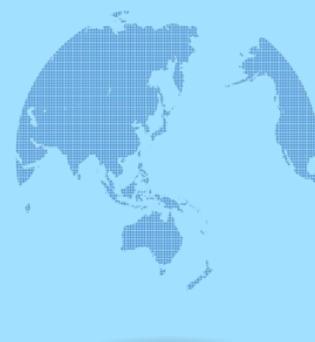


G20 Report on Actions against Marine Plastic Litter

First Information Sharing based on the
G20 Implementation Framework



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Disclaimer: The report does not necessarily provide exhaustive documentation of all activities by G20 members and outreach countries; rather it documents their on-going efforts and best practices at the time when compilation work was conducted between June 2019 and October 2019.

The information included in this report is based on voluntary submissions from the G20 and outreach countries. For details of actions, please refer to the URL in each country's description.

3rd edition (As of 13 November 2019)

Updated points:

- Added a submission from China
- Reflected the revisions from UK, US and EU
- Additional proofread

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Australia

Brazil

Canada

China

Finland

France

Germany

Indonesia

Italy

Japan

Kingdom of Saudi Arabia (KSA)

Republic of Korea

Republic of South Africa

Russian Federation

Singapore

Spain

The Netherlands

United Kingdom (UK)

United States of America (US)

European Union (EU)

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With Japan holding the G20 Presidency in 2019, MOEJ hopes that this report will be helpful to promote policies and measures among the contributing countries by peer learning from best practices, as well as for the use of the wider international community.

Acronyms and Abbreviations

APEC	Asia Pacific Economic Cooperation
BRICS	Brazil, Russia, India, China and South Africa
CE	Circular Economy
EC	European Commission
EPA	US Environmental Protection Agency
EPR	Extended Producer Responsibility
ESCAP	Economic and Social Commission for Asia and the Pacific
G7	Group of Seven
G20	Group of Twenty
GPAP	Global Plastics Action Partnership
HELCOM	Baltic Marine Environment Protection Commission - Helsinki Commission
IMO	International Maritime Organization
MARPOL	International Convention for the Prevention of Pollution from Ships
MEPC	Marine Environment Protection Committee
MPL	Marine Plastic Litter
MSW	Municipal Solid Waste
NOAA	National Oceanic and Atmospheric Administration
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
R&D	Research and Development
SDGs	Sustainable Development Goals
SMM	Sustainable Materials Management
SUP	Single-Use Plastics
UN	United Nations
UNEP	UN Environment Programme
WtE	Waste-to-Energy
3Rs	Reduce, Reuse, Recycle

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1. Introduction

Plastic has been regarded as a useful material in terms of its versatility and wide-ranging applications. In the last few years, it has been reported that the amount of plastics in the world's oceans has been rapidly growing and poses a threat to the environment and to our way of life. These issues need to be addressed through global coordinated actions at multiple levels.

Marine litter issues, especially marine plastic litter and microplastics, have been intensively discussed at various international fora. At the G20 Hamburg summit in July 2017, the “G20 Action Plan on Marine Litter” was launched.

At the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth, held in June 2019 in 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. As a common global vision, the “Osaka Blue Ocean Vision” was shared by the leaders at the Summit. This vision aims to reduce additional pollution by marine plastic litter to zero by 2050 through a comprehensive life-cycle approach that includes reducing the discharge of mismanaged plastic litter by improved waste management and innovative solutions while recognising the important role of plastics for society.

Under the G20 Implementation Framework, the G20 members will facilitate the implementation of the G20 members' actions in line with the G20 Action Plan on Marine Litter based on respective national policies, approaches and circumstances. The G20 members will also share and update information on relevant policies, plans and measures taken/to be taken on a voluntary basis, and promote policies and measures by peer learning from best practices.

In light of these results, this report was prepared on the occasion of the follow up meeting of the G20 Implementation Framework for Actions on Marine Plastic Litter, which was held in Tokyo, utilising the opportunity of the G20 Resource Efficiency Dialogue, 9-11 October 2019, hosted by MOEJ. This was the first opportunity for sharing information on actions to address marine plastic litter after the Framework was established. This report is expected to contribute to promoting national policies and measures among not only G20 members, but also non-G20 members.

For efficient information-sharing and updating as well as for outreach to the wider international community, a portal site was newly launched by MOEJ and IGES. The information provided by the G20 members and outreach countries will be uploaded onto the portal site (<https://g20mpl.org/>).

2. Policy framework for MPL

All of the reporting countries (20 countries) have formulated strategy and policy relevant to marine plastic litter at the national level, from the perspectives of plastic resource circulation and marine environment protection.

Australia

■ Policy framework

(a) 2018 National Waste Policy

Based on circular economy principles, the 2018 National Waste Policy includes strategies to reduce waste generation, improve resource recovery, increase recycled content in goods and infrastructure, and reduce the impact of plastic and packaging on the environment. A copy of the Policy is available at

<http://www.environment.gov.au/protection/waste-resource-recovery/national-waste-policy>

(b) Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The harmful effects of marine debris are recognised under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) as a Key Threatening Process. Australia's Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans, includes a range of management approaches for research and monitoring, public outreach and education, preventing and reducing debris from land-based sources as well as addressing marine-based sources and removing accumulated marine debris from the coastal marine environment.

■ Achievements

(a) In December 2018, Australia's environment ministers and the President of the Australian Local Government Association set a unified direction for waste and recycling in Australia by agreeing to a new National Waste Policy.

On 9 August 2019, the Council of Australian Governments agreed to ban exports of waste plastic, paper, glass and tyres while building Australia's capacity to generate high value commodities and associated demand. The ban will have environmental benefits through an expanded local recycling industry, by building Australia's capacity to make valuable products from recycled materials, and making sure Australia take responsibility for its waste.

Brazil

■ Policy framework

- (a) The National Plan to Combat Marine Litter was launched on 22 March 2019, by the Ministry of the Environment and seeks to achieve two main purposes: Environmental Recovery and Prevention, based on 6 axes of implementation and 30 actions, focused on clear and achievable goals:

Standardisation and Guidelines

- i. Partnering with relevant sectors to update and create regulations to reduce marine litter;
- ii. Develop specific strategies of waste management for public events on the coastal zone.

Related URL: <http://www.mma.gov.br/agenda-ambiental-urbana/lixo-no-mar.html>

■ Achievements

- (a) Approximately 25% of the Plan has been completed.
- (b) The Brazilian government has allocated BRL40 million towards the implementation of the Plan.

Canada

■ Policy framework

- (a) Canada has adopted a vision of zero plastic waste where plastics stay in the economy and out of landfills and the environment. Supporting frameworks include:
- i. Ocean Plastics Charter (includes targets)
 - ii. G7 Innovation Challenge to Address Plastic Marine Litter
 - iii. Canada-wide Strategy on Zero Plastic Waste and Action Plan
 - iv. Prime Minister of Canada's announcement on federal actions to reduce plastic waste and pollution
 - v. Canada's Plastics Science Agenda (CaPSA)
 - vi. Microbeads in Toiletries Regulations

Canada also implements its obligations under several legally binding international agreements that contribute to preventing waste and litter, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the International Convention for the Prevention of Pollution from Ships (MARPOL), and the London Convention and Protocol to prevent marine pollution by dumping at sea. Other international frameworks for action have also been adopted such as: the G7 Action Plan to Combat Marine Litter, the G20 Action Plan on Marine Litter and Implementation Framework, International Maritime Organization Action Plan to Address Marine Litter from Ships, and the plastics-related United Nations Environment Assembly resolutions.

Related URL:

Canada's Zero Plastic Waste website: www.canada.ca/zero-plastic-waste

Canada-wide Strategy on Zero Plastic Waste and Action Plan:

<https://www.ccme.ca/en/resources/waste/waste/plastic-waste.html>

■ Measures

- (a) To contribute to the Strategy on Zero Plastic Waste, the Government of Canada is taking major steps to reduce plastic pollution and drive ambitious action from governments and businesses across the country. These include:
- i. Working with provinces and territories to develop consistent extended producer responsibility programmes
 - ii. Investing in innovative Canadian technologies and global solutions to address plastic pollution, including providing over CAD10 million to SMEs, through seven domestic innovation challenges, to develop solutions to reduce plastic waste
 - iii. Reducing plastic waste from federal operations, by diverting 75% of plastic waste by 2030, eliminating unnecessary use of single-use plastics in operations, meetings and events and purchasing more sustainable products
 - iv. Supporting community-led action and citizen-science activities
 - v. Working with industry to prevent and retrieve abandoned, lost or discarded fishing gear; and accelerating research along the lifecycle of plastics and its impacts on humans, wildlife, and the environment

■ Achievements

- (a) In November 2018, Canadian Environment Ministers agreed to work collectively toward a common goal of zero plastic waste. To this end, they approved in principle a Canada-wide Strategy on Zero Plastic Waste, which outlines a vision to keep all plastics in the economy and out of landfills and the environment. The strategy aligns with the Ocean Plastics Charter—a key outcome of Canada's G7 Presidency—and was developed with input from industry, Non-Governmental Organisations and Canadians. It outlines areas where changes are needed across the plastic lifecycle, from design to collection, clean-up and value recovery, and underscores the economic and business opportunities resulting from long-lasting and durable plastics.
- (b) In June 2019, Environment Ministers released the first of two phases of the Action Plan on Zero Plastic Waste. The Phase 1 Action Plan will focus government efforts across a broad range of activities. They include achieving consistent extended producer responsibility programmes (which place responsibility on companies that manufacture plastic products or sell items with plastic packaging to manage the collection and recycling of these products at their end-of-life); a roadmap to address single-use and disposable plastics; support for recycling infrastructure and innovation in plastics manufacturing; and, tools for green procurement practices. Phase 2,

coming in 2020, will identify actions to: improve consumer awareness; reduce waste and pollution from aquatic activities; advance science; capture and clean-up debris in the environment; and contribute to global action.

China

■ Policy framework

- (a) Regulations on the Prevention and Control of Waste Plastics Processing and Utilisation
- (b) Action Plan for the Agricultural and Rural Pollution Control
- (c) Action Plan for the Bohai Comprehensive Management
- (d) Amendment to the Environmental Protection Law of the People's Republic of China (2014)
- (e) Amendment to the Marine Environment Protection Law of the People's Republic of China (2017)
- (f) Issuance and implementation of the Action Plan for Water Pollution Prevention and Control (2015)
- (g) Issuance and implementation of the Action Plan for Soil Pollution Control (2016)

Finland

■ Policy framework

- (a) Regional Sea Convention level work: HELCOM Baltic Sea Action Plan and Marine Litter Action Plan
Related URL: <http://www.helcom.fi/action-areas/marine-litter-and-noise/marine-litter/marine-litter-action-plan>
- (b) Reduce and Refuse, Recycle and Replace – A Plastics Roadmap for Finland (2018)
The Plastics Roadmap for Finland points out the first steps towards a new, sustainable plastic economy. The Plastics Roadmap identifies measures used to reduce the harm caused by plastic waste and litter, help consumers deliver plastics to waste management, improve the efficiency of plastics recovery, recycling and product design, creating conditions for investments and innovations in the circular economy, and reducing the dependency on fossil raw ingredients by increasing bio-based and biodegradable solutions.
Related URL: <https://muovitiekartta.fi/in-brief/>
- (c) Finnish Marine Strategy, including Monitoring Programme (2014 – 2020), Programme of Measures (2016–2021), and an updated status assessment of the Finnish marine environment (2018) with targets that guide towards good environmental status, GES (2018 – 2024).
Related URL:
https://www.ymparisto.fi/en-US/Sea/Protection_and_management_of_the_marine_environment/Development_of_Finland_s_marine_strategy

Targets

- (a) Targets of the National Plastics Roadmap
- (b) Environmental targets of the Finnish Marine Strategy (2018 – 2024) concerning marine litter:
 - i. Reception of waste to be efficient and user-friendly at all ports
 - ii. Significant reduction in the number of cigarette butts on Finnish urban beaches (by 2024)
 - iii. Urban waste water treatment facilities to remove a very significant portion of microplastics
 - iv. 30% decrease in the quantity of plastics in the marine environment % (by 2024) from 2015 levels. Indicators are addressed to each target

■ Achievements

- (a) Development of a Plastics Roadmap for Finland with involvement across sectors, including industry and civil society organisations, and with active implementation ongoing.

