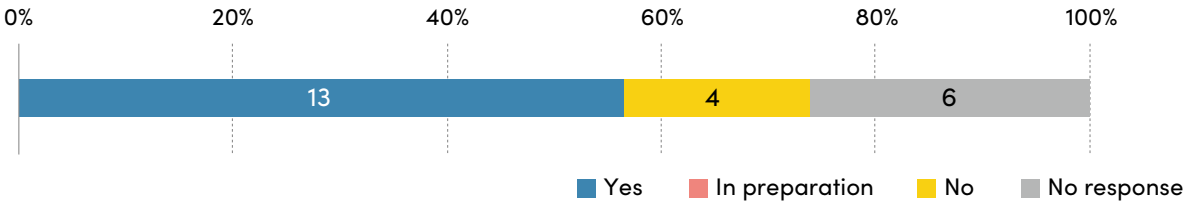


Figure 9: **Status of prevalence of restrictive measures for microplastics in products in countries**

Ban on Intentional addition of microplastics

Canada introduced Microbeads in Toiletries Regulations (2017). China banned the production of microbeads-containing daily chemical products by the end of 2020, and their sales by the end of 2022. In Italy, manufacturers can no longer place on the market cosmetic products containing exfoliating or cleansing microplastics based on Law No. 205 (2017). In Republic of Korea, the manufacture, sale, import, and use of cosmetics and non-medical cleansing and exfoliation products containing solid plastics smaller than 5 mm are prohibited.

In the EU, the Regulation on intentionally added microplastics restricts microplastics intentionally added to products, defined broadly covering all synthetic particles measuring less than 5mm that are organic, insoluble and resist (bio)degradation.

Spain prohibits the addition of plastic microspheres less than 5mm. France is gradually expanding targeted products starting from a ban on exfoliating cosmetics/scrubs by 2018, a ban on the sales of medical devices containing microplastics by 2024, and plans to introduce a ban on the sales of rinsed cosmetics containing microplastics such as shampoos, hair colouring products, shower gels and make-up removers. Norway, as part of the European Economic Area reported plans to nationally implement the EU regulation on intentionally added microplastics under REACH. Further developments are expected in the region where the European Commission proposed a new regulation to reduce plastic pellet loss to the environment.

Other products

The targeted products other than cosmetics include laundry detergents (Republic of Korea) and cleaning products, fertilisers, medical devices, infill materials (EU), non-prescription drugs, natural health products (Canada).

Some countries also reported actions on other product-induced microplastics. In the US, NOAA and EPA developed and published a report on microfiber pollution in 2024, informing its Congress (and the general public) with an overview of the microfiber pollution issue, while also outlining a path forward for federal agencies to address this problem. The UK reported on the ongoing effort to internationally harmonise methodology for measuring tyre abrasion and limits for the abrasion rate of tyres through UN Economic Cooperation in Europe. South Africa established a microplastic laboratory as an initiative under the Commonwealth Litter Program to enhance research and scientific training on microplastic pollution.

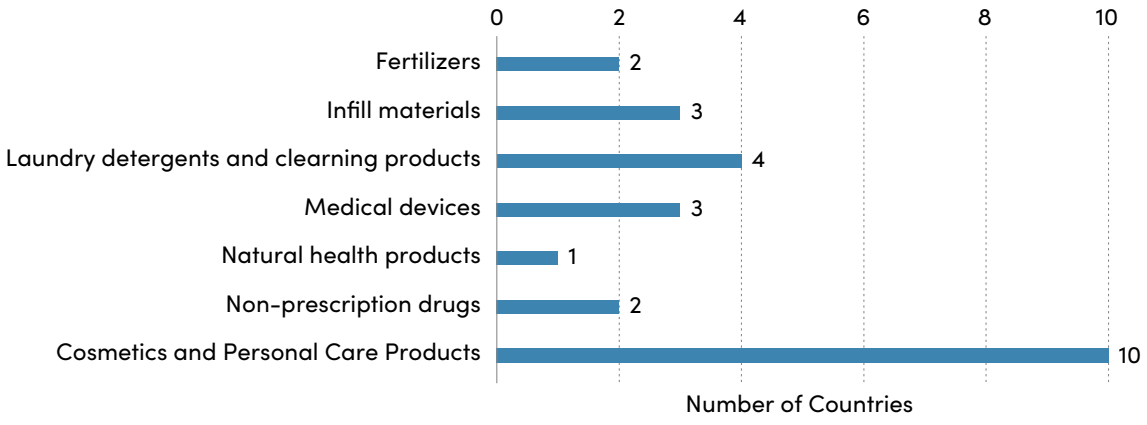


Figure 10: **Product categories subject to microplastics restrictions in countries**

3.1.4. Reduce Single-Use Plastics by Regulations or Voluntary Measures

Almost all countries (21 countries - 15 G20 members and 6 invited countries) responded positively to having implemented / are implementing actions under this category, while one country reported as "in preparation". Breakdown of policy instruments employed in each country suggest that *Regulatory measures* (18 countries) and *Economic measures* (13 countries) are among most well adopted categories followed by *Information measures* (seven countries) and *others* (four countries). It is noteworthy that the majority of respondents are increasingly relying on a combination of several policy instruments.

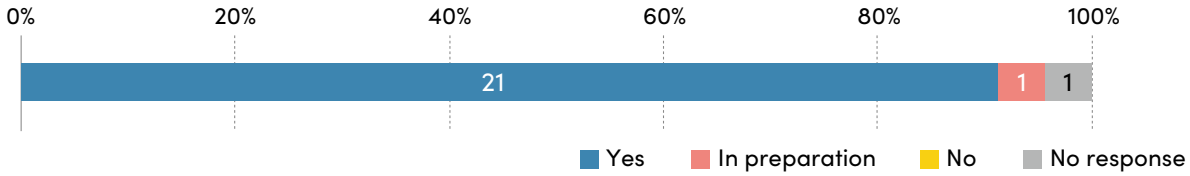
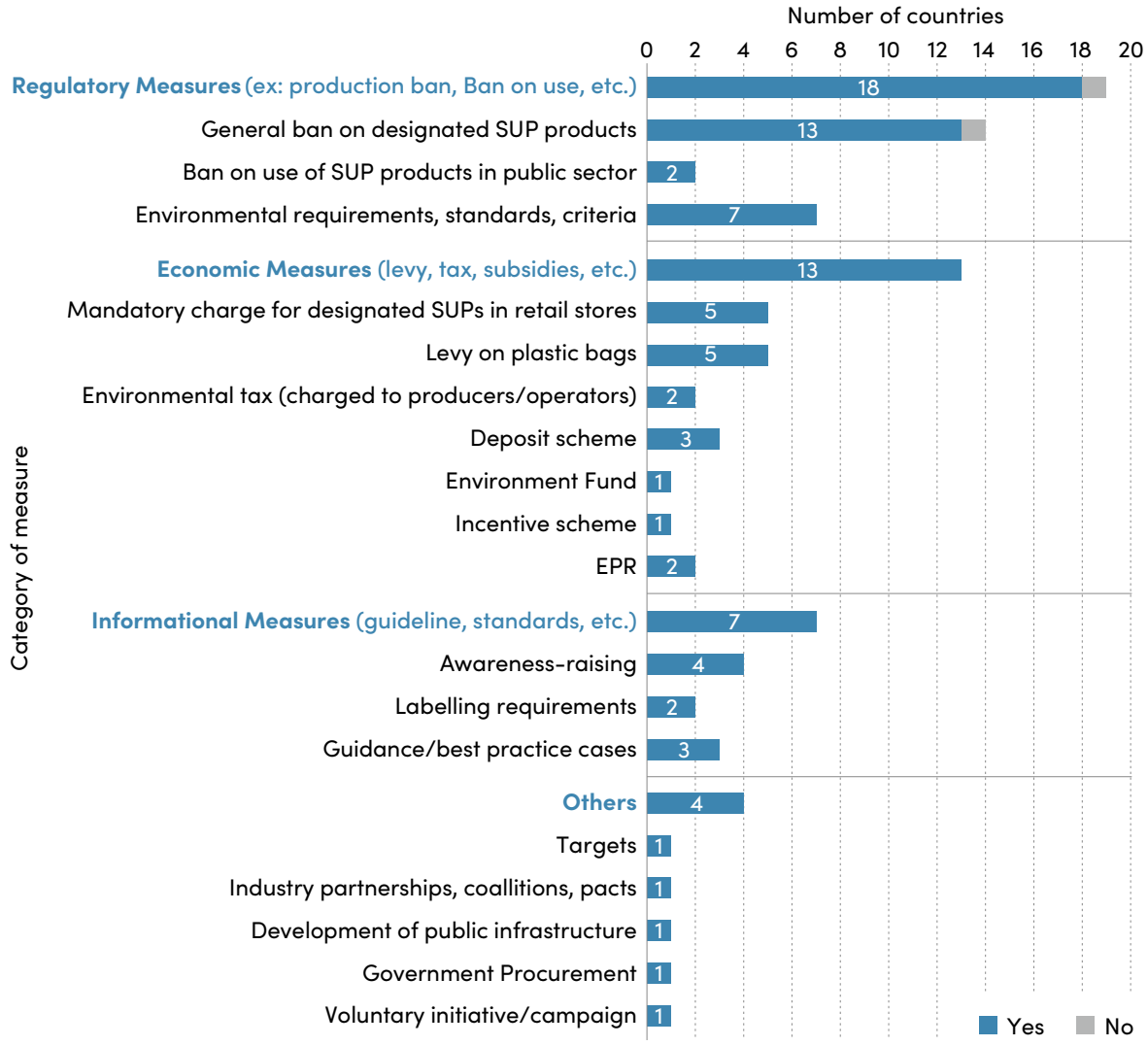


Figure 11: **Status of prevalence of SUP reduction measures in countries**



* Reported measures are classified into four categories (highlighted in blue font): regulatory measures, economic measures, informational measures and others.

Figure 12: **Prevalence of different categories of policy instruments utilised for SUP reduction in countries**

Regulatory Measures

Of the regulatory measures reported, introduction of bans on the use of designated SUP is the most widely adopted instrument, while the scope of targeted products and circumstances slightly differ among countries reflecting their extent and the unique socio-cultural context in which SUP products are used.

In the EU, single-use plastic products cannot be placed on the market where sustainable alternatives are easily available and affordable (targeted products include cotton bud sticks, cutlery, plates, straws, stirrers and sticks for balloons).

Spain's Law 7/2022 on waste and contaminated soils for a circular economy prohibits the following items to be placed on the market: (a) SUP products (beverage and food containers, cotton swabs, cutlery, plates, straws, drink stirrers, sticks destined to hold balloons, feminine hygiene products, wet wipes, tobacco products with filters, fishing gear, plastic bags), and (b) products made of oxo-degradable plastic and c) plastic microspheres of less than 5mm added intentionally.

Italy has gradually expanded the scope of targeted SUPs through continuous legislative measures, from a ban on non-biodegradable/compostable light and ultralight shopping plastic bags in 2018 to a ban on plastic cotton bud sticks, as well as the transposition of DIRECTIVE 2019/904/EC on the reduction of the impact of certain plastic products on the environment. Similarly, China has gradually expanded the scope of its bans. The ban on SUP tableware in the catering industry by the end of 2020 was expanded to include star-rated hotels and guesthouses nationwide by 2022, and is expected to be further expanded to include all hotels and guesthouses by the end of 2025.

The Republic of Korea introduced a ban on the use of single-use cups, plastic straws and free provision of single-use bags and shopping bags in facilities such as food court, food service businesses and large-scale stores. In addition, the use of plastic umbrella covers, provided by department stores and other retail stores on rainy days, is prohibited while the use of plastic cheering equipment is also banned in sports facilities.

Several Local Government Units (LGUs) in the Philippines have implemented ordinance regulating SUPs including ban on specific USP items, while NSWMC Resolution No. 1363[6] introduced a ban on USPs in public sector entities nation-wide. As of July 2024, 114 local governments have introduced policies restricting/banning SUPs in Indonesia. Prohibition of SUP bags is also implemented in Mexico City and in twelve U.S. states.

Economic Measures

Countries reported implementing diverse economic instruments including application of mandatory charge for designated SUPs in retail stores, levy on plastic bags, environmental tax on producers or business operators, and deposit-return scheme.

Türkiye is implementing charging to plastic carrier bags from 2019 based on *Procedures and Principles Regarding the Charging of Plastic Carrier Bags*. Spain introduced a mandatory charge for SUP bags sold in shops. In China, plastic shopping bags at retail stores have been subject to charging since 2008. The Dutch government has advised ideal rates for a mandatory surcharge

6 Full title: "Resolution directing the Department of Environment and Natural Resources (DENR) to prepare and implement the banning of the use of unnecessary Single-Use Plastics by National Government Agencies (NGAs), Local Government Units (LGUs) Offices and all other Government Controlled Offices"

for SUP tableware to be set by vendors. The charge for SUP bags have gradually increased across the UK since 2015. In South Africa and other countries, compulsory specification standards/ requirements were developed for SUP products including plastic bags, complementing bans on designated SUPs. In the Republic of Korea, a Deposit-refund system is applied to beverage stores in Sejong and Jeju areas with more than 100 operating branches.

In Canada, the Canadian Council of Ministers of the Environment published "*Best Management Practices for Disposal Bans, Levies and Incentives for End-of-Life Plastics*" to guide implementation at subnational level, resulting in application of a range of tools, including fees and levies on single-use plastics, extended producer responsibility programs for packaging, and deposit-return programmes. In 2022, the council also published "*Guidance to Facilitate Consistent Extended Producer Responsibility Policies and Programs for Plastics*" to build greater consistency through, for example, common product categories and definitions for plastics.

In the Philippines, the EPR Act of 2022 provides incentives in the form of rewards (both monetary and non-monetary) and recognition for individuals, private organisations and entities, PROs and NGOs for undertaking innovative solutions in promoting the 3Rs with regard to SUP products. An incentive scheme is also operated based on the fund created by the Act targeting LGUs, private entities, PROs and NGOs for developing/executing effective solid waste management. In Norway, the creation of the Norwegian Retailers' Environment Fund (HMF) owned and operated by relevant private sector entities is financing national/international initiatives aimed at reducing and preventing pollution, and is reportedly translating into tangible reduction of SUP consumption on the ground.

Informational Measures

The EU is focusing on limiting the use of single-use plastic products by reducing consumption through awareness-raising measures and through introducing labeling requirements to inform consumers about the plastic content of products, disposal options that are to be avoided, and the harm done to nature if products are littered in the environment. Standardised labelling for degradable materials and products has also been implemented in China. Toolkits for awareness raising are made widely available in the Netherlands and Mexico.

Others

Australia's National Packaging Targets include the phase-out of problematic and unnecessary SUP packaging, thus driving systemic change with regards to how packaging is designed, collected, recovered and reprocessed.

In the US, the Federal Government announced its commitment in July 2024 to phase out federal procurement of single-use plastics from food service operations, events and packaging by 2027, and from all federal operations by 2035. Waste management including policies and measures on SUP are under state/local jurisdiction, and while currently there are no SUP policies at the national level, numerous states and local governments are reportedly implementing bans and fees applied to specific SUP products.

Singapore is complementing reduction of disposables at hawker centres with measures to encourage the development of public infrastructure such as common crockery and centralised dishwashing services and shared water dispensers.