France

■ Policy framework

- (a) Action Plan for the Marine Environment (Marine Strategy Framework Directive – MSFD)
- (b) Biodiversity plan: Target – “Zero plastic reaching the sea in 2025”
- (c) National Roadmap against Marine Litter 2019-2025
- (d) Pending law on circular economy with a chapter devoted to plastics

■ Measures

- (a) Fighting against littering in cooperation with local authorities
- (b) Establishment of a roadmap for circular economy (100% of plastics to be recycled in 2025, targets for a better collection of plastics, targets for a better recyclability of plastic products, etc.); study of a nationwide deposit system for plastic bottles and other beverage containers (ongoing in 2019, part of the discussions of the circular economy roadmap and the forthcoming Law on wastage and circular economy)
- (c) Implementation of voluntary commitments of major retailers and brand owners (“National Pact on plastic packaging”) on prevention measures (elimination of harmful or unnecessary plastic packaging and improved recycled content) accompanied by a monitoring system with pertinent features (transparency, independence, auditable)
- (d) Favouring international cooperation among European willing member states for the exchange of best practices. and advocate the European Commission to implement facilitating measures (“project on a European plastic pact”)

Germany

■ Policy framework

- (a) The Federal Environment Ministry's Five-point plan aims at 'less plastic and more recycling'. It is accompanied by a PA Campaign: 'No to the Throwaway Society'

On 26 November 2018, the German Federal Minister for the Environment launched the 'Federal Environment Ministry's five-point plan for less plastic and more recycling'.

Assuming that the world is living in a throwaway society, the plan aims at changing course on how to manage packaging and short-lived consumer goods and reverse the trend. The plan will make consumption more sustainable, avoid unnecessary products and packaging and strive for closed-loop recycling. This is a great challenge that requires the efforts of many actors.

Related URL:

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/5_punkte_plan_plastik_181123_bf.pdf

- (b) Germany is the contracting party to two regional sea cooperations for the protection of the marine environment of the North East Atlantic and the Baltic Sea. Both cooperations have established Regional Action Plans on Marine Litter.

Related URL; <https://www.ospar.org/documents?v=34422>

<http://www.helcom.fi/Lists/Publications/Marine%20Litter%20Action%20Plan%20for%20the%20Baltic%20Sea.pdf#search=marine%20litter%20action%20Plan>

- (c) Germany has established a "National Cosmetics Dialogue", established in 2013, aiming at a voluntary phasing out of 'microbeads' from cosmetic products.

- (d) Together with the Government of Lower Saxony and the Federal Environment Agency, the Federal Ministry for the Environment has established a National Round Table on Marine Litter' (RT), i.e. a joint Platform for Federal and Federal Laender Agencies and Stakeholders. They all work together in Working Groups on Land based-/ Sea based Sources (each incl. a public awareness-raising component)

Related URL: <http://www.muell-im-meer.de/>

■ Measures

- (a) Concerning marine litter, the German 'Programme of Measures' for implementing the European Marine Strategy Directive takes the following measures:

- i. Marine litter becoming an item in learning goals, teaching plans and materials
- ii. Modification/substitution of products in a comprehensive life cycle approach
- iii. Avoiding the use of primary microplastic particles
- iv. Reducing inputs of plastic litter e.g. plastic packaging, into the marine environment
- v. Measures relating to lost and abandoned fishing nets and gear
- vi. Establishing the "fishing-for-litter" approach

- vii. Removing existing marine litter
- viii. Reducing amounts of plastic litter through local regulatory provisions
- ix. Reducing emissions and inputs of microplastic particles

Indonesia

■ Policy framework

- (a) National Policy and Strategy on Solid Waste Management 2018-2025 (regulated by Presidential Regulation No. 97/2017), which includes strategy implemented at provincial and city/regency levels
- (b) Acceleration of controlling and restoring Citarum River pollution and degradation (Regulated by Presidential Regulation No. 15/2018)
- (c) Acceleration of waste-to-energy (WtE) projects in 12 cities (Regulated by Presidential Regulation No. 35/2018)
- (d) National Plan of Action for Combating Marine Litter 2018-2025 (Regulated by Presidential Regulation No. 83/2018)
- (e) Solid Waste Disposal Support Fund (Regulated by Ministry of Environment and Forestry Regulation No. P.24/2019)
- (f) Enhancing Funding Mechanisms, Policy Reform and Law Enforcement:
Funding mechanisms for the National Plan of Action (NpoA) is expected mainly coming from regional and national budgets and supported by international organisations and partnering countries can be expected to finance the implementation of NpoA.

Targets:

- (a) The target of national policy and strategy is to reduce waste from its source by 30% and to handle waste properly by 70% in 2025.
- (b) The target of the plan of action is to reduce marine litter by 70% in 2025.
- (c) In the context of plan of action for combating marine litter 2018-2025, there are five strategies to be implemented including:
 - i. National movement to increase stakeholder awareness
 - ii. Land-based waste management
 - iii. Waste management on the coast and sea
 - iv. Funding mechanisms, institutional strengthening, supervision and law enforcement
 - v. Research and development

■ Achievements

- (a) Development of a Plastics Roadmap for with involvement across sectors, including industry and civil society organisations, and with active implementation ongoing.
- (b) In the aspect of phasing out single-use plastic, two provincial governments and 19 cities/regencies have banned or are planning to ban plastic shopping bag, plastic drinking straws and Styrofoam.
- (c) Government of Indonesia has provided financial schemes to improve the capacity of local governments in waste management, including:
 - i. National budget allocation to construct new landfills or rehabilitate existing landfills
 - ii. Special budget allocation to construct solid waste management facilities such as composting facility, waste bank facility, collection & transportation vehicle, and recycling facility
 - iii. Special budget subsidy allocation for local governments to pay additional tipping fee operating and maintaining WtE facility
 - iv. National incentive budget for local governments that succeeds in preventing and reducing plastic waste generation

Italy

■ Policy framework

- (a) Policy framework includes:
 - 2017: National legislative measures aiming at reducing the consumption of lightweight plastic carrier bags.
 - 2017: National legislative measure: ban on plastic cotton bud sticks by 2019 and ban on plastic microbeads in cosmetics by 2020.
 - 2015: National legislative measure to reduce the improper discarding of small and micro waste (receipts, chewing gum, tissues, cigarette butts, etc.) in the environment.
In particular, municipalities shall install special containers for the collection of cigarette butts on streets, in parks and popular social-gathering places. Tobacco producers shall implement information campaigns, in collaboration with the Ministry of Environment, Land and Sea, with the aim to raise consumer awareness about the harmful consequences for the environment resulting from the littering of cigarette butts.
- (b) In recent years, Italy has paid great attention to the issue of marine plastic litter and is strongly committed to face this challenge, especially in the framework of the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, (under which the G7 “Action plan to combat marine litter” is implemented in the Mediterranean region).
- (c) A synergistic approach is followed, which links aspects related to prevention to those related to the control, monitoring and removal of marine litter, especially plastics, including the seabed.

Campaigns for raising awareness, education and research have been promoted and are ongoing.

- (d) Concerning the cooperation activities undertaken under the Barcelona Convention, in September 2016 a relevant Memorandum of Understanding has been signed between the Italian Ministry for Environment, Land and Sea (IMELS) and UNEP/ MAP, funded by IMELS (EUR4.5 million).
- (e) One the four components of the project refers specifically to marine litter and includes three work streams:
 - i. Fishing for Litter and Port Reception Facilities
 - ii. Initiatives to identify gaps and issues to better understand the topic of sea-based sources (implementation of MARPOL Annex V – G7 Marine Litter Action Plan)
 - iii. Assessment of ML hot spots at sea in areas close to selected SPAMIs (Special Protection Area of Mediterranean Interest), with a focus on developing a common methodology for hot spot accumulation assessment

All the activities include public awareness initiatives.

Japan

■ Policy framework

- (a) National Action Plan for Marine Plastic Litter (formulated in 2019)

In May 2019, Japan formulated the “National Action Plan for Marine Plastic Litter.” Focusing on how to prevent outflow of plastic litter to the ocean, this action plan lists effective countermeasures to realise a world without additional pollution by plastic in the following eight fields:

- i. Promotion of proper waste management system
- ii. Prevention of littering, illegal dumping and unintentional leakage of waste into the oceans
- iii. Collection of scattered waste on land
- iv. Recovery of plastic litter in the oceans
- v. Innovation in development of alternative materials and conversion to those
- vi. Collaboration with stakeholders
- vii. International cooperation for promoting measures in developing countries
- viii. Survey on actual situations and accumulation of scientific knowledge

Related URL: https://www.cas.go.jp/jp/seisaku/kaiyo_plastic/dai1/plan.pdf

KSA

■ Policy Framework

- (a) In December 2017, the Saudi Council of Ministers approved the National Environmental Strategy (NES). The main outcome of the strategy was the establishment of five new environmental centres and an environment fund.
 - i. National Center for Environmental Compliance (NCEC)
 - ii. National Waste Management Center (NWMC)Related URL:
<https://www.mewa.gov.sa/en/Ministry/initiatives/SectorStratigy/Documents/6.%20BAH-MEWA-KSA%20NES-CEDA%20Executive%20Summary%20v3%2020180221%20ENG.pdf>
- (b) KSA has updated environmental regulations and the corresponding executive regulations for KSA, including waste management compliance.
- (c) KSA is updating waste management regulations with national strategic outcomes.
- (d) KSA has established regulations for the Ballast Water Management Agreement.
- (e) KSA has established executive regulations for the International Convention on the Control of Shipyards Resistant to Adhesion of Impurities with Harmful Effects.

■ Measures

- (a) As part of NES, the Ministry of Environment, Water and Agriculture (MEWA) has developed an initiative to establish the NWMC by the following measures:
Develop and Implement a Marine Litter Prevention Strategy: (Implementation date: October 2021)
 - i. Identifying existing initiatives and projects to align and incorporate in the strategy where needed
 - ii. Development and agreement on a comprehensive Marine Litter Prevention framework leveraging best practices
 - iii. Identifying target state and strategic goals to be achieved in line with the reduction, control and cleanup of marine litter
 - iv. Identifying marine litter prevention strategic initiatives and develop their charters
 - v. Proposal on a performance management framework including related KPIs
 - vi. Development of a detailed implementation plan
 - vii. Development of processes to periodically update the strategy
 - viii. Implementation of key projects of the strategy in coordination with all stakeholdersRecycling targeted quantities according to plastic waste management: 2030- 66%

Republic of Korea

■ Policy Framework

- (a) Section 1, Article 24, 'Marine Environment Management Act', 2008
- (b) The 3rd National Marine Litter Management Plan (2019-2023), 2019
- (c) Act on the Promotion of Saving and Recycling of Resources, 2017
- (d) Framework Act on Resources Circulation, 2018
- (e) The 1st National Resource Circulation Plan (2018-2027), 2018
 - i. In accordance with Section 1, Article 24, 'Marine Environment Management Act', the Ministry of Ocean and Fisheries of Korea (MOF) establishes 'National Marine Litter Management Plan' every five years to effectively collect and dispose of waste entering the ocean. The 3rd National Marine Litter Management Plan was established in December 2018 to tackle the marine litter issue with improved and enhanced marine litter policies compared to the previous two national plans. The 3rd National Marine Litter Management Plan consists of various policies ranging from collection of marine litter to risk assessment and research on microplastics.
 - ii. Also the Ministry of Environment of Korea (MOE) established its 'Comprehensive management plan for recyclable litter' based on the 'Act on the promotion of saving and recycling of resources', which highlights the role of stakeholders (government, manufacturers, and consumers) in building an environmentally-friendly production and consumption structure.
 - iii. MOE also established 'the 1st National Resource Circulation Plan' according to the 'Framework Act on resource circulation'. It aims to achieve a sustainable circulation economy through enhanced resource circulation. The major strategy of the plan is to establish waste to value infrastructure with public participation and to minimise the production of the waste.

Republic of South Africa

■ Policy Framework

- (a) National Coastal Management Programme of South Africa (2013):
 - Under this Priority Area, marine litter is regarded as a priority source of marine pollution.

Russia

■ Policy framework

- (a) National Project “Environment” (approved in 2018 by the Russian Government).
- (b) The “Environment” project comprises 11 Federal Projects. Some key federal projects are “Clean Volga” and “Clean Country”.

Singapore

■ Policy framework

- (a) Singapore addresses marine litter as part of a holistic approach to tackling pollution and waste. This includes legislation and regulations on pollution control and waste management, as well as an integrated solid waste management and collection system to minimise waste at source. The applicable legislation and regulations, as of October 2019, include:
 - i. Environmental Protection and Management Act (EPMA)
 - ii. Environmental Public Health Act (EPHA) and subsidiary legislation
 - iii. Sewerage and Drainage Act
 - iv. Sewerage and Drainage (Trade Effluent) Regulations
 - v. Prevention of Pollution of the Sea Act (PPSA)

Spain

■ Policy Framework

- (a) Marine Strategies, complying with the European Marine Strategy Framework Directive, include a Program of Measures on Marine Litter (2016-2021). The five Spanish Marine Strategies, one per each marine subdivision, were legally approved by Royal Decree 1365/2018, on 2 November 2018.

■ Measures

- (a) Development of an action protocol for lost or abandoned fishing gear that constitutes a threat to marine habitats
- (b) Rainwater management measures, with the aim of improving the retention of plastics. These measures include the installation of floating retention systems in rainwater spillways, the construction of storm tanks in large cities or the installation of separate networks in new developments
- (c) Inclusion of some measure in the future law on waste and contaminated soil (currently under preparation)
- (d) Prohibition of incineration or landfilling of waste collected separately for preparation for reuse and recycling

- (e) Measures to identify, prevent and reduce the products that constitute the main sources of scattered waste
- (f) Measures to reduce consumption of some plastic packaging
- (g) Obligation, from 1 January 2022, to classify the origin of plastic waste from the construction and demolition sector, as well as selective classification in the demolition sector
- (h) Creation of a national fishing litter scheme

The Netherlands

■ Policy framework

- (a) Policy programme on microplastics
- (b) European Marine Strategy Framework Directive

UK

■ Policy framework

- (a) 25 Year Environment Plan

The 25 Year Plan to Improve the Environment sets out how to improve the environment over a generation by creating richer habitats for wildlife, improving air and water quality and tackling marine plastic litter. Measures taken since launching the plan in January 2018 include:

- i. Setting out plans to ban plastic drinking straws, cotton buds and stirrers and extend the GBP0.05 plastic bag charge, and overhauling the waste system with a comprehensive Resources and Waste Strategy to reduce plastic waste
- ii. Agriculture Bill brought before Parliament to introduce a fairer, more sustainable system of environmental land management
- iii. Commitment to plans for the first Environment Bill in 20 years
- iv. Safeguarding forests and woodlands by starting the creation of a Northern Forest and appointing a Tree Champion
- v. Protection of precious wildlife habitats by launching a review to strengthen and enhance England's National Parks and Areas of Outstanding Natural Beauty
- vi. Protection of the marine environment by launching the Fisheries Bill, introducing one of the world's toughest bans on microbeads and consulting on 41 new Marine Conservation Zones
- vii. Combatting the illegal wildlife trade through introducing one of the world's toughest ivory bans and hosting the global Illegal Wildlife Trade Conference in London

Related URL:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

(b) Resources and Waste Strategy for England

- i. In December 2018 the UK published the Resources and Waste Strategy, an ambitious document that sets out how to preserve the UK's stock of material resources by minimising waste, promoting resource efficiency and moving towards a more circular economy.
- ii. The Strategy outlines plans to take action at each stage of the product lifecycle to encourage producers to take more responsibility for the environmental impacts of their products; reduce demand for single-use plastic; and make it easier for people to recycle.
- iii. The UK wants to increase the quantity and quality of material collected, which is why it has an approach focused on increasing the supply and demand for secondary materials to be recycled in the UK and reducing the need to export materials for recycling.
- iv. In general, the UK prefers to help people and companies make the right choice, rather than banning items outright. There may, however, be times when a ban is appropriate as part of a wider strategic approach to reduce the use of unnecessary single-use plastic.

Related URL:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

(c) UK Marine Strategy

The objective of the UK Marine Strategy reflects the UK's vision for 'clean, healthy, safe, productive and biologically diverse oceans and seas', by helping to deliver key international obligations and commitments to protect and preserve the marine environment under the UN Convention on the Law of the Sea (UNCLOS), the UN Sustainable Development Goal 14 (to conserve and sustainably use the oceans, seas and marine resources for sustainable development), the OSPAR North-East Atlantic Environment Strategy and the Convention on Biological Diversity. The Strategy applies an ecosystem-based approach to the management of human activities. In doing so, it seeks to keep the collective pressure of human activities within levels compatible with the achievement of Good Environmental Status (GES).

- i. The Marine Strategy Regulations (2010) requires the UK to take action to achieve or maintain GES in its seas by 2020.
- ii. The Regulations transpose the EU Marine Strategy Framework Directive (MSFD) into UK law and require the production of a "Marine Strategy" for all UK waters and that the approach is coordinated across all four UK Administrations. It also requires cooperation with other countries sharing the UK's seas.

(d) 2050 Maritime Strategy

This is the UK government's vision and ambitions for the future of the British maritime sector. Through this strategy the UK is committed to working with the International Maritime Organization (IMO) to tackle marine plastic litter. The UK has been actively working at the IMO to identify opportunities for improvement, particularly within MARPOL, which has resulted in an IMO Study on Marine Plastic Litter from Ships, International Regulatory Framework and an

Action Plan.

(e) British-Irish Council

The British-Irish Council was established as part of the multi-party agreement reached in Belfast on 10 April 1998. Its membership comprises representatives from the Irish Government; UK Government; Scottish Government; Northern Ireland Executive; Welsh Government; Isle of Man Government; Government of Jersey and Government of Guernsey. A summit was held in February 2019 which highlighted a number of marine environment issues that were of concern to all administrations including: tackling marine litter; marine biodiversity and Marine Protected Areas; and how to address ocean acidification. During this summit, Ministers agreed to ensure meaningful and swift action is taken to tackle marine litter around British and Irish islands and emphasised the utmost importance of this issue.

BIC has committed to “prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution” by 2025 as required by UN Sustainable Development Goal 14: Life Below Water.

Ministers have identified three different areas where they could collaborate further to ensure progress on this issue: establishing a system to facilitate the recycling of end-of-life fishing gear; co-operative working to further reduce the loss of pre-production plastics across the supply chain; and improving educational materials and modules on marine litter for young people and the fishing industry.

(f) Commonwealth Blue Charter & Commonwealth Clean Ocean Alliance

The Commonwealth Blue Charter is an agreement by all 53 Commonwealth countries to co-operate and collaborate to solve ocean-related problems and meet commitments for sustainable ocean development. To create change on the global stage, under the Commonwealth Blue Charter, the United Kingdom and Vanuatu are working together to lead an Action Group - the Commonwealth Clean Ocean Alliance (CCOA) - focused on tackling marine plastic pollution.

(g) DFID Waste Pilot Programme and Technical Assistance Facility (TAF)

This three-year programme of up to GBP13 million is part of wider UK Government efforts to address the problem of marine plastic pollution. This project will provide technical assistance and practical support to a number of poorer Commonwealth countries to improve waste management, to reduce marine plastic pollution. Specifically, the programme will provide;

- i. Up to GBP10m to support developing countries through a Technical Assistance Facility (TAF) who want to work with the UK and others to tackle plastic waste in the oceans under the Commonwealth Clean Ocean Alliance.
- ii. Up to GBP3m to pilot improved waste management approaches in cities in developing Commonwealth countries. The programme commenced in June 2018 and run until May 2021.

(h) BEIS Research and Innovation Framework

The Framework, owned by the UK Department for Business, Energy & Industrial Strategy (BEIS), will provide a platform and overarching structure for bringing together governments, industry, researchers and practitioners from across the Commonwealth to work together to tackle the issue of marine plastic pollution.

US

■ Policy Framework

The U.S. takes a comprehensive approach to addressing marine litter, specifically all materials in the waste stream, not just plastics. The following highlights this comprehensive approach.

(a) US Marine Debris Prevention and Removal Act (NOAA, USCG, EPA)

- i. Interagency Marine Debris Coordinating Committee – IMDCC – is the federal interagency coordinating body responsible for addressing marine debris. IMDCC is made up of eight agencies led by NOAA and EPA (Department of Defense, Department of Homeland Security, Department of the Interior, Department of Justice, Department of State, and Marine Mammal Commission)
- ii. IMDCC is primarily responsible for sharing information, assessing and implementing best management practices, and coordinating interagency responses to everyday marine debris and severe marine debris events.
- iii. IMDCC ensures coordination of federal agency research priorities, monitoring techniques, educational programs, and regulatory actions.
- iv. IMDCC is also responsible for recommending priorities and strategies, both nationally and internationally, to identify, determine sources of, assess, reduce, prevent, and mitigate the adverse impact of marine debris on the marine environment, natural resources, and vessels.

(b) Clean Water Act (EPA)

The Clean Water Act allows for states to list waters impaired by pollutants, including trash. Unless planned measures can be taken to address impairments (including trash), the Act requires that states or US EPA develop Total Maximum Daily Loads for those pollutants.

(c) Resource Conservation and Recovery Act (EPA)

The Resource Conservation and Recovery Act (RCRA) charges EPA to protect human health and the environment from potential hazards of waste disposal; conserve energy and natural resources; reduce the amount of waste generated; and ensure that wastes are managed in an environmentally sound manner by establishing minimum national criteria for solid waste facilities. RCRA regulations are typically implemented by states and/or at the local-, county-, or municipal-level, with state or local governments having the option to put forth regulations that are more stringent than the national standards. These national standards are critically important

to ensuring the sound management of solid waste national-wide. Facilities that do not meet these standards are considered open dumps that must close. EPA implements the conservation mandate through its Sustainable Materials Management Program. Recycling and waste diversion programmes also are primarily implemented at the state and local-levels.

Related URL: 2016-2017 Interagency Marine Debris Coordinating Committee Biennial Report: https://marinedebris.noaa.gov/sites/default/files/imdcreport_2016_2017.pdf

■ Measures

(a) Marine Debris Act (NOAA, USCG)

- i. Establishment of NOAA Marine Debris Prevention (MDP) and Removal Program
- ii. Instructions to NOAA to undertake marine debris mapping, identification, impact assessment, prevention, and removal efforts
- iii. Charging NOAA with improving efforts to reduce adverse impacts of abandoned, lost and derelict fishing gear (ALDFG)
- iv. Establishment of an Interagency Marine Debris Coordinating Committee
- v. Charging NOAA, USCG, and Committee with defining “marine debris”
- vi. Adding definition for and consideration of “Severe Marine Debris Events” to NOAA MDP program components
- vii. Encouragement of US Trade Representative to consider marine debris in future trade agreements
- viii. Setting forth Coast Guard Program regarding MARPOL

■ Achievements

(a) Marine Debris Act

- i. Development of ten subnational (US state or regional) action plans to coordinate and spur local action to address marine debris
- ii. Development of ten emergency response guides to aid local US authorities in preparing for severe marine debris events, from storms, hurricanes, etc., and to assist in faster responses to such events
- iii. Allocation of over USD20 million in funding provided to local partners for removal, prevention and research initiatives

European Union

■ Policy Framework

- (a) Emphasis on prevention of litter from both land- and sea-based sources is the cornerstone of EU policies against plastic pollution of oceans and the seas. Clean-up actions can be meaningful when litter accumulations create serious risks for marine or coastal biodiversity and

habitats or negative socioeconomic effects. The EU is furthermore committed to close collaboration with its neighbours within the four Regional Seas Conventions around Europe and with other non-EU countries in global fora such as UN, G20 and G7.

- (b) The EU Strategy for Plastics in a Circular Economy (2018) is the first EU-wide policy framework adopting a material-specific life-cycle approach integrating design, use, reuse and recycling. As part of the Strategy, the EU adopted a new Directive on the reduction of the impact of certain plastic products on the environment (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, aiming to reduce the discharges from ship generated waste, including from fishing vessels.

Related URL:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:28:FIN>
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904>

- (c) Other EU instruments that help tackle marine litter include the Marine Strategy Framework Directive (2008), a new Directive on Port Reception Facilities for the delivery of waste from ships (2019), the EU's International Ocean Governance Agenda (2016) and the Urban Waste Water Treatment Directive.

Related URL:

https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0883>
https://ec.europa.eu/maritimeaffairs/policy/ocean-governance_en
https://ec.europa.eu/environment/water/water-urbanwaste/legislation/index_en.htm

- (d) The European Commission has started preparatory work to restrict microplastics intentionally added to products, e.g. in cosmetics or detergents, as well as to reduce emissions of microplastics from other sources, such as tyres, textiles and pre-production plastic pellets.
- (e) More generally, the EU's long tradition of legislation on waste (starting in the 1970s and over the years developed into a comprehensive body of legislation) plays an important role in preventing marine litter. As part of the shift towards a circular economy, an important review of the waste legislation took place and the ensuing legislative proposals adopted in 2018 introduced the world's most ambitious waste-management targets and strengthened provisions on waste prevention. Today EU's waste policy includes:
- i. Horizontal legislation setting the main definitions and principles
 - ii. Laws on how waste should be treated
 - iii. Legislation on specific products or so-called waste streams (many of which will be further modernised in the years to come)

Related URL: https://ec.europa.eu/environment/waste/target_review.htm

■ Measures

(a) Marine Strategy Framework Directive

The Marine Strategy Framework Directive (MSFD, 2008/56/EC) was the first EU legal instrument to explicitly address marine litter; it requires “Good Environmental Status” for marine litter to be achieved by 2020, i.e. that “properties and quantities of marine litter do not cause harm to the coastal and marine environment”. Assessment of the status, target setting, monitoring, reporting and implementation of measures related to marine litter and microlitter are carried out in accordance with relevant MSFD provisions and have been further specified within a Decision by the European Commission (2017/848/EU). The Commission assessment of the measures submitted by the EU Member States was published in July 2018¹. Implementation of MSFD activities against marine litter is supported by the MSFD Technical Group on Marine Litter², bringing together experts from Member States, Regional Sea Conventions, NGOs, umbrella organisations and scientific project leads. It acts as an advisory group to the policy process and links science with policy, providing guidance and recommendations on relevant issues such as harm caused by marine litter, sources of marine litter and riverine litter. Importantly, it has been tasked to develop baseline quantities and threshold values for marine litter and microlitter pursuant to the abovementioned Commission Decision.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0562&from=EN>

² http://mcc.jrc.ec.europa.eu/dev.py?N=41&O=434&titre_chap=TG%20Marine%20Litter

3. Measures and Achievements

3.1. Prevention and reduction of plastic waste generation

On land actions taken by countries include Extended Producer Responsibility (EPR) (seven countries reported); addressing the use of Single-use plastics at regulatory and/or voluntary basis (ten countries reported); promoting environmentally-friendly product design; and regulating the use of microbeads for cosmetic and personal care products (eight countries reported).