3.1.5. Introduce Extended Producer Responsibility (EPR)

Overall trend

Eighteen countries (13 G20 members and five invited countries) responded positively to having implemented / are implementing actions at a national and/or subnational level under this category while policy responses are "in preparation" in one country (Australia).

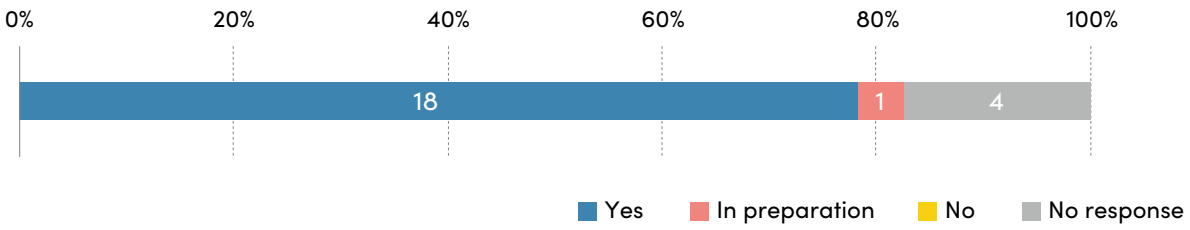


Figure 13: Status of prevalence of EPR schemes in countries

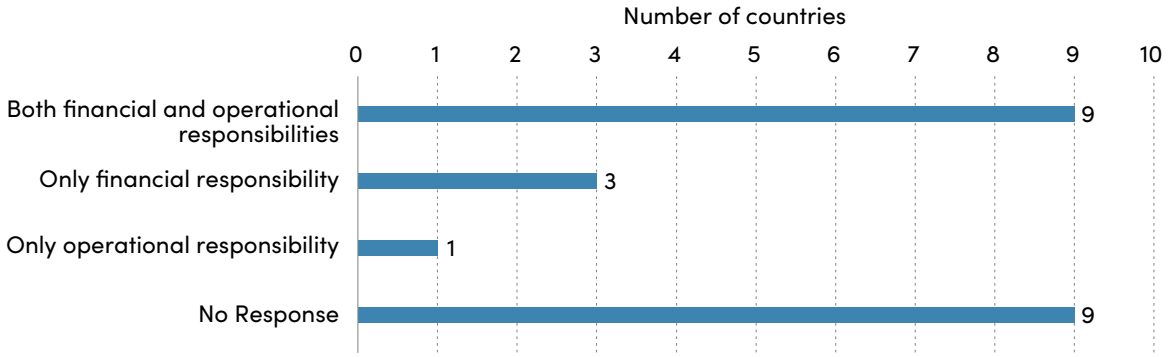


Figure 14: Nature of responsibilities under EPR schemes in countries

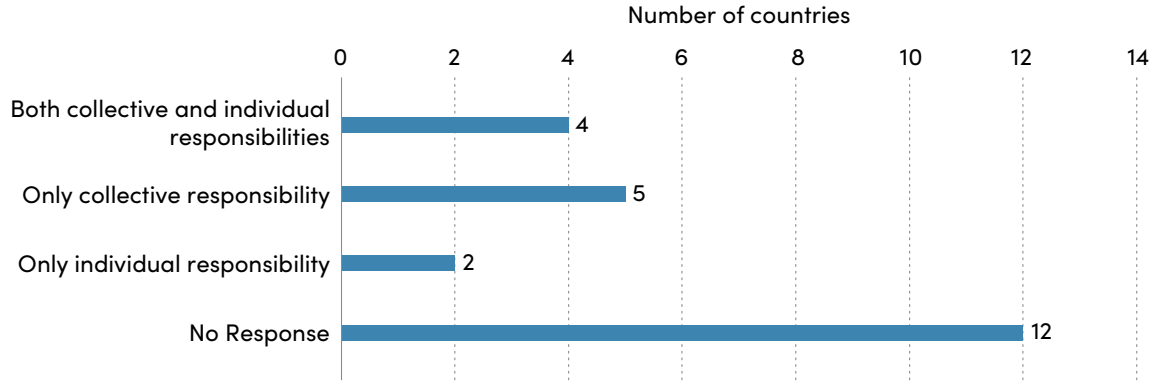


Figure 15: Mode of responsibilities under EPR schemes in countries

In the EU, the new Packaging and Packaging Waste Regulation sets clear obligations on extended producer responsibility, obliging producers to register in every Member State where they make packaging or packaged products available on the market for the first time. Member States are obliged to set up inter-connected producer registers. Accordingly, EU member states have introduced EPR schemes in their own respective jurisdictions under the guidance of the Waste Framework Directive. For instance, Italy has introduced an EPR scheme for textile products whose compliance is ensured both collectively through PRO (Producer Responsibility Organisations) and individually.

Norway has established schemes for Extended producer responsibility, several of which are relevant to plastic products such as discarded electrical and electronic products, scrapped vehicles, collection, and recycling of discarded tyres, as well as return systems for beverage containers and packaging waste. Meanwhile new EPR schemes targeting SUP products and plastic equipment used in fisheries and aquaculture are also being formulated.

In the Philippines, under the EPR Act, obligated enterprises that generate either rigid or flexible plastic packaging are required to recover or offset their respective plastic packaging footprint.

In Canada and the US, the EPR schemes are implemented at the subnational level based on their governance arrangements. In Canada, 12 out of 13 provinces and territories have in place regulated EPR schemes, while it is expected that over 90% of Canada's population will be covered by EPR for plastic packaging. In the US, there are 139 EPR laws at the subnational level including 33 states with EPR schemes across 19 product categories including those targeting packaging (five states including Maine, Oregon, California, Colorado and Minnesota).

In Canada, mainstreaming of EPR is in part driven by intergovernmental collaboration across governance tiers. The Canadian Council of Ministers of the Environment (CCME) composed of the Environmental Ministers of Federal, Provincial and Territorial governments made political commitments through nation-wide action plans for EPR (2009) and on Zero Plastic Waste (2019). Guidance to Facilitate Consistent EPR Policies and Programs for Plastics (2022) was also published by the body to guide implementation, harmonising material categories, definition, and performance standards for reuse and recycling, as well as presenting options to encourage innovations and reduce costs, and introducing standard monitoring and verification approaches. Meanwhile, Australian is considering options to introduce an EPR scheme, and France is exploring the creation of a new PRO for industrial and commercial packaging before 2025.

The products and materials targeted by EPR schemes in responding countries are set out below. (The table does not include respondents that have EPR schemes but did not specify products / materials)

Table 5: **Targeted products and materials of EPR schemes implemented in countries**

Country	Targeted Products and Materials
Spain	Domestic plastic packaging; phytosanitary and fertilizer products packaging; packaging for other agricultural products; packaging for drugs and medicines; single use industrial and commercial packaging; out of use tires
The Republic of Korea	4 types of packing materials (carton pack, metal can, glass bottle, plastic packages) 24 types of products (5 types of file products, batteries, tires, lubricant, fishing gear, etc.)
European Union	The Waste Framework Directive lays down rules for EPR. EPR is included in various EU legislation and applies to various domains, such as on single-use plastics and waste
Philippines	plastic packaging
Türkiye	Plastic carrier bags, Plastic packaging
Italy	(1) Textile products, (2) Packaging and packaging waste, (3) polyethylene goods and related waste, (4) End of life tires
Netherlands	Single use plastics. Drink cups, plastic bags, food packaging, sanitary products, drink packaging, tobacco products with filters, cotton buds, cutlery and plates, balloon sticks, fishing gear and straws
France	packaging, single-use sanitary textiles, textile products for clothing, footwear or household linen, tobacco products with filters, synthetic chewing gums, printed paper, graphic paper, construction products and materials, electrical and electronic equipment (batteries, contents and containers of chemical products), handicraft and garden products, sports and leisure goods, passenger cars, vans, two- and three-wheel motor vehicles and motor quadricycles, tires, mineral or synthetic lubricating or industrial oils, pleasure and sports boats, medicines, puncture-proof medical devices, furnishings, printed paper, graphic paper, construction products and materials
Norway	Discarded electrical and electronic products, scrapped vehicles collection, and recycling of discarded tyres, return systems for beverage containers and packaging waste. *Preparation in progress: SUP products, equipment used in commercial and recreational fisheries and aquaculture containing plastics
Germany	Packaging
UK	Packaging (EPR scheme being prepared)
South Africa	Electrical and electronics, lighting, paper, packaging and certain single-use product sectors
Singapore	Pre-packaged beverages in plastic and metal containers ranging from 150 milliliters to 3 liters
Brazil	Packaging in general, including plastics, paper and cardboard, glass, and metal packaging.

Nature of responsibility

In terms of the nature of responsibility of programme participants, nine countries reported both financial and operational responsibilities, while three countries only charged financial responsibility and one country charged only operational responsibility. Responsibilities are fulfilled collectively in countries such as the Republic of Korea, the Philippines, and Singapore, individually in Indonesia and the UK, and both collectively and individually in Germany, Italy and the Netherlands.

To give a few examples, in Türkiye, producers/importers of products have to pay Recovery Contribution Share fees, whose rates vary according to the type of product stipulated in the Environmental Law. The declaration (weight or quantity) and payment of the recycling contribution is made to the Ministry of Treasury and Finance. In the Netherlands, producers of packaging waste are made legally responsible for the collection, recycling and reuse of their packaging and for setting up a deposit return system, where implementation is moderated through producer organisation Verpact.

Modality

The majority of 13 countries instituted the EPR scheme as mandatory scheme while voluntary schemes are only reported by Indonesia where both mandatory and voluntary EPR schemes (product stewardship and CSR initiatives) are governed by the Ministry of Environment and Forestry Regulation which aims to encourage producers to take responsibility for the lifecycle of their products, especially in the post-consumer phrase.

The specific modalities of EPR schemes adopted in countries are summarised in the table below. Prices for fees, taxes and subsidies etc. are expressed in brackets where countries provided such information.

Table 6: Modality of EPR schemes implemented in countries

Modality	Countries where implemented
Product take-back	EU, France, Germany, Indonesia Philippines, Brazil
Advanced disposal fee	Italy, Korea ($0.026/kg~ $0.75/kg), Philippines, UK
Upstream Tax	France, Spain, Türkiye (60 kr./piece for Plastic carrier bags, 400 kr/kg for Plastic Packaging)
Downstream subsidy	Korea ($0.01/kg~$0.138/kg), the Netherlands
Deposit refund system	The Netherlands (€0.25 for large bottles, €0.15 for small bottles and cans), Germany (0.25 €/bottle or can), Singapore ($0.10 (SGD) deposit), UK
Drop-off points	France, the Netherlands, Spain, Brazil

Eco-modulation

Modulation of fees based on recyclability of products are not widely implemented, with France, Germany, Italy, Republic of Korea, and the Netherlands being a few examples from the 2024 survey.

Performance indicators

Majority of countries are relying on either collection rate or recycling rate, or alternatively for performance indicators to monitor effectiveness of the EPR schemes, while their definitions are rarely reported. Out of 18 countries with EPR schemes, only six countries (Brazil, Germany, Italy, Netherlands, Philippines and Singapore) have stated targets.

For example, collection rates are employed in Brazil (50% in 2040) and the Philippines (2023: 20%, 2024: 40%, 2025: 50%, 2026: 60%, 2027: 70%, 2028: 80% for plastic packaging). Singapore has a target collection rate (80% from 3rd year onwards for pre-packaged beverages in plastic and metal containers) which is defined by the "*total number of beverage containers collected by the scheme / total number of beverage containers put to market*".

A recycling rate is employed in the Republic of Korea (reported as 78%), and in Germany (currently 67.5%, targeting 63% for packaging)

Italy uses both collection rates and recycling rates as indicators, and sets targets for different EPR schemes targeting different products: both collection and recycling rates are used as indicators for textiles but without targets; a target recycling rate of 15% is set for polyethylene goods and related waste; and a target collection rate of 95% is set for end-of-life tyres.

3.1.6. Improve Waste Management and Recycling System

Twenty-two countries (16 G20 members and 6 invited countries)reported diverse actions to strengthen an integrated solid waste management (ISWM) system. These actions include formulation/implementation of relevant legislations, comprehensive national waste management action plans and strategies, national waste management programme, economic instruments (funds, grants and subsidies) for enhancing waste management/recycling infrastructure, and an information system for better management of waste statistics.

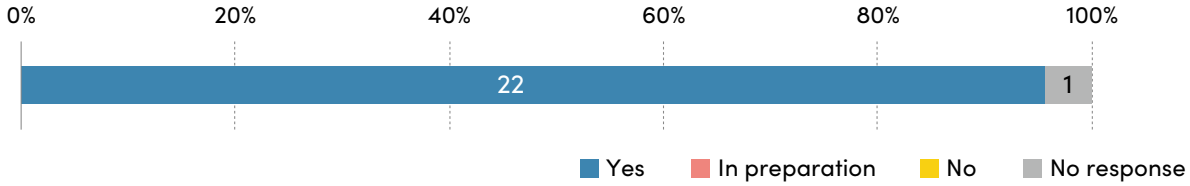


Figure 16: **Status of prevalence of measures to improve waste management and recycling system in countries**

Figure 17: **Policy tool for improving waste management and recycling system**

Legislation and National Programmes

Countries reported on their relevant legislations, action plans, strategies (10 countries) and national programmes (five countries) which generally promote waste management and recycling nationwide.

Saudi Arabia reported on its Executive Waste Management Regulations and implementation driven by several targets. The EU revised its Waste Framework Directive which requires Member States to identify products that are the main sources of littering, notably in the natural and marine environment, and take appropriate measures to prevent and reduce litter from such products. Norway updated its Waste Regulations (Chapter 10A) in May 2022 to establish mandatory sorting of biological and plastic waste (including packaging and agricultural waste), requiring municipalities to sort at least 70% of plastic waste from households by 2035.

Italy National Programme for Waste Management which guides and supports regional waste management planning to ensure compliance of planning criteria with the objectives of EU legislation. In the US, EPA implements its mandate under the Resource Conservation and Recovery Act (RCRA) through its Sustainable Materials Management Program which guides waste management, recycling and waste diversion programmes implemented at state and local levels. The Netherlands is implementing a national programme for municipalities and companies aiming to enhance source separation, thereby promoting waste diversion and resource circulation.

International Cooperation

A few countries also reported on actions to enhance resource efficiency and waste management globally through their own initiatives and/or international fora such as the G7, G20 and international conventions. Canada invested CA $100 million to support solutions for environmentally sound waste management and plastic pollution mitigation and remediation in developing countries. The UK worked with the British-Irish Council, OSPAR and the plastics industry to support the development of an international certification scheme to ensure that pellet loss is prevented and any accidental spills are cleaned up effectively. Further information on international collaboration by countries can be found in Chapter 4.

Fund/Grants

Canada reported on creation of the Ghost Gear Fund which supports projects focused on the responsible disposal of end-of-life and recovered fishing gear. The US Solid Waste Infrastructure for Recycling programme provides grants to implement the National Recycling Strategy to improve post-consumer materials management and infrastructure. Australia is investing AUD 250 million in new and upgraded recycling infrastructure through the Recycling Modernisation fund (RMF) which also attracts contributions from the states and territories and industry. The Netherlands operate a subsidy scheme for encouraging recycling technologies.