Actions at sea reported by countries include identifying actions to prevent litter; and encouraging passive fishing.

Some countries, such as Australia, France, Germany, Indonesia, the Netherlands, and UK, reported concrete achievements with quantitative data.

Australia

■ **Measures**

- (a) Ban on exports of waste plastic, paper, glass and tyres

In August 2019 all Australian governments agreed to ban the export of waste plastic, paper, glass and tyres, while building domestic capacity to generate high value recycled commodities and associated demand. A timetable and strategy for implementing these bans is currently under development.

■ **Achievements**

- (a) The Australian Government is supporting the Australian Packaging Covenant Organisation (APCO) to deliver industry-led national packaging targets by 2025 to make 100% of packaging reusable, recyclable or compostable. Furthermore, 70% of plastic packaging will be recycled or composted, 30% of average recycled content will be included in packaging, and problematic and unnecessary single-use plastic packaging will be phased out. Further information is available at <https://www.packagingcovenant.org.au/>.
- (b) Australian governments committed to a voluntary phase-out of microbeads in 2016, and 94% of cosmetic and personal care products are now microbead-free.

Canada

■ **Measures**

- (a) The Government of Canada has over 10 federal acts, regulations and agreements that contribute to the prevention of marine plastic litter, including microplastics. In particular, the Canada Shipping Act and the Canadian Environmental Protection Act, 1999 (CEPA 1999) prohibit the discharge or disposal of litter in Canadian waters. The Fisheries Act prohibits the

deposit of deleterious substances into domestic waters frequented by fish and prohibits serious harm to fish and fish habitat. In addition, the Species at Risk Act contains a provision for the protection of Critical Habitat for listed species, including the marine environment for aquatic species at risk. Notably, the Microbeads in Toiletries Regulations prohibit plastic microbead-containing toiletries, such as bath and body products, skin cleansers and toothpaste. In November 2016, Canada amended the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations to define as “hazardous” any waste, including household waste that is considered hazardous or controlled by an importing country that is a Party to the Basel Convention. A Canadian exporter must seek a permit before exporting hazardous waste to another country.

Related URL: <https://www.canada.ca/en/health-canada/services/chemical-substances/other-chemical-substances-interest/microbeads.html>

- (b) Canada will also ban single-use plastics that cause harm, where warranted and based on scientific evidence, and to take other actions to reduce plastic waste. As part of this process, Environment and Climate Change Canada and Health Canada are currently working on a science assessment of plastic pollution, which will be made available to the public for comment. The development of any regulatory measures, including which products will fall under the definition of single-use, will be informed by science and socio-economic considerations. There will be engagement and consultation with stakeholders throughout the development, management, and there will also be a review of potential regulations or other measures.

Related URL: <https://pm.gc.ca/en/news/news-releases/2019/06/10/canada-ban-harmful-single-use-plastics-and-hold-companies-responsible>

- (c) In addition, a range of policies, programmes and regulatory initiatives at all levels of government drive improvements in the production, use and disposal of materials. Provincial, territorial and municipal governments have implemented regulatory (e.g. bans, levies, extended producer responsibility programs, litter by-laws) and non-regulatory measures (e.g. educational campaigns, recycling and deposit programs) that target some plastic products and other wastes. All provinces and territories have regulated extended producer responsibility programmes in place, excluding Nunavut. For instance, there are over 160 regulated and voluntary stewardship programmes in Canada covering more than 20 product categories including packaging and beverage containers. Municipalities also have local waste programming and anti-litter bylaws in place. These efforts play an important role in collecting plastics from households and other sources that help to reduce marine debris.

■ Achievements

- (a) In June 2017, the Government of Canada published the Microbeads in Toiletries Regulations, listing microbeads in Schedule 1 of the Canadian Environmental Protection Act, 1999. The regulations prohibit the manufacture, import, and sale of toiletries used to exfoliate or cleanse

that contain plastic microbeads, including non-prescription drugs and natural health products started on 1 January 2018 with a complete ban from July 2019. The regulations help protect the environment by reducing the quantity of plastic microbeads entering Canadian aquatic ecosystems.

China

■ Measures

- (a) Implementation of the circular economy, products life cycle management, sustainable material management and reduction of use, reuse, recycling ("3R") actions
- (b) Prohibition of the dumping of domestic production waste such as port terminals, breeding fishing and platform ships into the sea
- (c) Incorporating the prevention and control of marine garbage pollution into the pilot project of the "Bay Chief System" and promoting the special treatment of marine debris
- (d) Ban on disposable plastic bags
- (e) Establishment of a system of marine environmental sanitation

■ Achievements

- (a) Promoting the use of reusable and recyclable "green" express delivery boxes

France

■ Measures

- (a) On-land actions:
 - i. Ban on plastic carrier bags
 - ii. Reinforcement of extended producer responsibility schemes and development of new ones (cigarette butts, wipes, fishing gears, etc.)
 - iii. Active participation in the writing and adoption of the European directive on single-use plastics; ban on single-use plastic items listed in the European directive as well as cotton-buds and microbeads
- (b) Actions on rivers and waste and rain water:
 - i. Quantification of the litter carried through rivers
 - ii. Quantification of the litter carried through waste water
 - iii. Identifying areas where litter accumulates in rivers
 - iv. Identifying the actions/tools to prevent or recover litter in rivers and waste and rain water and experiments on them
 - v. Evaluation of the discharge of litter by rain water and elaboration of strategies for action
 - vi. Definition of a common methodology to monitor riverine litter and microplastic pollution

- (c) Actions on the seashore and at sea:
 - i. Monitoring of litter on beach sediments and at sea
 - ii. Determining the areas where litter accumulates at sea and on the coastline and the possibility of actions
 - iii. Identifying and putting in place actions to improve litter collection in ports in link with the European directive
 - iv. Encouraging and developing passive fishing for litter actions

■ Achievements

- (a) On-land actions:
 - i. Development of extended producer responsibility schemes (still on-going) and extension of the scope of separate collection of plastic packaging for all households (recycle bins accepting all kind of plastic packaging, instead of just bottles and jars) : already two-thirds of the national population are carrying out such collection activities, and this will be 100% in 2022)
 - ii. Prohibition of plastic carrier bags
- (b) Actions on rivers and waste and rain water:
 - i. Quantification of litter carried through rivers
 - ii. Quantification of litter carried through waste water
 - iii. Organisation of a workshop to identify the different methodologies to monitor riverine microplastic pollution in the OSPAR area (regional sea convention)
- (c) Actions on the seashore and at sea:
 - i. Monitoring of litter on beach sediments and at sea conducted according to the MSFD requirements and thanks to NGOs (beach clean-ups, development of large litter bins and of an application to monitor the litter on the beach –<https://bacamaree.fr/>-, etc.)
 - ii. Fishing for litter initiatives (by fishermen) are occurring but will be further developed

Germany

■ Measures

- (a) The 'Five Point Plan' focuses on the following areas on the path away from a throwaway society:
 - i. Avoiding unnecessary products and packaging – and if need be, outlawing them. This applies, for example, to certain single-use plastic products such as carrier bags, cutlery, plates, straws etc., but also to the deliberate use of microplastics in cosmetics.
 - ii. Making packaging more environmentally-friendly, supporting reusable packaging.
 - iii. Promotion of environmentally-friendly product design, for example through financial incentives with regard to disposal costs.

- iv. Making material flows circular through smart, high-quality recycling.
- v. Being internationally committed to combating marine litter and using plastic sustainably

Related URL:

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/5_punkte_plan_plastik_181123_bf.pdf

- (b) With regard to packaging, the above-mentioned measures of the 'Five Point Plan' are already mostly implemented by the new German Packaging Act, which entered into force at the beginning of 2019. The Packaging Act is based on the principle of producer responsibility and includes inter alia very high recycling rates for most packaging waste, financial incentives for the avoidance of packaging and the use of recycling-friendly packaging, a deposit scheme for single-use beverage packaging and several awareness-raising obligations for packaging distributors.
- (c) The first point of the "Five Point Plan" is addressed by the so-called European Single-Use Plastic Directive. This directive entered into force on 2 July 2019. It addresses those single-use plastic products that are found the most on beaches of the European Union as well as fishing gear containing plastic and products made from oxo-degradable plastic. The directive mainly contains measures with regard to consumption reduction, restrictions on placing on the market as well as product and marking requirements. Currently, the Federal Ministry for the Environment is working intensively to ensure that this directive is included in national measures by 3 July 2021.

■ Achievements

- (a) The National Cosmetics Dialogue has contributed to triggering activities at the European level. The European association, Cosmetics Europe, informed that it aims to reduce use of microplastic particles in rinse-off cosmetics by about 97% by the end of 2017.

Indonesia

■ Achievements

- (a) Ministry of Environment and Forestry finalised the roadmap of producers' waste reduction programme in line with the Extended Producer Responsibility (EPR) approach. Three sectors are specifically regulated in this roadmap: (1) brand-owner manufacturers, (2) retailers, and (3) food and beverage service industry (hotels, restaurants, cafes & catering companies). The roadmap intends to provide a guideline on how producers should reduce waste that is generated from their product and packaging, especially those made from plastic. Actions suggested in the roadmap include: (1) to avoid unnecessary use of single-use plastic products, including in packaging, (2) to re-design product/packaging so that become more recyclable and reusable, and (3) to manage post-consumer plastic products to be recycled and reused.

- (b) As for phasing out single-use plastic, two provincial governments and 19 cities/regencies have banned or are planning to ban plastic shopping bags, plastics straws, and plastic foam (known as styrofoam).

Italy

■ Measures

- (a) Plastic free campaign (#PFC) is an initiative aimed at reducing single-use plastics in public and private offices.

On 12 June 2018 the Italian Minister of the Environment launched the initiative “Plastic Free Challenge (#PFC)”, a campaign that aims to involve as many people, companies and institutions as possible, to commit themselves to eliminating single-use plastics. The Minister extended the appeal to other national and local institutions (Ministries, Regions, Municipalities, etc.) and invited everyone to tweet their commitment to free themselves from plastics with the hashtag #PFC.

- (b) The Ministry of the Environment has therefore adopted a set of measures aimed at the elimination of single-use plastics, including:
- i. Elimination of plastic beverage bottles from vending machines
 - ii. Installation of natural or sparkling water dispensers
 - iii. Free distribution to employees of reusable aluminum bottles
 - iv. Replacement in vending machines of plastic cups with paper ones, and of plastic stirrers with wooden ones
 - v. Elimination of single-use products in the Ministry's kindergarten.

The initiative is voluntary. Dozens of local authorities and institutions have already joined the campaign and the number is still increasing. The list of campaign participants is published on the website of the Ministry of Environment.

KSA

■ Achievements

- (a) National Environmental Strategy
- (b) Environmental Centers and Environment Fund
- (c) Updated standards & Regulations
- (d) Saudi Investment Recycling Company (SIRC), established in 2017 to develop, operate and invest in various activities in all types of waste

Republic of Korea

■ Measures

Enhance management of sea-based sources

- (a) Introduction of a deposit system for fishing gear and buoys
 - i. Project for supporting voluntary recovery of waste Styrofoam buoys:
 - Fishermen voluntarily dispose of waste Styrofoam buoys, while the nation supports disposal, simultaneously carrying out information management such as monitoring usage and collection amounts
- (b) Strengthening management of derelict fishing gear
 - i. Pushing forward a project for voluntary recovery of waste fishing gear:
 - Expand and implement voluntary recovery projects currently underway for waste Styrofoam buoys to waste fishing gear
 - ii. Strengthening the management of substandard fishing gear:
 - A total ban on manufacturing, use, import and distribution of substandard fishing gear which results in ocean dumping
 - iii. Expansion of the distribution of biodegradable fishing gear, improvement in performance of biodegradable fishing gear by type of fish and studies on its commercialisation:
 - Development of eco-friendly fishery equipment including fishing gear and nets etc. (develop new designs and alternative materials)

Enhanced management of land-based sources

- (a) Building waste filtering curtain at rivers and estuaries
 - i. Install additional barriers in sea areas where a huge amount of land-based waste is generated resulting from floods and typhoons and improve the efficiency of debris barriers
- (b) Managing and minimising microplastic usage in daily products
 - i. Korea banned microplastic usage in cosmetics and medical products, so in line with this policy, the Korean government will conduct research on microplastic usage in daily products and come up with management measures
- (c) Reduce the usage of packing materials, and single-use plastic products

Enhanced management of foreign-based sources

- (a) Cooperation with neighbouring countries
 - i. Through the Northwest Pacific Action Plan (NOWPAP) which is one of UNEP's regional sea programmes, four member states (Korea, Japan, China, Russia) are sharing marine litter data and discuss how to tackle marine litter problems in the Northwest Pacific region.
- (b) Launch of international marine plastic litter task force team
 - i. In August 2019, the Ministry of Oceans and Fisheries launched an international marine litter taskforce team in collaboration with the Ministry of Environment and multiple national research organisations. It will focus on identifying the detrimental effects of foreign-based marine litter and responding to the issue through effective countermeasures.