Information

Actions to strengthen waste statistics as a foundation for integrated solid waste management is also reported: Republic of Korea introduced an IT-based management system (Allbaro System: e-manifest system) which manages the entire process online, from discharge to handover to treatment, and efforts are underway to prevent blind spots in illegal dumping through the establishment of an automatic transmission system for on-site information from October 2022.

Other value chain interventions

The Netherlands is exploring national standardisation of waste collection and certification of sorting processes. Reform for strengthening source separation is also underway in France, where introduction of deposit schemes and creation of EPR scheme for packaging is being explored. Indonesia regulates the installment of new landfills by 2030. Singapore reported anti-littering and waterways clean-up measures to prevent land-based litter from being washed into the ocean.

3.1.7. Promoting Plastic Waste Reuse, Recycling and Recovery Opportunities

Eighteen countries (12 G20 members and six invited countries) responded positively to having implemented / are implementing actions under this category, of which 14 countries provided detailed explanations of their actions.

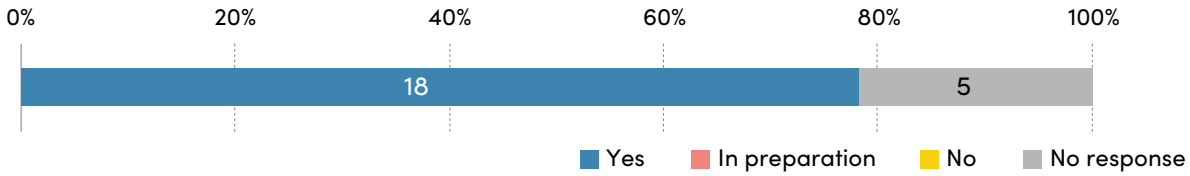


Figure 18: **Status of prevalence of measures to promote plastic waste reuse, recycling and recovery opportunities in countries**

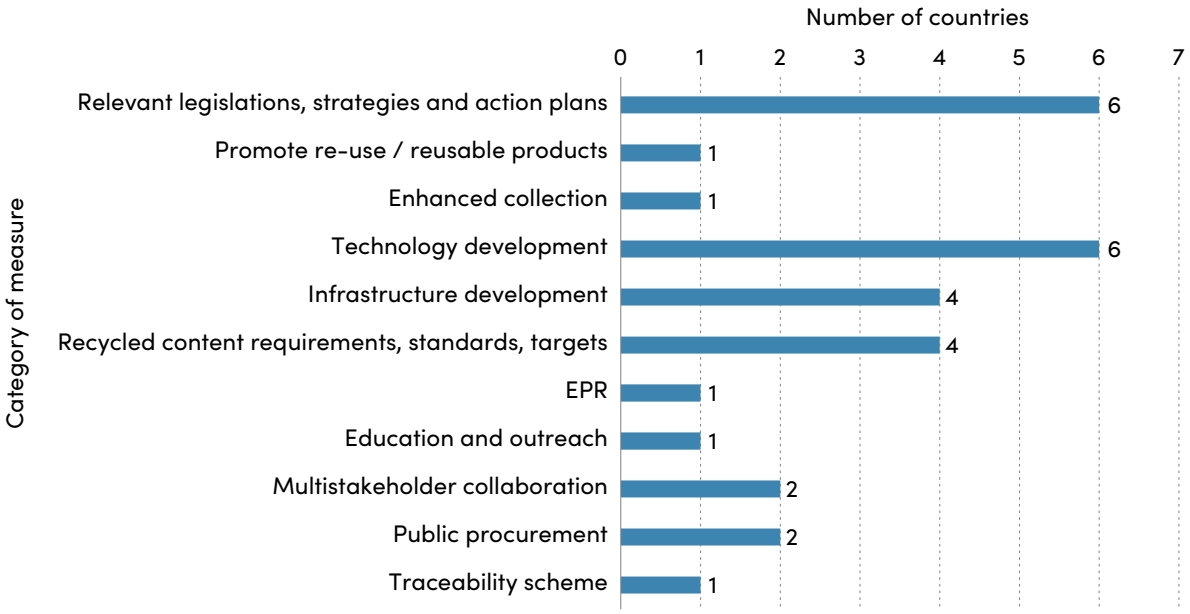


Figure 19: **Measures for promoting plastic waste reuse, recycling and recovery opportunities implemented in countries**

Legislations, action plans and strategies

Six countries shared relevant legislations, action plans and strategies promoting plastic waste reuse, recycling and recovery opportunities.

Canada's comprehensive agenda to reduce plastic waste and pollution and move towards a circular plastics economy includes efforts to promote value-retention processes, such as reuse, remanufacturing, repair and refurbishment. Meanwhile, the National Circular Economy Framework currently being prepared by the Government of Australia is expected to provide guidance on transitioning towards a circular economy, including the reuse and remanufacturing of secondary materials.

Funds, Grants, Subsidies

Many governments are utilising financial tools (funds, subsidies, etc.) with slight differences in terms of promoted actions, which include multi-stakeholder 3R initiatives, education and outreach, enhancing waste management /recycling infrastructure, and development of innovative technologies.

Canada's Ghost Gear Fund encourages the reuse and upcycling of end-of-life and recovered ghost gear for use in secondary products. Italy also provides funding in favour of highly innovative projects for the treatment and recycling of designated waste stream, which includes allocation of EUR 150 million to support the construction of new plants for recycling plastic waste including marine litter. The US Consumer Recycling Education and Outreach Grant provides USD 75 million for education and outreach programmes that engage and inform the public about residential/ community recycling programmes.

Ten out of 18 respondents to this question are providing support to technology and infrastructure development. The Government of the Republic of Korea is supporting the development of related technologies to improve recycling of marine waste by the private sector. Australia allocates AUD 60 million to the Plastic Technology (PT) stream of the Recycling Modernisation fund (RMF) in support of innovative and advanced recycling technologies targeting hard-to-recycle plastics. Singapore's 3R Fund also finances waste minimization and recycling projects with co-fund of up to 80% of qualifying costs (subject to a cap of $1 million per project per applicant).

Singapore is also exploring commercial application of chemical recycling or pyrolysis plants, while France is also launching a waste characterisation study to identify promising chemical recycling methodologies.

Other measures

Some countries are introducing schemes for rationalising plastic recycling. In December 2023, Australia released the National Framework for Recycled Content Traceability - a voluntary guideline for improving trust in recycled content, whereby content information throughout the supply chain is collected, shared and verified. Italy reported on its EPR and recycling content requirements which are also discussed in earlier chapters.

Australia introduced the Environmentally Sustainable Procurement Policy which came into effect in July 2024 with four high-impact categories: construction services; furniture, fittings and equipment; ICT goods; and textiles. China reported on a multitude of specific interventions including promotion of multi-stakeholder cooperation to address waste from e-commerce, establishing/improving recycling system for used agricultural films, and strengthening collection of plastic waste in transport sector. Germany is promoting reuse by introducing an obligation to offer reusable packaging alternatives for single-use plastic food packaging for take-away food and single-use beverage cups.

3.1.8. Install Capturing Trap/Filters on Drainages/Rivers

From the Great Bubble Barrier system installed in the port of Rotterdam to a new French rule for washing machines, 14 countries reported installing /taking actions to install waste capturing facilities, filters and trash booms to prevent plastics from flowing into the water environment.

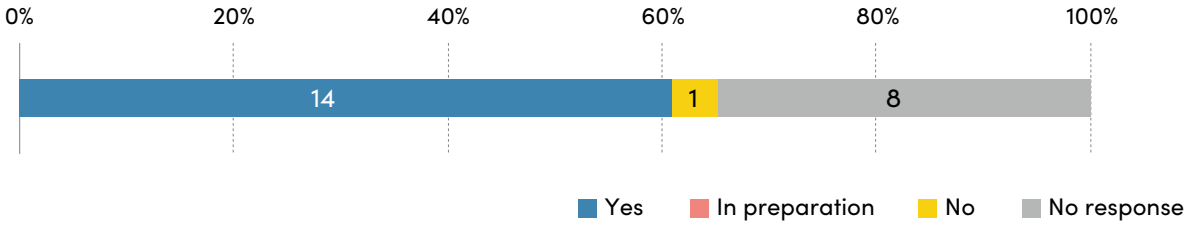


Figure 20: **Status of prevalence of capturing trap, filters and trash booms installed and relevant actions in countries**

In the Republic of Korea, the Management of Marine Debris and Contaminated Marine Sediment Act requires national and local agencies to implement measures to block marine inflow and prevent waste from entering the ocean via rivers and streams. In Türkiye, relevant institutions (municipalities, DG Water Hydraulics Affairs etc.) ensure the installation and maintenance of necessary equipment. In several Indonesian cities, official Point of Contacts (PoC) are designated to oversee the management of installed trash booms.

In China, litter interception and collection in rivers, ditches and sluice gates etc., as well as clean-up of accumulated waste is implemented, not only as countermeasures against marine litter but also as actions to meet flood control requirements. Japan installed dust collectors at several drainage pumping stations primarily to examine the amount of plastic waste leakage into aquatic environment.

As an intervention at source, France will introduce a new requirement from January 2025 whereby all new washing machines will have to include a microfiber filter to stop synthetic clothes from polluting the waterways.

NOAA Marine Debris Program Interception Technologies Grants in the US provide up to USD 11 million for grants in FY2024 and FY2025 for the installation, monitoring and maintenance of proven marine debris interception technologies that capture marine debris at or close to known marine debris sources or pathways. With an annual allocation of EUR 2 million, Italy has a three-year experimental programme that finances interventions for the collection of floating waste in rivers including installation of floating barriers. In Canada, federal, provincial and territorial governments, through the Canadian Council of Ministers of the Environment, are developing guidance to prevent plastic from entering the environment from known sources and leakage points such as stormwater.

3.1.9. Conduct Clean-Up Activities in Rivers/Wetlands/Beaches/Coats/ Coral Reefs/Sea Floor, Involving Local Communities

All 23 responding countries reported conducting clean-up activities led by various stakeholders, making it the most widely practiced intervention against marine plastic litter.

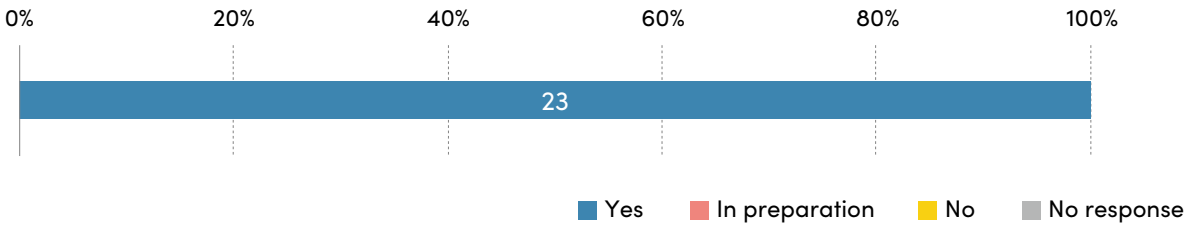


Figure 21: **Status of prevalence of clean-up activities in countries**

The Zero Waste Blue Movement is the primary programme addressing public awareness and cleanup campaigns related to marine litter in Türkiye. In the Republic of Korea, 230 organisations are participating in "Adopt-A-Beach" programmes as of 2024, led by the private sector, to clean beaches and coastal areas.

Every year since 2018, the EU, in partnership with the UN, organises an ocean-activism and awareness-raising campaign - #EUBeachCleanup – featuring beach, river banks and various clean-up events across the world. Japan allocated JPY 3.675 billion (FY2023) and JPY 1.452 billion (FY 2024) to support collection and treatment of marine litter by local governments and fishers respectively. Spain actively encourages and finances organised clean-up activities while some campaigns are also linked to a harmonised citizen science initiative for promoting waste data collection.

3.2 Product Specific Measures: ALDFG

Abandoned, lost, or discarded fishing gear (ALDFG), commonly referred to as ghost gear, pose a critical global challenge, threatening not only marine life and coastal communities, but also the sustainability of fisheries. Furthermore, their presence in the marine environment is a significant concern as a source of plastic pollution.

Eighteen respondents have installed some kind of countermeasures against ALDFG. A summary of responses is shown in Table 7.

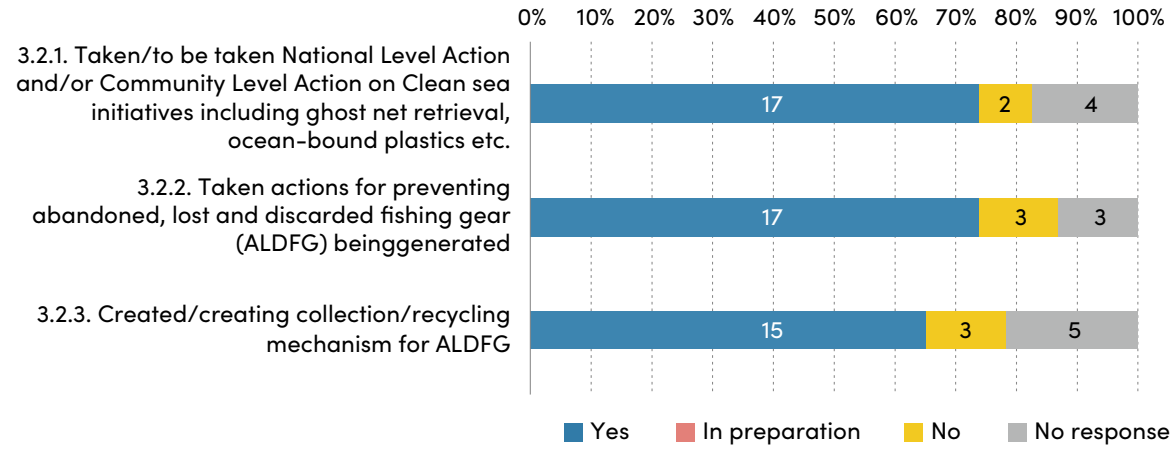


Figure 22: **Status of prevalence of measures against ALDFG among countries**

Most of the respondents have projects concerning gear retrieval or beach clean-ups. In addition, some countries, but not all, have a mandatory fishing gear loss reporting. Most of these reporting systems utilise a mobile app. The Republic of Korea is the only country which has a deposit system for fishing gear, thereby strongly incentivising fishers to return their used fishing gear.

The EU has requested its member states to standardise the circular design of fishing gear. The deadline to deliver the standard is set for 30 November 2024. The EU also has recently revised Regulation (EC) No 1224/2009 establishing a control system for ensuring compliance with the rules of the Common Fisheries Policy (2023/2842). The regulation requires European Union fishing vessels to have the equipment on board to retrieve lost gear and report any lost gear by the fishing vessel electronically in the logbook. It requires EU Member States to collect and record the information concerning lost gear and the measures undertaken, and report this information to the European Commission on request. The EU and its member states, and the UK support the "Fishing for litter" Program, which originated from the Netherlands. It is a voluntary, unpaid litter bycatch removal scheme by commercial fishers. In Italy, a minimum annual national collection rate of plastic-containing fishing gear waste for recycling is set at 15% by weight of the plastic-containing fishing gear placed on the national market during the respective reference years for the biennium 2024 and 2025. The Netherlands has implemented the Fisheries for a Clean Sea Program, as well as mandatory gear loss reporting and EPR on fishing gear.