Republic of South Africa

■ Measures

- (a) Cosmetic and Fragrance Association of South Africa: voluntary phase-out of microbeads in rinse-off personal care products

Russia

■ Achievements

- (a) Social impact.

Large retail chains voluntarily refuse free disposable plastic bags: more customers are taking multi-use bags for shopping.
- (b) Other.

Replacing utensils with biodegradable ones made of natural plant materials such as bamboo, cork, and palm leaves. These kinds of materials are not typical for Russia, therefore they are expensive. Therefore studies are required to develop production from Russian raw materials (e.g. miscanthus).

Spain

■ Measures

- (a) Prevention. Sea-based sources.
 - i. Implementation of a non-special fee cost recovery system for waste collection from vessels in regional ports (already implemented in national ports since 2011). This is in line with the new European Directive 2019/883 of Parliament and of the Council on port reception facilities for the delivery of waste from ships. The new European Directive will be transposed to national legislation and implementation will follow accordingly.
 - ii. Promotion of projects and initiatives for:

- Innovation in materials for fishing sector processes and technologies.
- Improving waste management on board in fishing vessels or aquaculture facilities.
- Analysis of the possibility of recycling specific fishing materials as EPS boxes or fishing nets.
- Improving waste facilities in fishing and recreational ports

Funds will be managed by Biodiversity Foundation through a call for projects (PLEAMAR) in the framework of European Maritime and Fisheries Fund Spanish Operative Programme.

iii. Improvement of waste management in ports.

(b) Prevention - Land-based sources.

- i. Study on characteristics and amounts of microplastics from wastewater treatment plants.
- ii. Research on ecological aspects of microplastics. Co-financing Pilot action JPI Oceans 2015-2018. Projects: BASEMAN, EPHEMARE, PLASTOX.
- iii. Study on sources of microplastics (national scope). Published:
https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/23-414-5-010_informe_identificaciondefuentesyestimaciondeaportesdemicroplasticos_tcm30-486438.pdf

Additionally, methodologies to monitor macrolitter and microplastics in rivers are being developed, as rivers are a main pathway of litter into the sea.

■ Achievements

- (a) A programme of measures on marine litter is under implementation until 2021. The progress made on each measures is variable.

The Netherlands

■ Measures

- (a) Extended Producer Responsibility on 'throw-away plastics' (SUP-directive).
- (b) Clothing: Research Institute for Health and the Environment (RIVM) recently published a study on possible measures to prevent microplastics from clothing. Next steps are currently being discussed with the sector.
- (c) Product policy
 - i. Two plastic products received additional attention in the MSFD programme of measures: specifically, balloons were added to the awareness campaign. The Cabinet seeks to restrict the simultaneous release of large numbers of balloons and to disseminate information on possible alternatives.
 - ii. Cosmetics (see below - part on measures at EU-level)

■ Achievements

- (a) The OSPAR assessments for beach litter, seabed litter and plastic in the stomachs of specific species of seabirds show that litter (including mostly plastic) is common on the beaches, in the water column and on the seabed of the North Sea. At North Sea level, there is still no indication of any significant decrease in beach and seabed litter. However, a significant decrease has been observed in plastic found in the stomachs of northern fulmars for both the wider North Sea area as well as for birds washed up on the Dutch coast. In addition, a significant decrease has been observed, for the first time, in the total number of litter items on Dutch beaches.
- (b) Last year the campaign on tyres resulted in 250,000 extra cars with the right tyre pressure, which prevented an estimated 5-10 tonnes of microplastic emissions into water.

UK

■ Achievements

- (a) The plastic carrier bag charge is to be extended to small business and likely to be increased to be GBP 0.1 – building on previous GBP0.05 levy on plastic bags, which has reduced bags by 15 billion.
- (b) There is a HMT commitment to tax on the production and import of plastic packaging with less than 30% recycled content (subject to further consultation).
- (c) Work has been done with wet wipe manufactures to address issue of flushability; ‘fine to flush’ is now in operation. Wet wipes are often partly made of polyester, a form of plastic that does not deteriorate like, for example, a tissue might do. This is woven together with cotton, but as a whole means wipes remain together in waterways for a long time.
- (d) The UK led the world in banning the manufacture and sale of personal care products containing plastic microbeads.
- (e) In May 2019, the UK announced a ban on plastic straws, stirrers and plastic stemmed cotton buds from April 2020.

US

■ Measures

- (a) Resource Conservation and Recovery Act (EPA) Voluntary Programs
 - i. Sustainable Materials Management Electronics Challenge – EPA runs this challenge to encourage electronics manufacturers, brand owners and retailers to improve and adopt sustainable materials management approaches. Each year, EPA gives awards to companies that both increase volumes of materials collected through “take-back” programmes and recycled at third party-certified responsible electronics recyclers, and can showcase innovative ways they are managing materials, such as closing the loop on

plastics recycling and using renewable packaging materials.

- ii. WasteWise – EPA works with businesses, governments, and nonprofit organisations to promote the use and reuse of materials more productively over their entire life cycles. Partners demonstrate how they reduce waste, practice environmental stewardship and incorporate sustainable materials management into their business model, including their waste-handling processes. Benefits of joining WasteWise include reduced costs for purchasing and waste disposal and opportunities to receive WasteWise Awards for outstanding achievements.
- iii. Facts and Figures Report – EPA began collecting and reporting data on the generation and disposal of waste in the United States more than 30 years ago. EPA releases an annual report, Advancing Sustainable Materials Management: Facts and Figures, to provide information on Municipal Solid Waste (MSW) generation, recycling, composting, combustion with energy recovery and landfilling. The report analyses MSW trends in generation and management, materials and products, and economic indicators affecting MSW. Facts and Figures reports contain data through calendar year 2015; 2016-17 data are planned to be published in late 2019.

■ Achievements

(a) Resource Conservation and Recovery Act (EPA) Voluntary Programs

- i. Sustainable Materials Management Electronics Challenge – In 2017, EPA gave Dell an Honorable Mention in the Cutting-Edge Champion Award category of this programme for their work in collecting ocean-bound plastics in Haiti and using these plastics in computer parts. Dell was previously awarded for working to establish a closed loop plastics recycling stream (2016) and for replacing much of their product packaging with renewable materials (2015). The programme also awarded LG in 2017 for sustainability achievements in the design of their OLED line of televisions that included making sure all plastic parts were labelled to facilitate recycling.

European Union

■ Measures

(a) Plastics Bag Directive

The 'Plastic Bags Directive' (2015) amends the Packaging and Packaging Waste Directive 94/62. The Directive requires Member States to take measures to achieve a 'sustained reduction in the consumption' of lightweight plastic carrier bags, such as national reduction targets and/or economic instruments (e.g. fees, taxes) and marketing restrictions (bans), provided that the latter are proportionate and non-discriminatory. The Directive sets targets that annual consumption would not exceed 90 bags per person by 2019, 40 by 2025, and/or that by

end of 2018 such bags would not be free of charge at the point of sale. Compared to the baseline scenario (2010) this is a 50% reduction in consumption by 2019 and a 80% reduction by 2025

By June 2020, Member States are to report data for the first time on annual consumption for 2018 (starting May 2018).

(b) Directive on the reduction of the impact of certain plastic products on the environment (SUP Directive)

This Directive will significantly reduce the amount of marine litter from single-use plastics (SUP) and fishing gear by 2030. As regards SUP, the Directive includes the following measures:

- i. Extended Producer Responsibility (EPR) schemes to ensure that producers will help cover the costs of waste management and clean-up, data gathering and awareness raising for the following single-use plastic products: tobacco products with filters, drink bottles, packets and wrappers, wet wipes, drinks cups (including their cover and lids), food and beverage containers, balloons, and lightweight carrier bags;
- ii. Product design measures for drink bottles related to tethered caps and lids, and a binding target of at least 25% of recycled plastic for PET beverage bottles from 2025 onwards and 30% recycled content for all plastic bottles by 2030;
- iii. Consumption reduction measures for single-use plastic versions of drinks cups (including covers and lids), and food containers;
- iv. A ban of single-use plastic versions of cotton bud sticks, balloon sticks, cutlery, plates, straws and stirrers; and beverage containers and cups made of expanded polystyrene (including their caps/covers and lids);
- v. A general ban on oxo-degradable products;
- vi. A 90% separate collection target for waste from single-use plastic bottles either by Deposit Refund Schemes or improved EPR schemes by 2029 (interim target of 77% by 2025);
- vii. Marking requirements for sanitary towels, wet wipes, tampons and tampon applicators, tobacco products with filters and cups for beverages, indicating how waste should be disposed of, presence of plastic in the product and resulting negative environmental impact.
- viii. Awareness-raising measures on food containers, cups for beverages, balloons, packets & wrappers, beverage containers, tobacco product filters, wet wipes, lightweight plastic carrier bags.

With respect to fishing gear, the Directive foresees the introduction of EPR schemes for producers of fishing and aquaculture gear containing plastic who will have the financial responsibility to cover the costs of its separate collection, subsequent transport and treatment. These measures are complemented by providing financial incentives for ships, including fishing vessels, to maximise delivery of waste gear to shore, foreseen under the Port reception

facilities Directive. This will contribute to ensuring the full integration of plastic material from fishing gear into the waste and recycling stream, the involvement of producers of plastic material for fishing gear in managing waste fishing gear returned to shore and higher recycling rates for high quality fishing gear material. The EU is also currently looking at the development of a harmonised standard for circular design of fishing gear, to encourage its preparation for reuse, and to facilitate its end-of-life recyclability.

Related URL:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904&from=EN>

3.2. Environmentally-sound waste management and cleanup of marine plastic litter

Environmentally-sound waste management includes improvement of waste management and recycling systems (reported by 13 countries); clean-up activity at river and coast (reported by 12 countries); and actions on fishing gear (reported by eight countries).

Some countries, such as Brazil, China, France, Japan, Republic of Korea, Republic of South Africa, and US, reported concrete achievements with quantitative data.

Australia

■ Measures

(a) National Action Plan to implement the 2018 National Waste Policy

The 2018 National Waste Policy recognises reducing plastic pollution as a priority. All Australian governments are working together to develop an Action Plan to deliver the Policy. The Plan will include ambitious national waste reduction and recycling targets, and will give focus to reducing plastic pollution, supporting industry development, increasing demand for recycled materials through procurement, and a national approach to waste policy and regulation.

(b) Australian Recycling Investment Plan

The Australian Government has committed to an AUD167 million Australian Recycling Investment Plan to increase Australia's recycling rates and tackle plastic waste and litter, and accelerate work on new recycling schemes. The Plan includes AUD100 million to support the manufacture of products using recycled materials (including plastics), AUD20 million to find new and innovative solutions to plastic recycling and waste, AUD16 million toward a Pacific Ocean Litter Project, and more than AUD11 million for community campaigns to reduce litter and clean up beaches and waterways.

(c) Marine Debris Threat Abatement Plan

Australia is implementing the Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans. The plan is available at <https://www.environment.gov.au/biodiversity/threatened/publications/tap/marine-debris-2018>.

■ Achievements

(a) National Waste Reports

Australia's National Waste Reports describe Australia's national performance on waste and recycling. The Reports presents data and commentary on waste generation, recovery and fate for all waste streams and various material categories. It also analyses this information by jurisdiction and on a per capita basis. More information is available at: <http://www.environment.gov.au/protection/waste-resource-recovery/national-waste->

Brazil

■ Measures

(a) The National Plan to Combat Marine Litter:

Waste Management

- i. Support for municipalities in the elaboration of their solid waste management plans
- ii. Development of business plans for cooperatives of recyclable material collectors
- iii. Boosting implementation of selective collection of recyclable materials in coastal cities

Prompt Answer

- i. Clean-up activities in the cities, beaches, mangroves and rivers
- ii. Installation of recyclable material delivery spots in the cities
- iii. Installation and operation of “ecobarriers” (devices installed in rivers and canals that prevent waste from flowing into the ocean)

Cross-sectoral Commitments

- i. Engaging the private sector to implement sound practices
- ii. Evaluation of mechanisms of bounty for fishermen, divers and beach users by gathering and returning marine litter

Communication and Education

- i. Website for sharing good practices and experiences on marine litter combat
- ii. Development of a communication plan
- iii. Development of an education programme

Related URL: <http://www.mma.gov.br/agenda-ambiental-urbana/lixo-no-mar.html>

■ Achievements

(a) A total of 121 clean-up efforts were mapped along the Brazilian coast in 65 municipalities and 13 states, totaling 192,853.52 kilos of waste collected since the launch of the National Plan.