The US has a combination of ALDFG measures including Global Ghost Gear Initiative Engagement (GGGI), United States Department of State Marine Debris Grants, NOAA Marine Debris Program - Marine Debris Prevention Grants, promoting action in international fora, as well as USAID Clean Cities, and Blue Ocean (CCBO) Grants. The US also supports reduction of ALDFG and recycling of used fishing gear in the Caribbean region and Peru through funding and international development aid.

Canada launched the Ghost Gear Program which is a comprehensive programme to address the issue of ALDFG. As a part of the Ghost Gear Program, the Ghost Gear Fund was launched in 2022, and over CAN$58.3M has been invested in 143 projects. Canada also implemented mandatory lost gear reporting for all commercial fisheries in 2020.

Australia's Ghost Nets Initiative is a AU$14.8 million programme focused on Australia's Northern coastline and the Gulf of Carpentaria which is a hotspot for marine debris coming from the Arafura and Timor Seas. It provides funding for gear retrievals and beach clean-ups, innovation on fishing gear recycling, and awareness-raising.

Türkiye introduced the "Ghost Net Project" in 2014, under which lost fishing gear is removed from the environment and recycled. Türkiye also has mandatory marking of fishing gear, regular training for fishers, and an awareness-raising programme.

With the aid of the World Bank, Mexico has developed a manual to prevent and mitigate ALDFG, targeting small-scale fisheries[7].

7 With the support of the World Bank's PROBLUE Fund, 'Manual for Preventing, Mitigating, and Correcting the Damage Caused by Ghost Fishing Gear in Mexico,' was prepared to be accessible to a wide range of audiences, with a particular focus on small-scale fishers. The publication of this Manual also fulfills one of Mexico's commitments made at the Second United Nations Ocean Conference (UNOC), held in Lisbon, Portugal, from June 27 to July 1, 2022.

Table 7: Measures against ALDFG by country

Countries	ALDFG Retrieval	Prevention	Collection/Recycling
G20 Members			
Australia	Yes	Yes	Yes
	Ghost Nets Initiative	Ghost Nets Initiative	Ghost Nets Initiative
Brazil	No	No	No
Canada	Yes	Yes	Yes
	Ghost Gear Program	Mandatory reporting of lost fishing gear	Targeted project funding on collection/recycling fishing gear
	Canada-wide Action Plan on Zero Plastic Waste	Conditioned fishing license	
China	Yes	Yes	Yes
	Removal of illegal aquaculture facilities	Strengthen the management of agricultural and fishery waste	Standardise the recycling and disposal of used fishing nets and gears.
EU	Yes	Yes	Yes
	"Fishing for Litter" Program	EU Regulation (EC) No 1224/2009 establishing a control system for ensuring compliance with the rules of the Common Fisheries Policy (2023/2842)	Commission Implementing Decision of 10.2.2021 on a standardisation request to the European Committee for Standardisation as regards circular design of fishing gear in support of Directive (EU) 2019/904 *In preparation* CEN/TC 466 standard "Circularity and Recyclability of fishing gear and aquaculture equipment" (publication planned in November 2024)
France	Yes	Yes	Yes
	"Fishing for Litter" Program	INdIGO project (development of prototype of biodegradable fishing gear)	Implementing the collection and recycling of fishing gears and aquaculture waste in link with the European directive
		Awareness raising actions	EPR system for used plastic fishing gear (01/01/2025)
Germany	Yes	Yes	Yes
	Detection (by specific sonar and digital marking) and verification (by divers) of ALDFG	Design modification of fishing net to prevent loss of dolly ropes	Participation to MARELITT Baltic project
	Retrieval campaigns in the Baltic Sea	Education module applied in training of fishermen	Recommendations for the disposal of fishing gear
	Suitability test of sonar in the North Sea	Pilot monitoring of lost angling gear and recommendations for measures to prevent litter inputs from recreational fisheries	
	Fishing for litter concept implemented in around 20 harbors of the North- and Baltic Sea	Development of the Ghostnet. zero APP	

Countries	ALDFG Retrieval	Prevention	Collection/Recycling
G20 Members			
Indonesia	Yes	Yes	Yes
Italy	Not Available	Yes	Yes
		Identification and possible removal of fishing and aquaculture gear abandoned or lost at sea	Decree 27 October 2023 establishes a minimum annual national collection rate of plastic-containing fishing gear waste for recycling is set at 15% by weight of the plastic-containing fishing gear
Japan	Yes	Yes	Yes
	Encouraging fishers to retrieve marine debris	Guidelines on fishery-related waste management	Subsidies for the promotion of recycling of marine plastic wastes in fisheries
Mexico	Yes	Yes	Yes
	North American Net Collection Initiative (NANCI) project. Transboundary initiative to prevent ghost gear in the coastal waters of the western United States, Mexico, and Canada in partnership with local non-profit organizations	A manual was prepared with the support of the PROBLUE initiative of the World Bank and aims to inform people who are dedicated to small-scale fishing about the causes and risks of ghost fishing, as well as the actions they can take.	Global Ghost Gear Initiative (GGGI) active engagement
Saudi Arabia	No	No	No
South Africa	Not Available	Not Available	Not Available
Republic of Korea	Yes	Yes	Yes
	Management of Marine Garbage and Contaminated Marine Sediment Act mandates national and local government to collect discarded fishing gear		A deposit system for fishing gear and buoys was introduced in 2022 and implemented starting January 2024. Initially applied to fish traps (excluding eel traps) from January 2024, the system is scheduled to extend to gillnets and fishing buoys in 2026.
	National Federation of Fisheries Cooperatives, a fishermen's organisation, is conducting a fishing gear collection project		
Türkiye	Yes	Yes	Yes
	Under the "Ghost Net Project", a total of 997 locations, 1.200.000 meters of gear and 53.000 other fishing tools have been removed since 2014	Mandatory fishing gear marking	Ministry of Environment, Urbanization, and Climate Change supports initiatives aimed at recycling ALDFG.

Countries	ALDFG Retrieval	Prevention	Collection/Recycling
G20 Members			
Türkiye		Regular training for fishers, citizens, relevant official institutions/organisations and NGOs.	
		Awareness-raising activities in many schools	
United Kingdom	Yes	Yes	Yes
	UK supports Fishing for Litter Program	Collaboration with Global Ghost Gear Initiative (GGGI)	Collaboration with Odyssey Innovation on pilot recycling scheme for fishing gear
		The INdIGO project (Innovative Fishing Gear for Oceans) FAO Voluntary Guidelines for the Marking of Fishing Gear	
United States of America	Yes	Yes	Yes
	NOAA Marine Debris Program Removal Grants	Global Ghost Gear Initiative Engagement (GGGI) United States Department of State Marine Debris Grants NOAA Marine Debris Program - Marine Debris Prevention Grants Promoting Action in international fora USAID Clean Cities, Blue Ocean (CCBO) Grants	United States Department of State Marine Debris Grants NOAA Marine Debris Prevention and Removal Grants
Invited / Other Countries			
Myanmar	No	No	No
Netherlands	Yes	Yes	Yes
	Fishing For Litter programme	Fisheries for a Clean Sea Programme:	Implementation of EPR scheme for fishing gear
	Duik de Noordzee Schoon and Ghost Diving	Collaboration with Global Ghost Gear Initiative (GGGI)	
		Mandatory reporting of lost fishing gear	
Norway	Yes	Yes	Yes
	Annual clean-up surveys ALDFG since 1980s	Created national action plan for reducing marine litter from commercial and recreational fisheries and aquaculture	Created national action plan for reducing marine litter from commercial and recreational fisheries and aquaculture
	Fishing For Litter scheme	Mandatory gear loss reporting system	
Philippines	Not Available	Not Available	Not Available

Countries	ALDFG Retrieval	Prevention	Collection/Recycling
Singapore	Yes	Yes	Not Available
		Licensing control to small-scale fishers Education to recreational fishers	
Spain	Yes	No	No
	General Criteria for the Management of Abandoned, Lost, or Discarded Fishing Gear (ALDFG)		

3.3 Partnerships and Innovation

The country responses show that of the responses received, 11 countries have a multi-stakeholder approach that includes working with business and society on solutions to reduce marine plastics. Eight responses pointed to raising awareness of marine plastic reduction and circular economy issues among different partners.

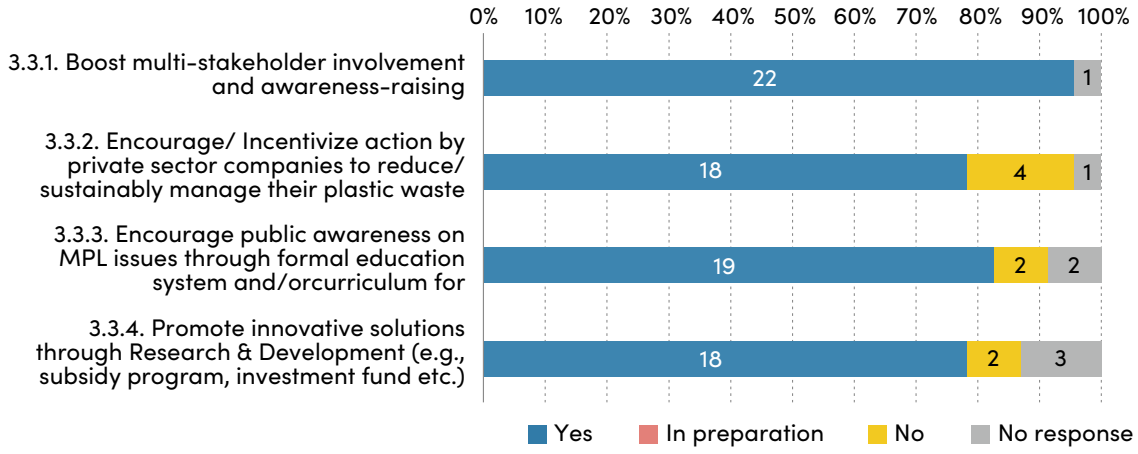


Figure 23: **Partnership and innovation measures among countries**

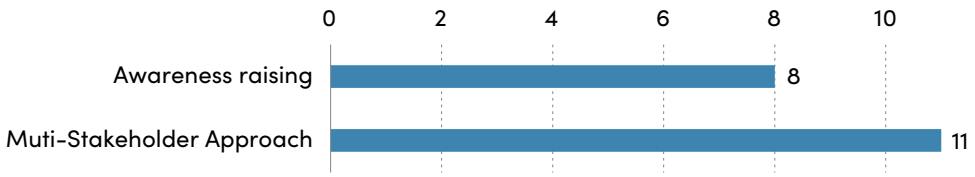


Figure 24: **Partnership strategies**

The preferred model for governments to work with the private sector is to encourage them to make voluntary commitments, with twelve countries taking this approach. Specific measures, such as the promotion of business models and green products, received two responses each. Three countries also mentioned providing financial support to businesses.

Figure 25: **Modes of incentives to private sector**

Governments are active in raising public awareness, with study modules in school education and for professionals being a popular means of engaging with the public, receiving nine responses. Clean-up campaigns were mentioned by two countries. Seven countries mentioned other public awareness activities.

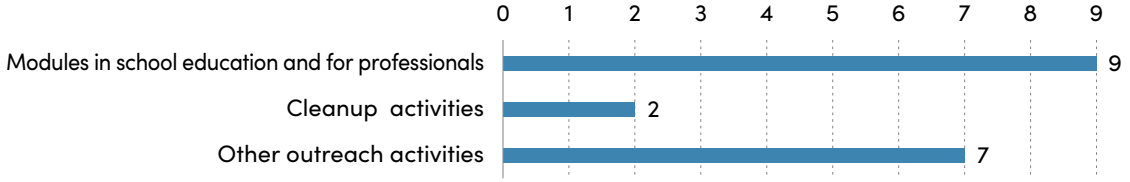


Figure 26: **Modes of encouraging public awareness**

Governments are actively working to improve knowledge of the state of marine plastic pollution in their countries - research on plastics in rivers and research on coasts and oceans was reported by two and five countries respectively. R&D projects on alternatives and recycling were reported by nine countries as solutions to reduce marine plastics.

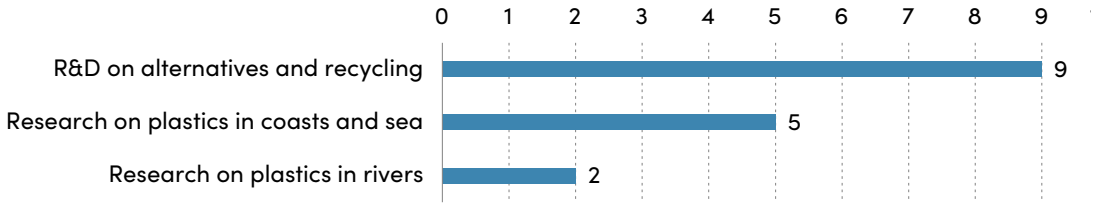


Figure 27: **Modes of promoting of innovative solutions**

3.4 Monitoring, Data Management, Understanding Flow of Plastic/MPL

Figure 28 shows the summary of responses from the countries.

China, Indonesia, Italy, Japan, US the Netherlands, and Singapore have conducted Life Cycle Assessment (LCA) of plastic. Australia has conducted LCA for certain plastic products. In Norway, LCA is common for certain products, but as an initiative by the private sector and not by public authorities. Germany pointed out some major challenges in the form of insufficient data, inadequate methodologies, and a lack of robust characterization models.

South Africa is implementing a project to identify material substitution opportunities for identified product(s) with a Life Cycle Sustainability Assessment (LCSA). It is a component of a project entitled "Supporting the transition from conventional plastics to more environmentally sustainable

alternatives", funded by the Government of Japan and the United Nations Industrial Development Organization (UNIDO) and carried out in collaboration with the Council on Scientific and Industrial Research (CSIR) and the University of Witwatersrand (WITS). The overall purpose of the project is to support South Africa's transition from conventional plastics to more environmentally sustainable alternatives. Its ultimate goal is to reduce the amount of plastic leaking into the environment.

A slightly fewer number of countries have conducted Material Flow Analysis (MFL). Most of these studies are published in reports or scientific journals that are available online.

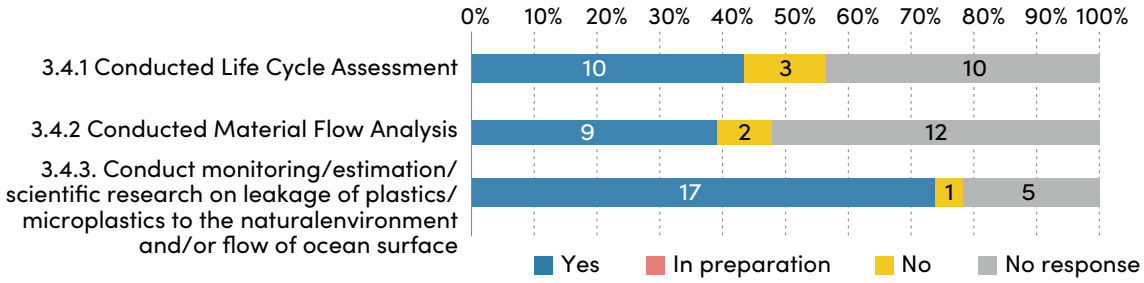


Figure 28: **Responses from the countries on LCA and MFL**

As for Question 3.4.3 regarding environmental monitoring of plastic, 11 countries out of 23 respondents had established a monitoring/reporting programme/mechanism (Figure 29). There are various types of monitoring projects among the respondents, including the air, coast, seawater, freshwater, ocean floor and surface, sediment, biota (bivalves, seabirds, turtles, etc.), and river input to the ocean. Some countries have explored the possibility of applying new technologies such as drones, remote sensing and artificial intelligence (AI).

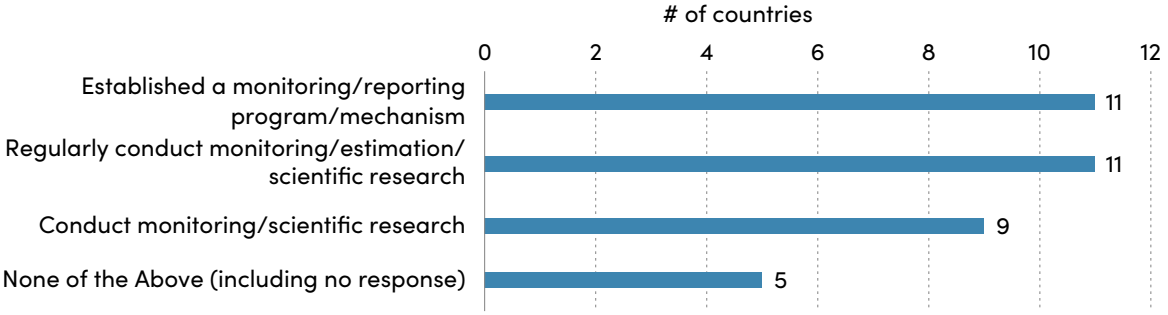


Figure 29: **Responses from the countries on monitoring programmes**

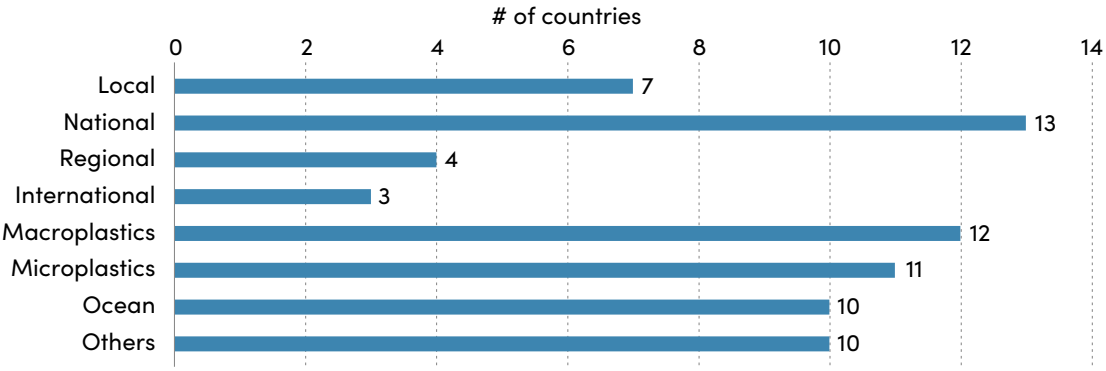


Figure 30: **Responses from countries on components of monitoring**

4 International Collaboration

4.1 Challenges (Countries)

Country survey also inquired on the challenges faced by countries in addressing the issue of marine plastic litters, through multiple choices and open-ended questions for inquiring details (specific challenges) for the selected options.

For the multiple-choice question, recycling system improvement was identified as a challenge the most with 15 countries, followed by data collection on waste and marine plastic litter by 12 and 14 countries respectively. Lack of local capacity, financial incentives for waste treatment and technology development were mentioned by nine, eight, and eight countries respectively.

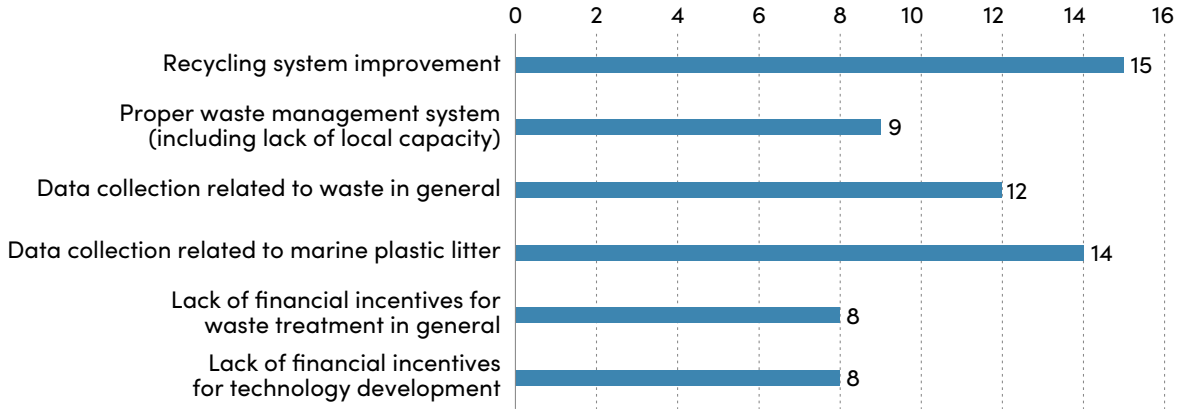


Figure 31: Challenges faced by countries

Some countries also provided details of specific challenges for each option selected as responses to open-ended questions. Overall trend is summarised below.

Recycling System Improvements

Nearly half of the countries (all high-income countries) which selected "Recycling System Improvement" raised **market for recycled plastics** to be the issue of concern, while developing countries tended to raise **technology and infrastructure** as prevailing factors.

Germany reported that while a plastic recycling quota for plastic packaging introduced in the country boosted plastic recycling, the **demand for recycled material** did not develop in the same way, indicating the need for further intervention such as minimum recycled content requirements to help creating secondary materials market. Similar points were also reported by Indonesia, the Nether lands, Spain and the US, while issues of weak price competitiveness of secondary materials due to higher operating costs of recycling (Spain), influence of price volatility of raw materials (Spain), low geographical concentration of materials which hinders economic viability of reprocessing for some materials (Australia), and the lack of recycling industry (Indonesia) were also raised, which can translate into lack of recycling capacity for certain areas/materials.

Saudi Arabia reported the issue of **transferring innovative and advanced recycling technologies** to be a key challenge and indicated the need to specify arrangements for capacity-building, technical assistance and technology transfer. South Africa indicated **lack of comprehensive recycling services and infrastructure** and the need for immediate action in the face of decreasing capacity of landfill sites in the country. Lack of **standardization of effective collection methodologies** among local governments (the Netherlands) and **consumer education and outreach** – communicating consumers to understand what materials can be recycled, how they can be recycled, and where to recycle – are also reported as challenges.

On a systemic level, the US points out the lack of **communication between the manufacturers of new materials and the recycling industry** is resulting in the recycling infrastructure not being able to meet the changing waste stream; and the absence of **consistent methodologies / standardised metrics** to measure recycling system performance, which is critical in setting goals and tracking progress at systems level.

Proper Waste Management System

Five countries (Brazil, Canada, Indonesia, South Africa and the Netherlands) provided responses. In Indonesia, lack of waste collection infrastructure, poor management of landfill, while South Africa also raised lack of collection service in the face of rapidly growing population to the key challenge.

Canada reported a **lack of recycling facilities** for end-of-life fishing gear is posing a challenge to the management of ALDFGs.

Data Collection (waste in general and marine plastic litter)

All respondents have a waste management information system whose data are maintained and regularly updated, while several challenges were reported including difficulty of data sharing due to confidentiality and hence aggregation at national level (Australia), lack of transparency of reported data (the Netherlands and South Africa), irregular reporting (Indonesia), data silo (fragmentation of data produced by different sources), un harmonised and incomplete data (South Africa), and lack of standardization of data system including data collection format, definitions,

and metrics for measuring Key Performance Indicators (South Africa) which strongly affect data integrity and hinders the quality of data driven policy making.

Countries also reported on the challenges of data management for marine plastic litter, which tended to be methodological in nature.

On technical aspect, reported challenges include: number of marine litter monitoring points (China) and frequency of data sampling (China, US), reliability of data (South Africa, the Netherlands), different data sources (South Africa), monitoring of seafloor litters (the Netherlands), modeling (the Netherlands).

Compilation of historical data based on consistent sampling methodologies is an essential foundation of policy making. Germany, Japan, the Netherlands and the US mentioned harmonization / standardization of sampling methodology as a challenge, while two ongoing efforts to address the issue are shared: development of harmonised monitoring methodologies led by the European Technical Group Marine Litter (TGML) and OSPAR and recent launch of global database (AOMI) based on harmonised guideline led by Japan.

On implementation and compliance aspects, Indonesia reported a general lack of availability of data on MPL from aquaculture, fishery and marine transport sectors. China considers capacity building for coastal cities to be a challenge. Canada where a mandatory reporting scheme targeting commercial fishing industry members is established in 2020 for lost fishing gears, reported that low compliance on reporting obligation still exists in certain areas.

Lack of Financial Incentives (waste treatment in general and technology development

Countries reported on challenges of optimising economic incentives, technology development and infrastructure development.

In Germany, the implementation of EPR scheme supported by recycling quote is facing a difficulty with the difference of user fees between EPR-targeted materials (free) and mixed waste (fee charged) is causing some residents to dispose the mixed waste to end up in EPR-facilitated recyclables stream, deteriorating quality of collected recyclables.

Lack of funding for development, uptake and trial of technologies preventing ALDFG (Canada), infrastructure development at municipal level (Saudi Arabia), and daily processing operation (Indonesia). In Indonesia, inadequate cost recovery through user fees and high operating cost of waste management services are resulting in unstable waste management expenditure.

Others

Apart from categories presented above, Mexico reported non-standardised regulatory frameworks, low institutional capacity; pressure from producers; promoting 3R in tourism sector; and regulating/enforcing/motivating informal sector to be the major challenges in promoting actions against MPL.

4.2 International Cooperation (Countries)

Nineteen countries are involved in international cooperation projects. In terms of regional focus, seven countries mentioned initiatives in Africa and in Latin America and Caribbean followed by six for South and Southeast Asia, three for Oceania, two for both Middle East and North Africa and Central Asia.

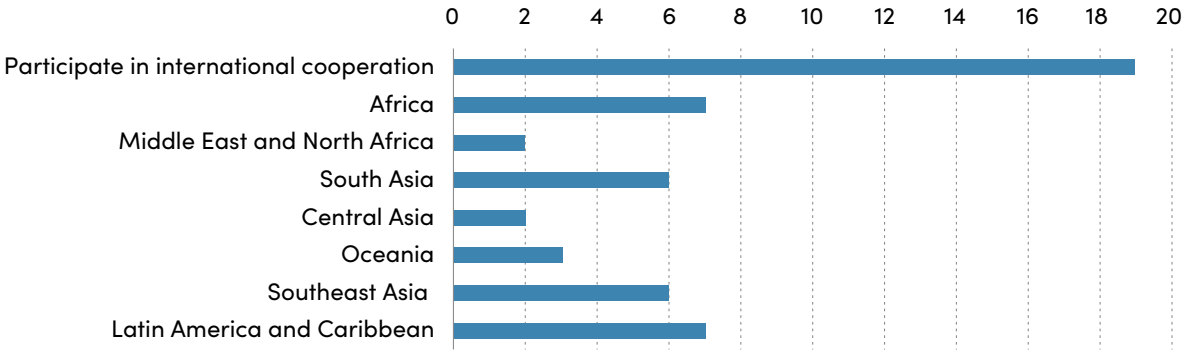


Figure 32: International projects participation and target region

5 Best Practices

Seventeen and nine countries respectively reported on national and local/community initiatives. Ten and eight countries respectively reported on private sector and international initiatives.

The reported cases ranged from monitoring of macro/microplastics at national scale, private sector initiative for reduction of SUP, to introduction of fishing gear and buoy deposit system, and global action to promote plastic alternatives. The detailed information submitted by countries can be accessed at https://g20mpl.org/partners.

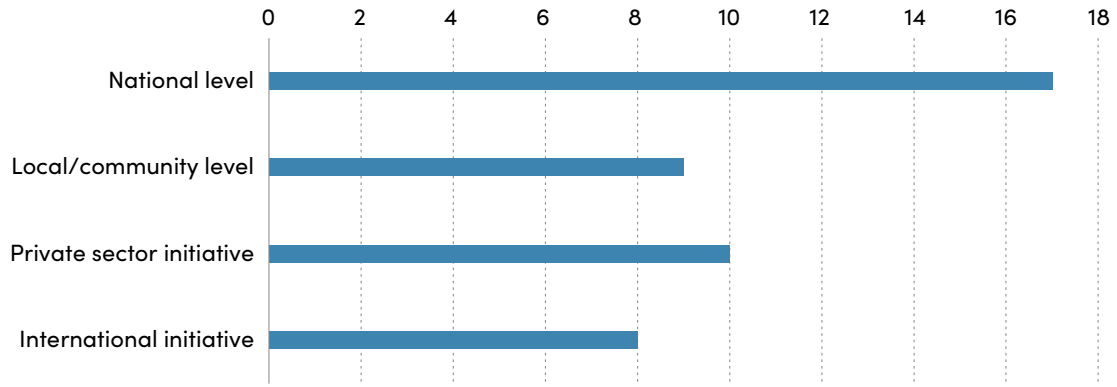
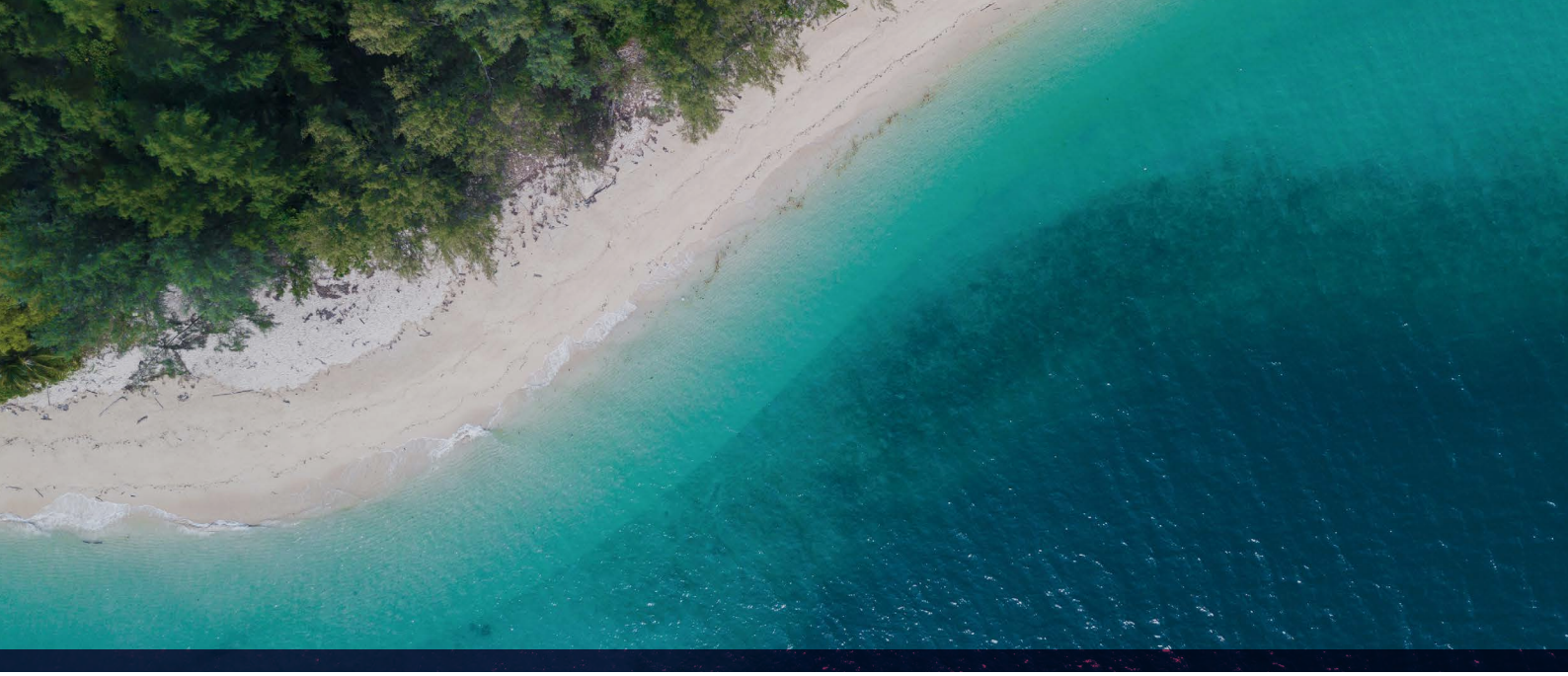


Figure 33: Best practices scale: from local to global

Section B: International Organisations and NGOs



6 Actions and Initiatives by International Organisations and NGOs

A survey was also conducted targeting International Organisations and NGOs with the aim of understanding the trend of development assistance in MPL abatement and areas closely relevant to the topic. The questionnaire was developed in two sections: the first section inquired the current strategic focus of the responding organization's activities for MPL abatement in terms of geography, partners, sectors, approach and theme, while the second section asked the details of individual projects implemented by the organization. All questions were multiple choice followed by a space for brief description. Responses were obtained from seven organisations are summarised below.