Canada

■ Achievements

- (a) Ministers endorsed a broader aspirational Canada-wide waste reduction goal (for all waste, including plastics). In 2014, every Canadian threw away on average 706 kg of waste. The new goal will reduce this number by 30% per person by 2030, with a 50% reduction by 2040.
- (b) Canada committed over CAD10 million domestically towards challenges to address plastic waste in the areas of food packaging, separation of mixed plastic, construction waste, glass fibre recycling, fishing and aquaculture gear, and bioplastics.

Related URL:

Reducing plastic waste in federal operations: <https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/government-canada-actions-plastic-waste-federal-operations.html>

China

■ Measures

- (a) Strengthening the recycling, reuse, recycling and environmentally sound disposal of plastic waste, and improving the ability to control plastic waste from the source into the marine environment
- (b) More clean-ups of marine debris and demonstrations of comprehensive prevention and control of marine garbage pollution in coastal cities
- (c) Active promotion of public participation in beach cleaning activities
- (d) Issuance of technical specifications for pollution control during collection and recycle of waste plastics

■ Achievements

- (a) From 2007 to 2018, non-profit communities have organised more than 160 beach clean-up activities, with around 10,000 volunteers involved and more than 20 tons of garbage collected.

France

■ Measures

- (a) On-land actions:
 - i. Prevention of leakage of preproduction plastic pellets into the environment through involvement of industries
- (b) Actions on rivers and waste and rain water:
 - i. Integration of objectives concerning planning documents for marine litter in inland waters
 - ii. Prevention of leaks of plastic filtering sieves from water treatment plants into the environment
- (c) Actions on the seashore and at sea:
 - i. Implementation of collection and recycling of fishing gear and aquaculture waste in line with the European directive
 - ii. Launch of a call for projects to tackle plastic pollution in overseas territories

■ Achievements

- (a) Total post-consumer plastic waste generation: 3.3Mt
- (b) Total of post-consumer plastics collected for recycling: 0.71 Mt.
- (c) The rest is either incinerated or disposed of in landfill.
Source: ADEME, Bilan national du recyclage, 2017 (amounts from 2014).
- (d) For plastic packaging, the latest figures are as follows:
 - i. Total amount of post-consumer plastic packaging waste : 2.2Mt
 - ii. Recycling rate: 26%
 - iii. Recovery rate 65% (including recycling)
Source: ADEME 2019 on 2017 tonnages.
- (e) Monitoring on beaches in 2018 (OSPAR protocol) - list of the top five items found:
 - i. English Channel and Northern Sea: rope, plastic/polystyrene pieces or items, lids/caps, plastic film
 - ii. Celtic Sea: aquaculture waste, plastic/polystyrene pieces or items, fishing gear
 - iii. Bay of Biscay: plastic/polystyrene pieces or items, rope, aquaculture waste, building material
 - iv. Western Mediterranean Sea: plastic/polystyrene pieces or items, lids/caps, cigarette butts, plastic film
- (f) Some data for beach clean-ups:
In 2018, in the Mediterranean, 13,064 people have gathered 774m³ of litter during cleanups.
- (g) Actions on rivers and waste and rain water:
Identification of actions/tools to prevent or recover litter from rivers as well as waste and rain water;
- (h) Actions on shore and at sea
A study on the port reception facilities has been conducted to underline the flaws in waste management at ports - an action plan will follow by 2020;

Germany

■ Measures

- (a) Participation in MEPC Correspondence Group on Development of a Strategy to address Marine Litter from Ships
- (b) Implementation of Directive (EU) 2019/883 on port reception facilities for the delivery of waste from ships is presently in progress

Indonesia

■ Measures

(a) Controlling Land-Based Leakage:

Marine litter, mostly plastics, potentially comes from urban activities and gets carried into the ocean via rivers, canals, drainage systems, storm water, sewerage systems, etc. The improvement of solid waste management to become more sustainable is key; it is vital to shift from end-of-pipe and linear solutions to 3Rs, EPR and circular solutions.

■ Achievements

(a) The Government of Indonesia has provided financial schemes to improve local government capacity in waste management including:

- i. National budget allocation to construct new landfills or rehabilitate existing landfills
- ii. Special budget allocation to construct solid waste management facilities such as composting facilities, waste bank facilities, collection & transportation vehicles, and recycling facilities. Special budget subsidy is allocated to local governments to pay additional tipping fee for operating and maintaining WtE facility
- iii. National incentive budget for local governments that succeed in preventing and reducing plastic waste generation.

Italy

■ Measures

(a) Agreement “Tuscany – fishing for litter”

In 2018 the Ministry of Environment, Land and Sea, local authorities, environmental NGOs, Port authorities, and private companies signed this Agreement. It provides a framework for the development of an innovative pilot project to promote proper waste collection and integrated management of plastic waste collected by fishermen during fishing operations. The project also promotes awareness of all stakeholders involved.

On the basis of the good results of this Agreement, a new and more ambitious Memorandum of Understanding is to be launched in due course. It will consider not only plastic waste but also other waste streams, and will involve more actors.

(b) “Salvamare” (“Save the Sea”)

Legislative proposal to promote circular economy by regulating the removal of plastic waste from the sea.

Mainly focused on plastic waste accidentally caught by fishermen, the legislative proposal also promotes a voluntary campaign of “cleaning the sea” carried out by environmental NGOs, as well as encouraging public awareness initiatives.

(c) Removal initiatives

In 2017-2018 the Ministry of Environment, Land and Sea signed agreements for the collection and management of waste found on the seabed of selected ports near marine protected areas. These agreements involve Port authorities, agencies in charge of the marine protected areas, municipalities, environmental associations, local fisheries and scuba diving associations. The objective of the agreements is to identify an integrated system for the collection and management of waste removed from the seabed, as well as using education and training initiatives for fisheries and diving associations to identify the best procedures and possibly extend them to other ports. Main activities within the agreement are:

- i. Provision of containers for the collection of waste removed from the seabed to fishermen and Marine Protected Area agencies
- ii. Identification of suitable sites for the delivery of waste and positioning of boxes and/or containers clearly identified for the separate collection of waste
- iii. Awareness and education activities oriented to the Marine Protected Areas visitors and to fisheries and scuba diving associations on the proper management of waste generated by these activities
- iv. Training activities on separate collection
- v. Promotion of virtuous behaviour oriented to the prevention and/or reduction of littering;
- vi. Awareness initiatives oriented to scuba diving professionals to report on any waste “hot spot” found out during their dives

Japan

■ Measures

(a) Comprehensive promotion of a proper waste management system

- i. Comprehensive enforcement of waste collection based on public cooperation for appropriate waste segregation and disposal practice, in accordance with waste management and recycle regulations
- ii. Installation of recycling facilities to increase recycling capability in Japan and improve recycling of polystyrene foam boxes used in fisheries, with updated technology
- iii. Promotion of collection and appropriate treatment of agricultural-generated used plastic in collaboration with related associations
- iv. Promotion of onshore collection and appropriate treatment of plastic wastes, such as used fishing gear to be disposed
- v. Smooth acceptance of ship-generated waste at ports

(b) Prevention of littering, illegal dumping and unintentional leakage of waste into the ocean

- i. Comprehensive monitoring and crackdown on violations of national laws (waste management law, marine pollution prevention law etc.) and local regulations (littering

prevention)

- ii. Focused monitoring patrol by national and local government during annual monitoring and patrol event “National illegal disposal monitoring week”
- iii. Support for beverage industry association to install PET bottle collection box beside vending machines aiming for 100% recycling
- iv. Prevention of illegal disposal through river patrols
- v. Prevention of unintentional leakage of plastics through appropriate use and proper management of fishing gear by fishermen

(c) Collection of scattered waste on land

- i. Further development of clean-up activities for towns, rivers, and beaches by residents and companies (Adapt Program)
- ii. Promotion of volunteer support programme for road cleaning
- iii. Promotion of clean-up activities and litter collection in cooperation with river administration authorities, local governments, and residents
- iv. Nationwide clean-up event during “Zero Marine Litter Week” symbolised by wearing something blue

(d) Removal of plastic litter from the ocean

- i. Support for the collection and treatment of coastal marine litter by local governments in accordance with Act on Promoting the Treatment of Marine Debris Affecting the Conservation of Good Coastal Landscapes and Environments to Protect Natural Beauty and Variety (hereafter “Marine Litter Act”)
- ii. Promotion of collection of marine litter by fishermen in collaboration with local governments/communities
- iii. Collection of floating marine litter by marine environment improvement vessel in enclosed sea areas, and by port administration authorities in port areas

■ **Achievements**

(a) Amount of waste plastic generated, recycled, heat recovered, incinerated without energy recovery, and land filled

		FY2014	FY2015	FY2016	FY2017	FY2018
Generated plastic		9,260kt	9,150kt	8,990kt	9,030kt	Under investigation
Proper treatment	Recycling	2,330k t	2,410kt	2,420kt	2,510kt	Under investigation
	Heat recovery	5,340kt	5,220kt	5,160kt	5,240kt	Under investigation
	Incineration of waste without energy recovery + landfill	1,580kt	1,520kt	1,400kt	1,280kt	Under investigation
	Total	9,260kt	9,150kt	8,990kt	9,030kt	Under investigation

(reference)

Amount of plastic discharged, recycled, heat recovered, incinerated without energy recovery and land filled, estimated by industry associations based on the amount of generated plastic and on information from questionnaires.

"The status of production, disposal, recycling and treatment of plastic products in 2017" (Plastic Waste Management Institute)

"The status of production, disposal, recycling and treatment of plastic products in 2016" (Plastic Waste Management Institute)

"The status of production, disposal, recycling and treatment of plastic products in 2015" (Plastic Waste Management Institute)

"The status of production, disposal, recycling and treatment of plastic products in 2014" (Plastic Waste Management Institute)

(b) Amount of marine litter collected

	FY2014	FY2015	FY2016	FY2017	FY2018
Total litter	41,978t	29,277t	29,943t	45,819t	Under investigation
Plastic litter (estimate)	15,300t	10,700t	10,900t	16,700t	Under investigation

(reference)

Comprehensive Investigation on Measures to Tackle Beach Debris (FY2016)

http://www.env.go.jp/water/marine_litter/pamph.html

Total litter: The above data describes the amount collected by local governments. Marine plastic litter: estimated by multiplying the volume of processed litter by the proportion of plastic litter calculated through sample survey.

Nationwide clean-up event during “Zero Marine Litter Week” was organised in May 2019 with about 400,000 people taking part.

(c) Collected amount of land-based litter, illegal dumping, and scattered waste, Estimated amount of collected plastic through clean-up and collection activities (FY2017): 91,320t; Amount of plastics (FY2017): 9,940t

(reference)

"Estimated amount collected by clean-up and collection activities":

Estimated amount, excluding the amount collected on the coast, based on the amount collected by prefectures and municipalities

"Amount proportion of plastics":

Estimated amount collected, based on the results of those local governments which have data on the amount of plastic

Republic of Korea

■ Measures

Distribution of environmentally-friendly buoys

(a) Expansion of the distribution of eco-friendly buoys in aquaculture farms where Styrofoam buoys are used, continued development of eco-friendly buoys capable of replacing existing Styrofoam buoys

Reduction in blind spots of collection

(a) Strengthening of waste management on islands

i. Establishment of a waste management system on islands

- Establish collection platforms on islands in order to collect island waste, which is highly likely to reenter the oceans, and build a management system including the deployment of marine debris cleanup vessels and vehicles based on results from waste management research on island regions

(b) Strengthening of sunken waste collection in distant sea areas

i. Collection of marine litter deposited in the EEZ

- The country provides support for disposal costs of deposited marine debris pulled up by fishermen during fishing operations, while the government directly will carry out a well-devised collection project for deposited marine debris in the future

ii. Collection of marine litter in areas where marine leisure activities take place etc.