Table 8: List of responding organisations

Organisations	Abbreviations
Economic Research Institute for ASEAN and East Asia	ERIA
Food and Agriculture Organization	FAO
Global Environment Fund	GEF
Organisation for Economic Co-operation and Development	OECD
United Nations Environment Programme	UNEP
United Nations Human Settlements Programme	UN-Habitat
World Economic Forum (GPAP-Global Plastic Action Partnership)	WEF/GPAP

6.1 Strategic Focus

Five out of the seven organisations noted that they have a strategic focus on marine plastic abatement.

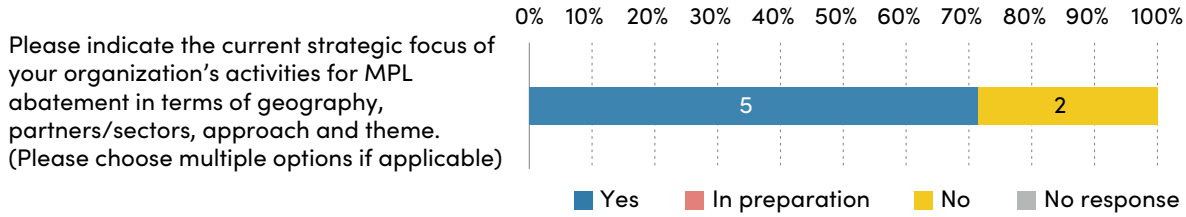


Figure 34: **Strategic focus of the organisation**

Six of the seven organisations reported a global focus, with three organisations working on Africa and South East Asia, two organisations working on South Asia and Latin America and Caribbean, and one organization working on Middle East and North Africa, Central Asia and Oceania.

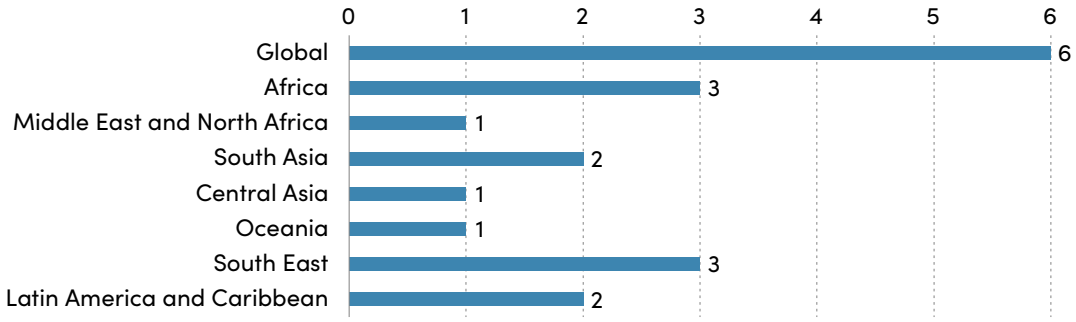


Figure 35: **Geographical focus of activities/projects**

All organisations work with national governments and are the most partners. Four organisations work with city governments, businesses and educational institutions. Three and two organisation work with civil society organisations (CSOs) and others respectively.

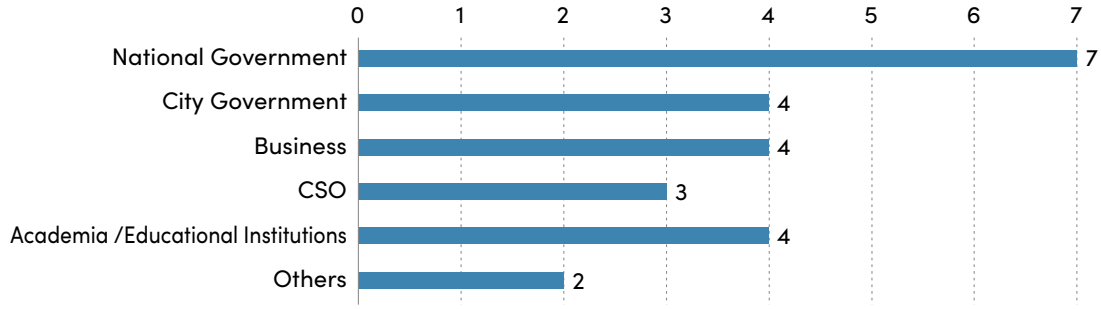


Figure 36: **Project partners**

Six organisations work on knowledge development and knowledge integration at global and regional levels. The other main focus is on supporting stakeholders with resources, with five institutions indicating support for law/regulation/action plans/indicators development and capacity development. Four organisations work on financing issues.

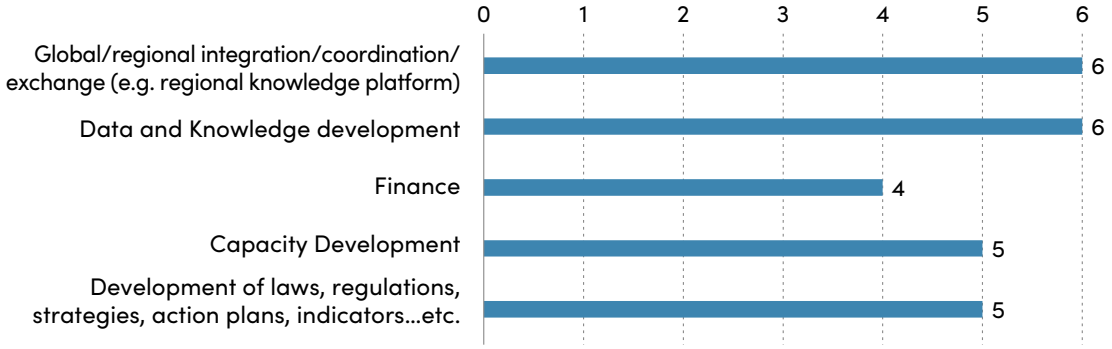


Figure 37: **Broad thematic focus**

Based on the broad thematic focus, the most popular workstreams, with six organisations working on them, are the work on public awareness, waste management systems and circular business models (servitisation). This is followed by monitoring the policy status, promoting private sector engagement/actions, litter prevention and EPR (five organizations), and sustainable/circular product design and monitoring/estimating plastic leakage (four organizations). Three organisations worked on recycling system. Two organisations also worked on scientific research and technology development. Finally, one organization worked on removal of plastic litter and others.

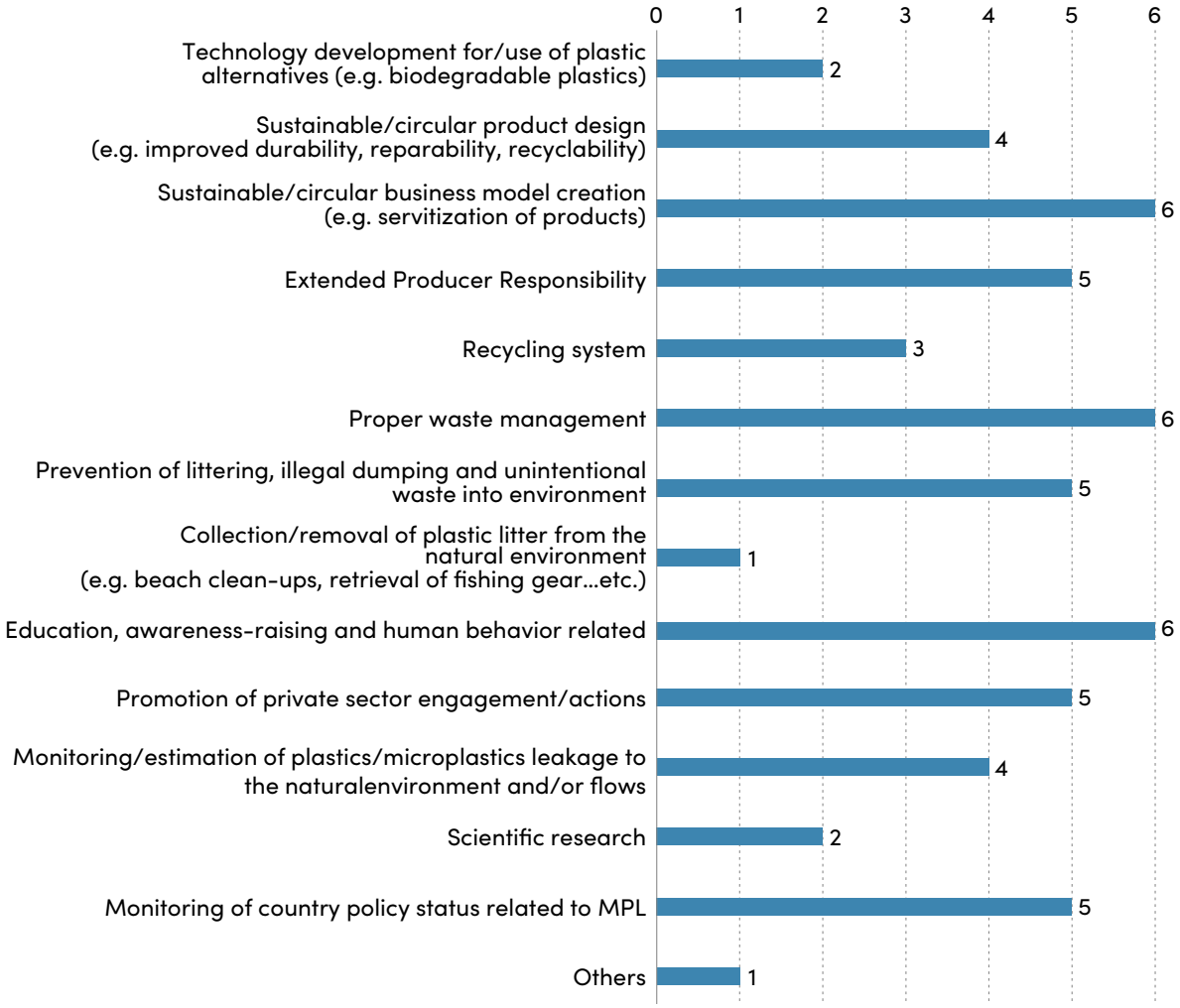


Figure 38: **Specific thematic focus**

Organisations were asked what specific activities they were undertaking to address the challenges. Five organisations are working on the "Lack of public awareness" and "Data collection related to waste in general". Four organisations are working on "Data collection related to marine plastic litter" and "Proper waste management system". Three organisations are working on "Recycling system improvement", while two are also working on lack of financial incentives for waste treatment in general and for technology development.

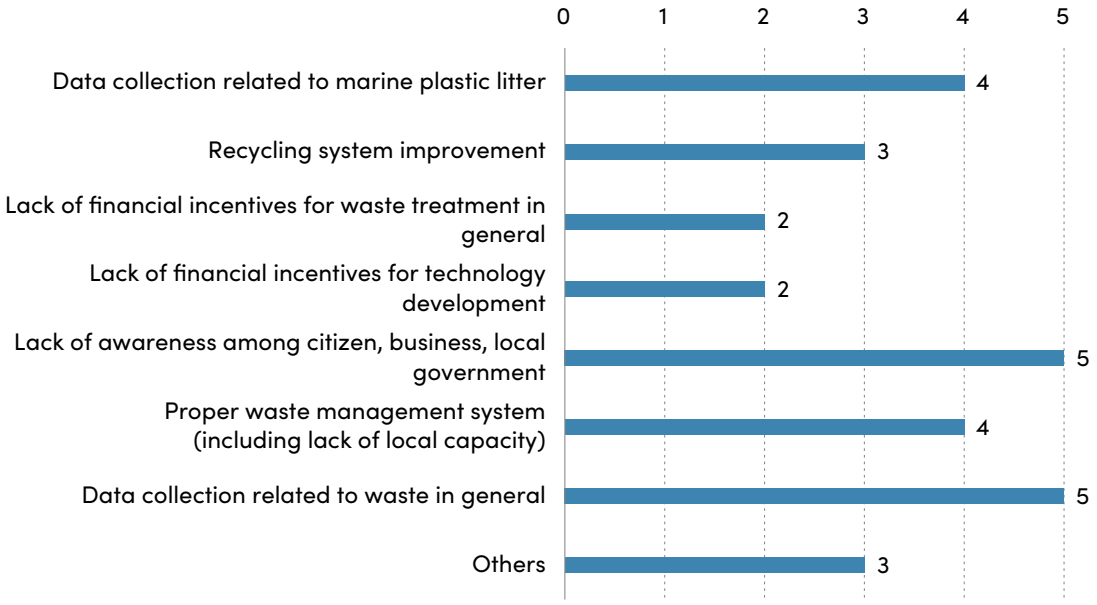


Figure 39: Specific activities to address challenges

Annex I. Links to Country Information

The unfiltered responses from all countries as received can be viewed in the G20 Osaka Blue Ocean Vision website and are accessible from the following QR codes. This is compiled with the intent of ready reference and further readings on the chapters covered in the G20 Report on Actions against Marine Plastic Litter (6th Edition):

G20 Countries					
Australia	Brazil	Canada	China	European Union	France
Germany	India	Indonesia	Italy	Japan	Mexico
Saudi Arabia	South Africa	The Republic of Korea	Türkiye	United Kingdom	United States of America
Invited Countries					
Myanmar	Netherlands	Norway	Philippines	Singapore	Spain

Annex II. Survey Templates

<Implementation Framework for Actions on Marine Plastic Litter> Template for the 6th Information-Sharing Report

FOR: Countries

Thank you very much for taking your time to participate this country survey.

Please fill out the form and send it to g20mpl@iges.or.jp **by 23 August 2024**, copying ecswg@g20.gov.br and tomoko_ichikawa@env.go.jp.

We also welcome any submission beyond the deadline which will be included in the final edition of the report planned to be published within a few months from the launch of the first edition of the report timed with the G20 Environment Ministers Meeting in October 2024. We request those who plan to submit such delayed submission to first contact the secretariat (g20mpl@iges.or.jp) to ensure inclusion in the final report.

For any questions/ clarifications, please write to the email above.
We look forward to receiving your response.

Notes

* Please copy and paste the entry field (example: "Name (Year)" and "Brief Description") if you have multiple responses for each question.
* For each action reported, please...
  - clarify the scale at which the activity is implemented (national, provincial, local...etc.), and the leading implementing actor(s): national government, local government, private sector...etc. to the best possible extent.
  - be mindful of the different policy approaches employed.
* For "brief description", please describe what you think are unique features, in addition to general description of your country actions.

1. Name of country/Contacts:

Name of Country:

National Focal Point *(Please specify name and email address)*
Name:

Position:

Division:

Organization:

Email:

2. Policy framework:

2.1 National Action Plan

Do you have a National Action Plan or strategy on MPL? Please choose one.

☐ Yes

Please provide the name of your action plan or strategy with a brief description here:

Name (Year):

Brief description:

☐ In preparation

Please provide the name of your action plan or strategy in preparation with a brief description here:

Name:

Brief description:

☐ No

2.2 Legal framework

Do you have legislation on MPL? (including waste management and circular economy)

☐ Yes

Please list your country's legislation including name and brief description here:

Name (Year):

Brief description:

☐ In preparation

Please list your country's legislation in preparation including name and brief description here:
Name:

Brief description:

☐ No

2.3 Indicators and/or Targets

Do you have any MPL-specific indicators, targets or data collection framework in your country? (Please clarify definitions of indicators/targets where possible: example – "recycling rate" = "amount of waste (Mt) recycled / amount of waste (Mt) collected".)

☐ Yes / ☐ No / ☐ In Preparation (Provide details below if Yes/In-progress)

☐ **Plastic recycling:**

Indicators:

Targets (if any):

☐ **Plastic use reduction:**

Indicators:

Targets (if any):

☐ **Plastic to alternatives, such as glass, paper or bioplastics:**

Indicators:

Targets (if any):

☐ **Plastic leakage:**

Indicators:

Targets (if any):

☐ Beach Cleanup:

Indicators:

Targets (if any):

☐ Ghost Fishing Gear recovery:

Indicators:

Targets (if any):

☐ Others (Please specify:)

Indicators:

Targets (if any):

Brief description:

2.4 Technical Standards, Guidelines and Methodologies

Do you have technical standards, guidelines, methodologies that regulate how plastic products and/or waste, including leakage to the environment, are produced, managed and/or monitored? (Such as MFA guideline, manufacturing standard, monitoring guidelines of marine litters/plastics in the environment...etc.) Please specify the names of the publication.

Topics

☐ production / manufacturing ☐ waste management / recycling ☐ leakage monitoring

☐ MFA ☐ Others:

Brief Description:

3. Measures:

Please choose one to indicate whether your country implements the following measures

3.1 Measures across Value Chain

3.1.1. Actions for encouraging sustainable / circular product design (example: improved durability, reparability, recyclability, reduction of material use per product...etc.)

☐ Yes ☐ No
☐ In Preparation

Specific Measures:

3.1.2. Policy actions for encouraging plastic alternatives, recycled materials at production stage.

☐ Yes ☐ No
☐ In Preparation

Specific Measures:

☐ Use of biodegradable plastics

☐ Use of recycled materials

☐ Closed-loop recycling

Others:

Brief description:

3.1.3. Steps taken towards restricting microplastics in products.

☐ Yes ☐ No

Specific Measures:

Targeted Products

☐ Cosmetics and Personal Care Products

☐ Others (Please specify:)

Brief description (Please provide explanation for each targeted product selected):

3.1.4. Reduce single-use plastic (shopping bags, straws etc.) by regulations or voluntary measures (such as ban, levy, others)

☐ Yes ☐ No
☐ In Preparation

☐ Regulatory Measures (ex: production ban, Ban on use..etc)

Brief description:

☐ Economic Measures (levy, tax, subsidies...etc.)

Brief description:

☐ Informational Measures (guideline, standards...etc.)

Brief description:

☐ Others

Brief description:

3.1.5. Introduce Extended Producer Responsibility (EPR)

☐ Yes ☐ No

☐ In Preparation

Specific Measures:

*Copy & Paste the below box to provide more information if you have more than one EPR program/initiative targeting different products.

Targeted Products

Nature of Responsibility

☐ Financial responsibility

☐ Operational responsibility

☐ Collective producer responsibility

☐ Individual producer responsibility

Modality

Mandatory ERP

☐ Product take back

☐ Advance disposal fee (price:)

☐ Upstream tax (price:)

☐ Downstream subsidy (price:)

☐ Deposit refund system (price:)

☐ Drop off points

Voluntary EPR

☐ Product Stewardship Initiative

☐ CSR Initiative

Eco-modulation (if applicable)

☐ No Eco-modulation (only standardised fees)

☐ Fees modulated based on recyclability of products

Performance indicators

☐ collection rate* Current: % (Targets, if any: %)

☐ recycling rate* Current: % (Targets, if any: %)

☐ Others:

*Please provide definitions:

Brief Description

3.1.6. Improve waste management and recycling system	☐ Yes ☐ No

Specific Measures:

3.1.7. Promoting plastic waste re-use, recycling and recovery opportunities	☐ Yes ☐ No

Specific Measures:

3.1.8. Install capturing trap/filter on drainage/river	☐ Yes ☐ No

Specific Measures:

3.1.9. Conduct clean-up activities in rivers/ wetlands/ beaches/ coasts/ coral reefs/ sea floor, involving local communities involving local communities	☐ Yes ☐ No

Specific Measures:

3.2 Product Specific Measures: ALDFG

3.2.1. Taken/to be taken National Level Action and/or Community Level Action on Clean sea initiatives including ghost net retrieval, ocean-bound plastics etc.	☐ Yes ☐ No

Specific Measures:

3.2.2. Taken actions for preventing abandoned, lost and discarded fishing gear (ALDFG) being generated.	☐ Yes ☐ No

Specific Measures:

3.2.3. Created/creating collection/recycling mechanism for ALDFG	☐ Yes ☐ No

Specific Measures:

3.3 Partnership and Innovation

3.3.1. Boost multi-stakeholder involvement and awareness-raising	☐ Yes ☐ No

Specific Measures:

3.3.2. Encourage/ Incentivize action by private sector companies to reduce/ sustainably manage their plastic waste.	☐ Yes ☐ No

Specific Measures:

3.3.3. Encourage public awareness on MPL issues through formal education system and/or curriculum for	☐ Yes ☐ No

Specific Measures:

3.3.4. Promote innovative solutions through Research & Development (e.g., subsidy program, investment fund etc.)	☐ Yes ☐ No

Specific Measures:

3.4 Monitoring, Data Management, Understanding Flow of Plastics/MPL

3.4.1. Conduct Life Cycle Assessment (LCA) of plastic products. What are the challenges if LCA is not conducted?	☐ Yes ☐ No

Scope: ☐ Local ☐ National ☐ Regional ☐ International

Brief Description:

Challenges (if applicable):

3.4.2. Conduct Material Flow Analysis (MFA) on plastics. What are the challenges if MFA is not conducted?	☐ Yes ☐ No

Scope: ☐ Local ☐ National ☐ Regional ☐ International

Brief Description:

Challenges (if applicable):

3.4.3. Conduct monitoring / estimation / scientific research on leakage of plastics/microplastics to the natural environment and/or flow of ocean surface. What are the challenges if these actions are not conducted?	☐ Yes ☐ No

Specific Measures:

☐ Established a monitoring/reporting program/mechanism

☐ Regularly conduct monitoring/estimation/scientific research

☐ Conduct monitoring/scientific research

Scope: ☐ Local ☐ National ☐ Regional ☐ International

☐ Macro Plastics ☐ Microplastics (<5mm)

☐ Ocean ☐ (others: rivers, soils, air etc.)

Brief Description:

Challenges (if applicable):

3.5 International Collaboration

3.5.1. Participate in international cooperation through international organizations, multi-national groups, etc.	☐ Yes ☐ No

Specific Measures:

3.5.2. Support target region by your international cooperation initiatives/projects:	☐ Yes ☐ No

Target Regions:

☐ Africa ☐ Middle East and North Africa ☐ South Asia ☐ Central Asia

☐ Oceania ☐ South East ○Latin America and Caribbean

Specific Measures:

4. Challenges:

Check the challenges that your country has faced:

☐ Recycling system improvement

Specific Challenges:

☐ Proper waste management system (including lack of local capacity)

Specific Challenges:

☐ Data collection related to waste in general

Specific Challenges:

☐ Data collection related to marine plastic litter

Specific Challenges

☐ Lack of financial incentives for waste treatment in general

Specific Challenges:

☐ Lack of financial incentives for technology development

Specific Challenges:

5. Best practices:

*(Please share **in detail** **novel best practices** which can be replicated elsewhere, if any. The practice can include those carried out on a national and local level, as well as ones initiated by the private sector, citizens, international cooperation, and international regional level.)*

☐ National level

☐ Local/community level

☐ Private sector initiative

☐ International initiative

Description:

6. Further information:

(Please indicate further detailed information, if any, e.g. name and address of related website, name of published reports and materials)

Thank you very much for completing your response.
Joint Project Team for Preparation of 6th G20 MPL Report

< Implementation Framework for Actions on Marine Plastic Litter > Template for the 6th Information Sharing Report

FOR: International Organizations / NGOs

Thank you very much for taking your time to participate this country survey.

Please fill out the form and send it to g20mpl@iges.or.jp **by 25 July 2024**, copying ecswg@g20.gov.br and tomoko_ichikawa@env.go.jp.

For any questions/ clarifications, please write to the email above.
We look forward to receiving your response.

Notes
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*For each action reported, please...
- clarify the scale at which the activity is implemented (national, provincial, local...etc.), and the leading implementing actor(s): national government, local government, private sector...etc. to the best possible extent.

Name of your organization/Contacts:

Name of Organization:

Focal Point
(Please specify name and contact details of the person in charge: this information will not be published in the report)

Name:

Position:

Division:

Email:

Strategic Focus of Organization

Please indicate the current strategic focus of your organization's activities for MPL abatement in terms of geography, partners/sectors, approach and theme. (Please choose multiple options if applicable.)

☐ Yes, we have strategic focus

☐ No, we do not have strategic focus, but target any regions/actors/thematic issues on demand.

Geographical Focus

☐ Global

☐ Regional

☐ Africa ☐ Middle East and North Africa ☐ South Asia ☐ Central Asia

☐ Oceania ☐ Latin America and Caribbean ☐ South East Asia ☐ Other:

☐ Specific country (Please provide names of target countries):

Partners of Focus

☐ National Government ☐ City Government ☐ Business ☐ CSO

☐ Academia /Educational Institutions ☐ Others

Approach

- ☐ Institutional development
- ☐ Development of laws, regulations, strategies, action plans, indicators...etc.
- ☐ Capacity Development
- ☐ Finance:
- ☐ Data and Knowledge development
- ☐ Global/regional integration / coordination / exchange (e.g. regional knowledge platform)

Thematic Focus

- ☐ Technology development for / use of plastic alternatives (e.g. biodegradable plastics)
- ☐ Sustainable/circular product design (e.g. improved durability, reparability, recyclability)
- ☐ Sustainable/ circular business model creation (e.g. servitization of products)
- ☐ Extended Producer Responsibility
- ☐ Recycling system
- ☐ Proper waste management
- ☐ Prevention of littering, illegal dumping and unintentional waste into environment
- ☐ Collection/removal of plastic litter from the natural environment (e.g. beach clean-ups, retrieval of fishing gear...etc.)
- ☐ Education, awareness-raising and human behavior related
- ☐ Promotion of private sector engagement/actions
- ☐ Monitoring/estimation of plastics/microplastics leakage to the natural environment and/or flows
- ☐ Scientific research
- ☐ Monitoring of country policy status related to MPL
- ☐ Others (please specify):

Brief description:

Programmes, Projects and Initiatives

Please tell us the number of major programs, projects and/or initiatives run by your organization in support of national, city, and business...etc. towards MPL abatement.
Also, please provide their names, geographical focus and details.

* If you have multiple programmes/projects/initiatives, please copy and paste the below boxes to add new entries. Please choose multiple options if applicable.)

Number of major programs, projects and/or initiatives related to MPL:

<Please copy & paste the below boxes from here to add more entry>

Program / Project / Initiative #1

Name:

Geographical Focus

- ☐ Global
- ☐ Regional
- ☐ Africa ☐ Middle East and North Africa ☐ South Asia ☐ Central Asia
- ☐ Oceania ☐ Latin America and Caribbean ☐ South East Asia
- ☐ Other:
- ☐ Specific country (Please provide names of target countries):

Partners of Focus

- ☐ National Government ☐ City Government ☐ Business ☐ CSO
- ☐ Academia /Educational Institutions ☐ Others

Name (if applicable):

Approach

- ☐ Institutional development
- ☐ Development of laws, regulations, strategies, action plans, indicators...etc.
- ☐ Capacity Development
- ☐ Finance:
- ☐ Data and Knowledge development
- ☐ Global/regional integration / coordination / exchange (e.g. regional knowledge platform)

Thematic Focus

- ☐ Technology development for / use of plastic alternatives (e.g. biodegradable plastics)
- ☐ Sustainable/circular product design (e.g. improved durability, reparability, recyclability)
- ☐ Sustainable/ circular business model creation (e.g. servitization of products)
- ☐ Extended Producer Responsibility
- ☐ Recycling system
- ☐ Proper waste management
- ☐ Prevention of littering, illegal dumping and unintentional waste into environment
- ☐ Collection/removal of plastic litter from the natural environment (e.g. beach clean-ups, retrieval of fishing gear...etc.)
- ☐ Education, awareness-raising and human behavior related
- ☐ Promotion of private sector engagement/actions
- ☐ Monitoring/estimation of plastics/microplastics leakage to the natural environment and/or flows
- ☐ Scientific research
- ☐ Monitoring of country policy status related to MPL
- ☐ Others (please specify):

Brief description:

<Please copy & paste the below boxes from here to add more entry>

Program / Project / Initiative #2

Name:

Geographical Focus

- ☐ Global
- ☐ Regional
- ☐ Africa ☐ Middle East and North Africa ☐ South Asia ☐ Central Asia
- ☐ Oceania ☐ Latin America and Caribbean ☐ South East Asia ☐ Other:
- ☐ Specific country (Please provide names of target countries):

Partners of Focus

- ☐ National Government ☐ City Government ☐ Business ☐ CSO
- ☐ Academia /Educational Institutions ☐ Others

Name (if applicable):

Approach

- ☐ Institutional development
- ☐ Development of laws, regulations, strategies, action plans, indicators...etc.
- ☐ Capacity Development
- ☐ Finance:
- ☐ Data and Knowledge development
- ☐ Global/regional integration / coordination / exchange (e.g. regional knowledge platform)

Thematic Focus

- ☐ Technology development for / use of plastic alternatives (e.g. biodegradable plastics)
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- ☐ Scientific research
- ☐ Monitoring of country policy status related to MPL
- ☐ Others (please specify):

Brief description:

<Please copy & paste the above table to add more programmes/projects/initiatives below>

Programmes, Projects and Initiatives

Please see below the top eight challenges in implementing MPL actions, reported by respondent countries in our report last year.