- Establish a network with private diving associations, the military and coast guards to collect marine debris in vulnerable sea areas such as areas where marine leisure activities take place, as well as in Military Installation Protection Zones
- iii. Collection of waste in Korea-Japan, Korea-China Intermediate Waters:
 - Collect derelict fishing gear from Korea-Japan Intermediate Waters and the Korea-China Interim Measures Zone in order to improve the environment of fishing grounds and manage fisheries resources
- iv. Cleanup project for marine litter deposited in the Maritime Peace Zone of the Yellow Sea:
 - Lay the foundation to preserve the ecosystem and maintain the production of fishing grounds in the Maritime Peace Zone of the Yellow Sea, such as organising an Inter-Korean Joint Project Consultative Group, starting a pilot project and preparing a collection and disposal plan
 - Prepare a mid-to-long term plan and regularly conduct a status survey and collection project for marine debris
- (c) Expansion of existing sunken waste collection projects (fishing grounds and ports)
 - i. Strengthening of management of marine debris at ports managed by local governments
 - Identify the present status and management conditions of marine debris at ports managed by local governments and come up with measures for managing marine debris based on cooperation between the central and local governments
 - Regularly conduct collection and disposal projects for marine debris at fishing ports managed by local governments

Creation of a collection environment that encourages local participation

- (a) Incentives and rewards to local fishing communities
 - i. Voluntary participation of fishermen by providing incentives to fishing village cooperatives based on collection records when selecting an Autonomous Management Fishing Community and Fishing Experience Village
- (b) Strengthening of local government marine litter collection through financial support
 - i. Encouraging local governments to increase local finances and enhance local capacity of waste collection by increasing the ratio of the national subsidy (currently at 30 or 50%) and supporting the securing of cleanup vessels and equipment
 - ii. Discovering and supporting marine waste management projects considering a region's pending issues and management conditions while offering incentives such as awarding reward (prize money) based on the evaluation of management records of marine debris by local governments
- (c) Operation of Marine Environment Guard in collaboration with local residents
 - i. Project for supporting Guardians of the Ocean Environment
 - Deploy Guardians of the Ocean Environment, a dedicated management workforce, at hot spots of marine debris on a regular basis

Efficient collection system

- (a) Efficient marine litter collection system through marine plastic distribution map
 - i. Analysis of sea routes, fishing grounds and characteristics of ocean current to draw a distribution map of marine debris and then use it in the collection process
 - ii. Creation of a distribution map of marine debris by forecasting generation and movement routes of marine debris and then increase the efficiency of collection by utilising the information of hot-spots etc.
- (b) Development of vacuum microplastic cleaner devices
 - i. Developing technology to improve on the existing manpower-oriented collection scheme such as devices for removing microplastics at beaches as well as vacuum suction device and portable device for cutting fishing gear

■ Achievements

- (a) Total amount of marine litter collected (2014~2018)

(unit: ton)

Type	2014	2015	2016	2017	2018
Shoreline	53,129	48,547	41,997	48,053	48,464
Sunken	19,353	16,252	24,146	29,662	41,501
Floating	4,454	4,330	4,697	4,461	5,666
Sum	76,936	69,129	70,840	82,176	95,631

(Data from Marine Litter Information System) / www.malic.or.kr

- (b) Budget of marine litter collection project (2014~2018)

(unit: KRW1,000)

Type	2014	2015	2016	2017	2018
Shoreline	26,120,449	18,122,701	15,486,867	22,895,282	24,253,329
Sunken	21,528,865	24,985,553	28,011,750	29,461,816	40,374,334
Floating	7,368,163	8,087,719	8,520,850	8,086,244	230,666
Sum	55,017,477	51,195,973	52,019,467	60,443,342	64,858,329

- i. The Ministry of Oceans and Fisheries collects marine litter with 11 local governments adjacent to the coast to reduce the amount of marine litter.
- ii. To minimise the detrimental effects of marine litter and improve the marine environment, the Ministry of Oceans and Fisheries is planning to expand its budget for collection projects as well as increase the number of collection sites.

Republic of South Africa

■ Measures

(a) Initiatives to improve waste management:

- i. National Recycling Enterprise Support Programme (RESP)
- ii. Implementation of Industry Waste Management Plans under the National Waste Act
- iii. Amendment of waste management policy to introduce or amend levies on waste tyres and plastic bags
- iv. Local government support programme
- v. Plastic Material Flows and End of life assessment
- vi. Review of plastic bag policies study
- vii. Single use plastics assessment study
- viii. Waste reception facility audit of commercial and small harbours

(b) Initiatives to recover or remove waste and litter from land and aquatic systems:

- i. National Working for the Coast Programme
- ii. Good Green Deeds programme
- iii. Source to Sea programme
- iv. Pilot Waste Removal project in an under-serviced community as part of the Commonwealth Marine Litter Programme
- v. Operation Clean Sweep (industry initiative – Plastics SA with 7 river cleanups)
- vi. Annual International Coastal Clean-up Day beach cleanups

■ Achievements

- (a) Plastic recycling (source: Plastics SA) approx. 20%

Russia

■ Measures

(a) New comprehensive system on waste management in Russian Federation.

- i. Efficient management of production and consumption waste, including the elimination of all unauthorised landfills within the boundaries of cities
- ii. Introduction of the principle of Extended Producer Responsibility in 2018
- iii. Land reclamation in which landfills were located
- iv. Creation of conditions for recycling all production and consumption waste prohibited from burial
- v. Creation of a system of public control over the appearance of unauthorised landfills
- vi. Removal of debris from coasts and adjacent lakes and rivers
- vii. Attracting volunteers to clean rivers, lakes and seashores
- viii. Estimation of the socio-economic consequences of disposable plastic utensils ban

- ix. Consideration to introduce a complete ban on the use of plastic bags from 2025.
- (b) "Clean Volga" activities (targeting 2024).
 - i. Decrease in the share of polluted waste waters, flowing into the Volga river
 - ii. Elimination (recultivation) of objects of accumulated environmental damage, posing a threat to the Volga river
 - iii. Removal and disposal of wrecks (95 PCs)
 - iv. Cleaning of water objects of Lower Volga (775 km)
 - v. Decrease by one third of the volume of polluted waste waters, flowing into the Volga river (2100 mln m³)
 - vi. Elimination of objects of accumulated environmental damage (43 PCs)

■ Achievements

- (a) Moscow will start separated waste collection including plastics by the end of 2019.

Singapore

■ Measures

Singapore utilises a comprehensive waste and water management system to minimise waste at source and prevent discharge of litter into the sea. Singapore's approach is detailed below:

- (a) Comprehensive waste management system
 - i. Control of discharge of trade effluent, oil, chemical, sewage or other polluting matters into drains, as well as hazardous substances into inland waters and conducting regular water quality monitoring of inland water bodies and coastal areas to meet international standards
 - ii. Anti-littering as well as waterways clean-up measures, which ensure that land-based litter, including plastic waste, that might otherwise wash into the ocean is prevented from doing so
 - iii. Integrated and comprehensive solid waste management and collection system to minimise waste at source and collect all waste for proper disposal. Recyclables, which are segregated and collected separately at source, including plastics, are sorted, baled and sent for recycling
- (b) Prevention of littering, illegal dumping, release of waste into the ocean
 - i. Damming up of tidal rivers to form reservoirs as source of water supply to minimise litter from flowing out into the sea. Vertical gratings, litter traps and float booms installed where appropriate as part of the drainage network to trap debris and litter
 - ii. All used water collected and treated at water reclamation plants (WRPs) to international discharge standards. Most plastic materials, including microplastics, removed through current treatment processes at the WRPs
 - iii. Singapore is party to all six Annexes of the International Maritime Organization's

International Convention for the Prevention of Pollution from Ships (MARPOL), the main international convention covering prevention of pollution of the marine environment by ships. MARPOL Annex V in particular prohibits the discharge of garbage, including all types of plastics, into the sea

- iv. Singapore's Maritime Port Authority's port inspectors patrol Singapore's port waters to ensure that ships in the Port of Singapore do not illegally discharge waste, oil, garbage and sewage
- v. Singapore conducts inspections on both Singapore-registered and foreign-registered ships in port to ensure that they comply with the regulations on garbage disposal into the sea and that anti-pollution measures are in place. Ships are also required to maintain garbage record and management plans for verification by inspectors
- vi. Singapore also provides daily garbage collection services at scheduled timings to collect garbage from ships at the anchorages

■ Achievements

- (a) Singapore has a comprehensive and integrated solid waste and wastewater management covering proper collection and disposal. This comprehensive system minimises waste washed into the marine environment and seeks to tackle the issue of marine debris pollution holistically, from upstream. For example, the waste and wastewater management system controls the discharge of all effluents and waste into water bodies. An integrated solid waste management system to minimise waste at the source, reuse and recycle and regulate waste collection and disposal so that waste will not be washed into the ocean. Singapore also has strict anti-littering and illegal dumping laws, wastewater treatment regulations, and regulations to implement MARPOL obligations.

Spain

■ Measures

- (a) Removal of marine litter from the sea
 - i. Implementation of a Fishing for Litter national plan. Measures will include preparatory actions such as a technical document to ensure consistency of methodologies and data collection, a national database, and demonstration pilot actions as part of LIFE INTEMARES European project. Funds are available in the framework of European Maritime and Fisheries Fund Spanish Operative Programme
 - ii. Financing of clean-up activities (rivers, beaches, floating litter and shallow seabeds) and encouraging participation in organised clean-up campaigns (linked to a harmonised citizen science data collection)
 - iii. Protocol for inventory, classification, assessment and controlled removal of "ghost nets", as

part of LIFE INTEMARES European project

iv. Study on hotspots at sea and focused cleaning surveys

The Netherlands

■ Measures

- (a) Prevention and cleaning up of litter, specifically in rivers
- (b) Behavioural change pilots (waste collection infrastructure, communication nudges etc.) in collaboration with regional and local governments to prevent litter
- (c) Several pilot plans with litter catchment systems in rivers
- (d) Adoption in 2015 of the MSFD (EU Marine Strategy Framework Directive) Program of Measures. Based on top 10 beach litter items and taking into account existing measures, the following additional measures were adopted including three so-called Green Deals (see below) where actions and obligations for government authorities, entrepreneurs, civil society organisations and private individuals are brought together:
 - i. Green Deal for Clean Beaches
Provides insight into how different parties go about cleaning up the Dutch North Sea beaches and keeping them clean. The Green Deal also includes the ambitions, plans and concrete actions of these parties. Making activities and plans manifest promotes collaboration and coordination between multiple parties.
 - ii. Green Deal for Ships' waste chain
Parties in the maritime chain closed the Green Deal for Ships' Waste Chain including concrete agreements to close the maritime waste cycle by means of waste prevention during provisioning, further optimisation of supervision, and optimisation of waste delivery in seaports and recycling of plastic maritime waste ashore.
 - iii. Green Deal for Fishing in Support of a Clean Sea
In this Green Deal the fishing industry, together with the Ministry of Infrastructure and Water Management, ports, waste processors and other parties, is seeking ways to close the waste cycle and thus prevent waste ending up in the sea. One of the basic principles is that all fishing vessels will deliver their operational and domestic waste on land as from 2020. The green deal tackles the main waste streams of fishery: operational ships' waste (nets, ropes, dolly rope) and domestic waste. The agreements on the 'Fishing for Litter waste' and promoting marine awareness courses for fishermen are also included in the Green Deal for Fishing in Support of a Clean Sea. Together with Fishing for Litter the Green Deal resulted in improved collection of waste on board of ships and in ports; collection and recycling of used fishing nets; environment courses at fisheries schools; and separation of different kinds of waste to make recycling possible

UK

■ Measures

(a) Resources and Waste Strategy for England

Specific commitments to tackling plastic pollution in the Strategy include:

- i. Invoking the polluter pays principle and extending producer responsibility for packaging
- ii. Introducing a deposit return scheme (DRS) to drive up recycling of an estimated 3 billion plastic bottles (subject to consultation)
- iii. Introducing a consistent set of recyclable materials for collection in England to drive up recycling rates (subject to consultation)
- iv. Stimulating the demand for recycled plastic by introducing a tax on plastic packaging with less than 30% recycled plastic
- v. Ban on plastic products where there is a clear case for it and alternatives exist, starting with banning the supply of plastic straws, plastic drink stirrers, and plastic-stemmed cotton-buds from April 2020.
- vi. Launch of a call for evidence to examine the demand and benefits of the development of standards for bio-based and biodegradable plastics as well as to better understand their effects on the environment and their impact in our waste management system (launched in July 2019, closing in October).

The UK has made significant progress so far, by introducing one of the world's toughest bans on microbeads in rinse-off personal care products, and have reduced the sale of single-use carrier bags by the main supermarket retailers by 90% with a GBP0.05 charge. Consultations have been carried out on plans to extend the charge to all retailers and on increasing the minimum charge to at least GBP0.1. The UK government response for this consultation will be published in due course.

The majority of litter in the ocean is made of plastic and originates from land-based sources.

- i. 20 countries responsible for 80% plastic debris in the sea
- ii. 90% marine plastics originate from land-based sources
- iii. Estimated 2 billion people living without waste disposal

The Resources and Waste Strategy sets out various initiatives to tackle this issue, including use of UK ODA to support developing nations and driving political commitments through Commonwealth Clean Ocean Alliance (CCOA).