Does your organization currently have any activities, services, knowledge products, financing schemes to assist countries/regions address these challenges? Or is your organization planning any of the above in the future? If yes, please select applicable options below and provide a brief description for each. (You can simply provide the names of programmes, projects, initiatives explained in earlier section)

- ☐ Data collection related to marine plastic litter
- ☐ Recycling system improvement
- ☐ Lack of financial incentives for waste treatment in general
- ☐ Lack of financial incentives for technology development
- ☐ Lack of awareness among citizen, business, local government
- ☐ Proper waste management system (including lack of local capacity)
- ☐ Data collection related to waste in general
- ☐ Others (Please elaborate them in the space below)

Further information

Provide further information you wish to share in the report, such as the link to your website, name of recently published reports and online materials and their URLs, if any.

Brief description:

Thank you for your participation.
Joint Project Team for Preparation of 6th G20 MPL Report

Annex III. Summary of Challenges

Country	Specific Challenges
Recycling system improvement	
Australia	Limited recycling capacity to manage problematic **hard to recycle materials** like soft plastics. While there has been significant recent investment in reprocessing capacity, capacity shortages remain for some materials, including where low volumes make reprocessing unviable.
Brazil	(1) Structure the Waste Pickers Cooperatives and Associations, (2) Improve municipal selective collection, (3) Strengthen the trade of recycled materials
Germany	While the plastic recycling quota of the packaging act boosted plastic recycling, however the **demand side for recycled material** did not develop in the same way. Therefor minimum recycled content requirements, as foreseen by the EU-Packaging and Packaging Waste Regulation, need to complement recycling quota.
Indonesia	No specific regulation to use recycled content in packaging. Recycle industries are located mainly in Java islands.
Saudi Arabia	Establishing the best available technologies for recycling is essential to addressing the challenge of plastic pollution, which is rooted in the mismanagement of plastic waste. A key challenge is transferring innovative and advanced recycling technologies. To effectively tackle plastic pollution, it is crucial to specify arrangements for capacity-building, technical assistance, and technology transfer. One of the successful implementation of solutions to plastic pollution is highly dependent on the availability of these capacity-building and technology transfer initiatives.
South Africa	The country suffers from a lack of comprehensive recycling services and infrastructure. This deficiency hinders efforts to reduce the burden on landfills and fails to capitalize on the potential benefits of recycling. Without robust recycling systems in place, the pressure on waste management infrastructure continues to escalate, making the need for immediate and effective solutions ever more critical. Landfills are nearing their full capacity, with some expected to reach their limit as early as 2025. The overcrowding of landfills is not just a logistical problem; it poses severe environmental risks. As these sites overflow, harmful toxins seep into the environment, threatening both ecological and human health.
United States of America	**Education and Outreach** - It can be difficult for consumers to understand what materials can be recycled, how materials can be recycled, and where to recycle different materials. This confusion can lead to placing recyclables in the trash or throwing trash in the recycling bin or cart. Therefore, it is important to enhance education and outreach to consumers on the value of recycling and how to recycle properly. **Infrastructure** - Some recycling infrastructure does not match today's waste stream. Communication between the manufacturers of new materials and products and the recycling industry needs to be enhanced to prepare for and optimally manage the recycling of new materials. **Markets for Secondary Materials** - Domestic markets for recycled materials need to be strengthened in the United States. There is also a need to better integrate recycled materials and end-of-life management into product and packaging designs. Improving communication among the different sectors of the recycling system is needed to strengthen the development of existing materials markets and to develop new innovative markets. **Measurement** - Stakeholders across the recycling system agree that more consistent measurement methodologies are needed for measuring recycling system performance. These more standardised metrics can then be used to create effective goals and track progress.

Country	Specific Challenges
Netherlands	1) Currently the **market for recycled plastics** is quite challenging, as the price of virgin plastics is very low and influenced by a lot of international factors. Some Dutch plastic recycling plants are in financial difficulties because of this. Getting the proper international data sets to scientifically verify and influence the chain (via policy) is a challenge. This includes the **international financial data on plastics, recycled plastics and other materials.** In Indonesia the main challenge was the (small) scale of operations and lack of quality standards in Indonesia to replicate and scale up those innovative solutions. 2) Because waste collection in the Netherlands has been delegated to municipalities, there is a lack of any form of standardization and direction on how to collect waste as effectively as possible for the circular economy.
Spain	The plastics sector in Spain is of great importance, as evidenced by the turnover of the plastics manufacturing subsector in primary forms, which has risen to of the plastics manufacturing subsector in primary forms, which accounts for slightly more than 17% of the total chemical industry slightly above 17% of the total chemical industry. In a circular economy, where priority should be given to the use of secondary raw materials, the penetration of these materials is not consolidating at a steady pace and is limited by a fragmented market, which is not immune to the behavior of the prices of raw materials. the behavior of prices for virgin raw materials. Added to this are the costs of collection, treatment and management of plastics, the low availability of recycled plastic polymers and the lack of available technologies for the valorization of certain polymers, additives or multilayer products. In addition, the small size of most companies hinders innovation, the ability to adapt production to new circular models, as well as the professionalization of the and the professionalization of management. It is therefore necessary to encourage the transformation of the sector towards a sustainable model with special emphasis on reducing waste generation and increasing recycling rates.
Proper waste management system (including lack of local capacity)	
Brazil	End dumpsite operations
Canada	ALDFG/Ghost Gear: A lack of recycling facilities for end-of-life fishing gear has been identified as a problem for ensuring responsible disposal of fishing gear – targeted funding was provided between 2020-2024 by DFO to establish additional capacity, but lack of facilities remains a challenge.
Indonesia	Specific Challenges: • The national waste collection rate was below 40% in 2020, with some regions below 20%. There is a significant lack of producer participation in the management of plastic packaging waste. • Inadequate waste collection infrastructure, especially in rural, remote and island areas, leads to uncontrolled dumping into rivers, open fields or burning, causing pollution and health hazards. • Many landfills in Indonesia are poorly managed, lacking proper liners, leachate collection systems and gas capture mechanisms, resulting in the release of pollutants that contaminate soil and groundwater and pose health risks to nearby communities.
South Africa	South Africa's waste management system is facing a mounting crisis. As the population rapidly grows, so does the amount of waste generated, creating immense pressure on an already strained infrastructure. This issue is most pronounced in major cities, where the exponential increase in waste is overwhelming existing systems. Waste collection services are inadequate. Only 60% of households have access to weekly waste collection. The lack of regular and efficient waste collection leads to illegal dumping and littering.

Country	Specific Challenges
Netherlands	Collectors, sorters, recyclers and producer organizations are not always transparent about the processing of data. This is related to the lack of reporting obligations. As a result, creating data-driven policy is not always possible.
Data collection related to waste in general	
Australia	States and territories collect data in various formats and parameters, based on their Environment Protection Agency (EPA). Data sharing is limited due to confidentiality and can be difficult to aggregate at a national level. Progress underway to streamline data collection with the use of reporting standards, and improve data sharing between the various levels of government (Local, State/Territory/Commonwealth)
Brazil	Improve data collection, both provided by municipalities and through the reverse logistics systems. Broaden the use of Transportation of Waste System (MTR, in Portuguese) Implement the National Monitoring System to reverse logistics.
Indonesia	Indonesia has already National Waste Management Information System website (SIPSN) that gathered waste generation, waste competition, waste that go to the waste facilities and other information. The data was filled by the local governments. There are 514 cities and regencies in Indonesia, however, some of them are not reporting regularly to the website.
Mexico	In the field of plastic pollution, the non-standardised regulatory frameworks, reduced institutional capacities and pressures from productive sectors, have limited attention on the excessive consumption of plastics. In most tourist destinations, working with market actors to create incentives to reduce plastic use and with travelers to adopt reduce and reuse models is still a pending task. An additional dimension here, involves regulating, enforcing, and motivating changes in informal vendors and service providers that are not bound by formal policies. While improper plastic waste management is a widespread issue, it also represents a significant environmental challenge that the tourism sector is striving to address.
South Africa	Data silos are a primary challenge in recycling operations and occur when different departments, systems or stakeholders have access to different or incomplete data sets. This problem hinders communication, collaboration, and decision-making across the entire recycling value chain. Another data challenge in recycling operations is the need for more standardization and transparency across different data sources. Recycling operations often rely on multiple systems or vendors for collecting data. However, these systems may use different formats, definitions or metrics for measuring key performance indicators (KPIs) such as material type, volume, diversion rates, contamination rates or greenhouse gas emissions. This can lead to inconsistencies, errors or data quality and accuracy discrepancies.
Data collection related to marine plastic litter	
Canada	ALDFG/Ghost Gear Prior to 2020, DFO had very limited information on rates of gear loss in Canadian waters. In 2020, Canada implemented mandatory lost gear reporting for all commercial fisheries. Reporting of lost gear is critical to fully understand the amount of gear lost in Canada and the subsequent impacts on marine ecosystems and the environment. Reporting lost gear is part of sustainable management of Canadian fisheries, and as such reporting is now an enforceable requirement of commercial licence conditions. The failure to report lost gear is subject to charges under Canada's Fisheries Act. To support lost gear reporting requirements, Fisheries and Oceans Canada developed the Fishing Gear Reporting System (FGRS); a user-friendly application for harvesters to report lost and retrieved fishing gear. Though improvements in reporting rates have been made, low compliance on reporting lost gear still exist in certain areas, and DFO will continue to engage industry on the importance of reporting.

Country	Specific Challenges
China	At present, the number and frequency of marine litter monitoring points are still insufficient, and the technical support for coastal cities to carry out marine litter management needs to be strengthened.
Germany	A remaining challenge remains D10C2 of the MSFD on micro litter in the different marine compartments since monitoring and assessment approaches create results, which are hard to compare. However, joint approaches with the involvement of DE are currently been developed in the EU Technical Group on Marine Litter and OSPAR and HELCOM. OSPAR currently agreed on a new common indicator on micro litter in sediments.
Indonesia	Lack of data availability on annual monitoring of marine plastic litter from several sectors like from passenger ships, fishermen ship, aquaculture, ALDFG, EOLFG, and among others
Philippines	National marine litter baselining is among the strategies identified in the Philippines' National Plan of Action for the Prevention, Reduction and Management of Marine Litter (NPOA-ML). Under this strategy, a National Research Framework and Program for the Monitoring and Assessment of Marine Litter (NRFP-ML) will be developed to harmonize monitoring and assessment of marine litter in the country to address concerns on comparability, transparency, and ease of data gathering. In addition, a database on plastic litter (macro and microplastics in different habitats) will be developed to consolidate all the data/information from different monitoring and research activities throughout the Philippines. These data can be used in the formulation of policies and ordinances on management of plastic litter specifically by localities and their respective marine environment.
Japan	Comparable historical monitoring data of MPL across regions based on consistent sampling methodologies is essential for effective countermeasures. As reported in Section 3.4., Japan is working nationally and globally to address this issue by promoting harmonization of methodologies and compiling/sharing monitoring data on ocean surface microplastics to build foundations for science-based policymaking. However, there is still a lack of monitoring data, especially in South-East Asia, Africa, South America, and India. Therefore, promoting the recognition of AOMI among international organizations and researchers to invite further data contribution and fill in the data gaps is important.
South Africa	There is different sources of data for marine plastic litter which makes it difficult to have reliable data.
United States of America	Routine collection of standardised monitoring data on plastic pollution in the environment - While the NOAA Marine Debris Program has a program that supports standardised collection of shoreline monitoring data, such data collection is not necessarily routine, it does not extend to other environmental compartments (e.g., water surface or seafloor in the marine environment), and it does not cover plastic debris smaller than 2.5 cm.
Netherlands	Monitoring of seafloor litter remains a difficult challenge. NL currently investigates of fishing for litter data can also be used for this purpose. Video monitoring is in development but may be difficult to apply in the generally turbid Dutch marine waters. Monitoring of microplastic particles is under development and methods are becoming more harmonised and improving due to the European Technical Group Marine Litter (TGML) and OSPAR guidelines and expert groups; and via international cooperation with UK and Norwegian microplastic labs. Reliable sampling and analyses microplastics Modeling especially pathways of marine litter.

Country	Specific Challenges
Lack of financial incentives for waste treatment in general	
Germany	Extended producer responsibility (EPR) obligations and recycling quote are appropriate incentives for waste treatment. However we face the challenge that mixed residual waste ends up in separated waste streams for which end consumers do not have to pay due to EPR, like light weight packaging (there is a fee on mixed municipal waste). This deteriorated the quality of the separately collected waste.
Indonesia	Waste management in Indonesia often relies on subsidies due to inadequate cost recovery through user fees, resulting in funding gaps and unstable operating expenditures. • Waste management budgets are less than 0.5% of local government budgets, hindering the establishment and maintenance of necessary infrastructure and services. • High operating costs, including fuel, labour, and equipment maintenance, burden local governments and waste management organisations, limiting their ability to provide efficient services.
South Africa	By providing a tangible financial reward for the return of recyclable products, deposit-refund systems have been shown to stimulate recycling (or at least safe disposal) and discourage littering (United Nations Environment Program, 2005); at least in the case of the fairly limited range of products to which they can be applied (Inter-American Development Bank, 2003). Compared to product taxes, which do not generally provide incentives to stimulate recycling, they are also fairer on households, who are able to offset the price increase associated with the deposit by returning the product and claiming a refund
Lack of financial incentives for technology development	
Canada	Specific Challenges: ALDFG/Ghost GearLack of funding to promote technology development related to preventing and reducing the effects of ghost gear has been identified as a challenge going forward as DFO shifts its focus to a preventative strategy on Ghost Gear. DFO has funded projects relating to technological innovation, several of which are ongoing, and will continue to work with industry to seek opportunities to promote the uptake, development and trialing of new innovative technologies. In February 2025, Canada will be hosting the 2nd International Gear Summit, aiming to convene Indigenous and non-Indigenous harvesters, technical experts, likeminded nations, and various agencies at all levels to discuss innovative fishing gear and address ghost gear.
France	Nuance: the strategy France 2030 plans to fund 300 million euros to the plastic recycling industry (action: strengthen investment in the recycling chain and incorporation of plastics)
Indonesia	Although there has been investment in technology installations, the ongoing costs of daily processing are still being subsidised.
Saudi Arabia	Currently, the Municipal Infrastructure Grant (MIG) is the only source of funding from national government that can be accessed by municipalities for waste-related infrastructure. However, waste projects have to compete with projects from other sectors (e.g. water, sanitation and electricity), which are typically prioritised. As such, the potential need for a dedicated fund for waste management infrastructure should be considered. However, in the case of funding for upgrading landfill infrastructure, such a fund should ideally have conditions attached, to ensure that municipalities implement the necessary waste management reforms to access such funding.