Related URL:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

(b) Operation Clean Sweep

Operation Clean Sweep works to ensure pre-production plastic pellets do not escape into the environment at any stage. The scheme ensures that companies train staff to sweep up spills,

have the facilities to dispose of spilt pellets and cover drains to prevent run-off. Pre-production plastic pellets (nurdles) are the basic feedstock used in the production of plastic items. They can be lost from the supply chain and enter the environment. It is estimated that up to 53 billion nurdles are lost each year, and they are one of the biggest sources of microplastics in the marine environment.

US

■ Measures

(a) Resource Conservation and Recovery Act (EPA) Voluntary Programs

- i. America Recycles – EPA convened the first America Recycles Summit on 15 November 2018. At this event, EPA and 44 stakeholders from across the recycling system pledged to work together to devise solutions to four major challenges impacting the U.S. recycling system: improving outreach/education, enhancing materials management infrastructure, strengthening materials management markets, and enhancing measurement. Four workgroups emerged from the Summit and their work throughout 2019 has identified specific near- and long-term actions that are needed in each action area. These efforts will strengthen the US recycling system. A second America Recycles Summit is to be convened on 15 November 2019, along with other events hosted by EPA throughout the week.

■ Achievements

(a) Marine Debris Act

Removal of over 17,000 metric tons of marine debris from US waters (ocean and Great Lakes)

(b) Resource Conservation and Recovery Act (EPA) Voluntary Programs

- i. WasteWise - Some of the 2018 EPA WasteWise award winners include: L Brands, Kohl's Department Stores, Commonwealth Edison, Perishable Distributors of Iowa, and Urban Chestnut Brewing Company. These organisations were recognised for their leadership in waste prevention and diversion.

European Union

■ Measures

(a) Directive on Port Reception Facilities

The new Directive covers all waste from ships, with a special focus on addressing marine litter originating from shipping, including from the fishing and recreational sectors. To this end, the Directive provides for a mix of incentives and enforcement measures to maximise waste delivery on shore to adequate port reception facilities, where the waste should be properly managed (e.g. through separate collection). The Directive strengthens the financial incentive for delivery by providing for a 100% indirect fee for garbage (MARPOL Annex V waste) to be paid irrespectively of volumes delivered. This fee gives all ships a right to deliver all garbage waste, including waste fishing gear and passively fished waste, without facing any further additional fees.

This should result in a robust framework to tackle (plastic) waste from ships and to ensure that port reception facilities are available for the management of this waste in line with the principles of the Circular Economy.

Related URL:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1570190453030&uri=CELEX:32019L0883>

(b) Revision of the Waste Legislation

In relation to waste management, the EU Member States have implemented effective separate (household) collection schemes and have built in economic incentives for better waste treatment (e.g. landfill/ incineration charges) as well as Extended Producer Responsibility (EPR) schemes.

In May 2018, the EU revised its waste legislation to make it fit for the future. The revised legislation includes the following points:

- i. Strengthening the “waste hierarchy”, i.e. it requires Member States to take specific measures to prioritize prevention, re-use and recycling above landfilling and incineration
- ii. Significantly stepping up recycling of municipal waste (target of 55% by 2025 and 65% by 2035) and packaging waste (target of 65% by 2025 and 70% by 2030 – for plastics the 2030 target is 55%)
- iii. Boost to the quality of secondary raw materials and their uptake through new separate collection rules
- iv. Phase-out of landfilling (max. 10% by 2035) and promotion of the use of economic instruments, such as EPR schemes

In the context of the prevention of waste, the revised EU Waste Framework Directive requires Member States to identify products that are the main sources of littering, notably in natural and marine environment, and take appropriate measures to prevent and reduce litter from such products. The Directive also requires Member States to develop and support information

campaigns to raise awareness about waste prevention and littering. In the future, Member States management plans will have to contain measures to combat and prevent all forms of littering and to clean up all types of litter. With regard to enforcement they are required to take the necessary measures to prohibit the abandonment, dumping or uncontrolled management of waste, including littering.

Related URL: https://ec.europa.eu/environment/waste/target_review.htm

(c) Directive on the reduction of certain plastic products on the environment:

The Directive requires the establishment of EPR schemes to ensure that producers are responsible for the costs of cleaning up litter (article 8).

3.3. Promotion of innovative solutions

There is still a very limited number of countries which include established collaboration and public-private partnership to advance innovative solutions, such as for product design, resource efficient and circular approaches. Only a few countries have reported actions on R&D investment and financial instruments.

Japan

■ Measures

Innovation through development and conversion of alternative materials

- (a) Technological development through public and private partnership based on “Roadmap for Popularising Development and Introduction of Marine Biodegradable Bio-based Plastics”
- (b) Support for project to promote substitute materials such as biodegradable plastic and paper, for products including fishing gear
- (c) Promotion of development of marine biodegradable plastic especially for fishing gear that does not necessarily require high durability and strength such as some parts of equipment used in aquaculture
- (d) Acceleration of innovation among relevant business operators that compose the plastic value chain through “Clean Ocean Material Alliance (CLOMA)”
Related URL: <https://cloma.net/english>
- (e) Formulation of a “Public and private cooperation framework for innovation of marine plastic” with businesses, organisations, and researchers who come up with innovative solutions, and transmit information.

■ Achievements

- (a) Scale of use of innovative technologies and materials including R&D investment - implemented a “Project on building a recycling system for plastics to support decarbonised society” to support a demonstration project, related to the conversion of plastics into alternative materials from FY2019 (FY2019 budget: JPY3.5 billion)
Promotion of development of oyster aquaculture equipment using marine biodegradable plastics from 2018 (FY2019 budget: within JPY180 million).

Republic of Korea

■ Measures

Building pre-processing facilities and distribution of Styrofoam pressers

- (a) Pre-processing facilities
 - i. Acceleration of eco-friendly treatment or resource recovery of fishery waste, which has been difficult to incinerate or recycle due to the attachment of salt or contaminants
 - ii. Installation of pre-processing facilities for cutting, cracking and cleaning in areas where a large amount of derelict fishing gear is generated, such as ropes and nets
- (b) Styrofoam pressers
 - i. Distribution of compressors given consumption by region and replacement of aging facilities with new ones
 - ii. Development and distribution of equipment and technology to automate pre-processing procedures including disposal of eco-friendly buoys made of various materials as well as removal of pollutants
 - iii. Discovering and spreading best practices of operational management and assessment of compressors

Pilot village in which marine debris turns into energy

- (a) Recycling marine debris generated in fishing communities and turning it into a source of energy, supplying to local communities and raising the income of residents as well as improving their living environment based on landscape improvement

Development of technology for recycling and resource recovery

- (a) Establishment of a roadmap of technological development for recycling and resource recovery and push ahead technological development
- (b) Pushing forward technological development for recycling marine debris such as developing alternative materials of plastics
- (c) Support for transportation costs for eco-friendly disposal of shell fragments and start research for expanding the recycling of shell fragments
- (d) Establishment of a mid-to-long term plan for eco-friendly disposal and resource recovery of dead fish
- (e) Increase in recycling facilities for dead fish and expanded distribution

UK

■ Measures

(a) UK Plastics Pact

The UK Plastics Pact, led by the Waste and Resources Action Programme (WRAP), is the first of a global network of such pacts, enabled by the Ellen MacArthur Foundation's New Plastics Economy initiative. It brings together the entire plastics packaging value chain behind a common vision and ambitious set of targets to tackle plastic pollution.

By 2025, The UK Plastics Pact will transform the UK plastic packaging sector by meeting four world-leading targets.

- i. By 2025, 100% of plastic packaging to be reusable, recyclable or compostable
- ii. By 2025, 70% of plastic packaging effectively recycled or composted
- iii. By 2025, single-use packaging eliminated
- iv. By 2025, 30% averaged recycled content across all packaging

The Pact will stimulate innovative new business models to reduce the total amount of plastic packaging. It will also help build a stronger recycling system, taking more responsibility for waste, and ensuring plastic packaging can be effectively recycled and made into new products and packaging and, with the support of governments, ensure consistent UK recycling is met.

The immediate focus will be on identifying the priority projects that will deliver greatest impacts in the short and long term, such as overcoming barriers to increasing the amount of recycled content used in new packaging, developing reusable packaging and working with partners to overcome the issue of un-recyclable black plastic.

European Union

■ Measures

(a) European Circular Economy Stakeholders Platform

The European Circular Economy Stakeholders Platform is a joint initiative of the European Commission and the European Economic and Social Committee. It is an online platform to exchange best practices, knowledge and strategies to accelerate the transition towards the circular economy. As a place for knowledge, the platform features different contributions from stakeholders: good practices, national, regional and local strategies, studies and reports on the Circular Economy and commitments. In the section "good practices", stakeholders are able to submit directly their experiences to the platform. The sections on national, regional and local strategies, on knowledge and on voluntary commitments feature examples of the type of contribution we wish to collect. Many projects and initiatives on plastics can be found in the Platform's database, which is being continuously updated.

Related URL:

<https://circulareconomy.europa.eu/platform/en/good->

[practices?key_area=All§or=86&country=All&org_type=All&funding_type=All&identified_challenge=All&scope=All&title=&=Search](#)

(b) Circular Economy Finance Support Platform

Innovation needs innovative financial instruments. Together with the European Investment Bank, the Commission launched the Circular Economy Finance Support Platform (in January 2017), inviting key stakeholders such as national promotional banks, private financial institutions, NGOs and trade associations. This Platform will stimulate the generation and financing of Circular Economy projects and will also raise awareness of circular economy needs, identify opportunities and best practices amongst potential project promoters, and provide advice on structuring and improving the bankability of circular economy projects.

Other EU funding programmes are available to support the transition to the circular economy:

- i. Horizon 2020 work programme 2018-2020 focus area 'Connecting economic and environmental gains – the Circular Economy' has allocated around EUR1 billion. Through R&I actions, a strong contribution will be made to sustainable development goals, climate action, resource efficiency, jobs and growth and industrial competitiveness. In particular, actions on plastics, on premature obsolescence, bioeconomy, organic fertilisers, food waste, to mention a few, will be covered by this focus area.

Related URL: <https://ec.europa.eu/programmes/horizon2020/en>

- ii. The European Structural and Investment Funds, including Cohesion Policy.

Related URL: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/european-structural-and-investment-funds_en

- iii. The European Fund for Strategic Investments (EFSI), which was extended until 2020, focusing more on investments to meet the Paris Agreement targets and help the transition to a circular and zero carbon economy.

Related URL: https://ec.europa.eu/growth/industry/innovation/funding/efsi_en

- iv. The LIFE programme. Related URL: <https://ec.europa.eu/easme/en/life>

(c) Plastics Circularity Multiplier group

Twenty innovation projects teamed up to support the EU efforts to steer the plastics industry into the circular economy. The recently formed Plastics Circularity Multiplier group will share resources and expertise to enhance the impact of the projects receiving funding from the EU's Horizon 2020 research and innovation funding programme. More specifically, the Plastics Circularity Multiplier group will communicate to policymakers, the public and industry on a range of EU-funded innovations on plastics.

3.4. Multi-stakeholder involvement and awareness-raising

Many countries are active on multi-stakeholder involvement and awareness-raising through campaign, education and collaboration with related stakeholders.

Collaboration and cooperation with non-G20 countries, local governments, and related stakeholders, namely private sector and civil society organisations, are reported by countries.

Several unique and diverse actions have been taken in countries, targeting consumers, fisheries, school students and others to raise awareness on the importance of urgent and effective actions to prevent and reduce plastic litter discharge to the oceans.

Some countries, such as Canada, Russia and US reported concrete achievements with the quantitative data.

Canada

■ Achievements

(a) Additionally, Canada raises awareness of plastic waste and its pollution through public and industry engagement and supports communities and organisations in education-raising and on-the-ground projects. For instance in August 2019, Fisheries and Oceans Canada announced CAD8.3 million in funding to help rid Canada's water of abandoned, lost or discarded fishing gear. Environment and Climate Change Canada has also provided organisations with over CAD3 million since last year to support educational and awareness-raising projects, citizen science, community demonstrations and clean-ups to reduce plastic waste and marine litter. For example, Canada has supported two national outreach campaigns (10,000 Changes and Be Plastic Wise), collaborated with NGOs and launched an Oceans Plastics Education Kit, and funds the Great Canadian Shoreline Clean-up programme that mobilises Canadians to remove debris from the country's extensive coastlines and collect citizen science data.

France

■ Measures

(a) Actions on the seashore and at sea

Launch of awareness-raising actions to the benefit of fishing and aquaculture activities

(b) Awareness raising actions

- i. Establishment of a citizen science platform on marine litter to identify the clean-up actions that take place, monitor the data and share best practices
- ii. Support for associations that launch awareness-raising actions and clean-ups
- iii. Establishment of a "zero plastic on the beach" chart in collaboration with local authorities

- iv. Development of awareness-raising and actions to inform citizens of pollution, its impacts and good practices

■ Achievements

(a) Actions on the seashore and at sea

Awareness-raising actions have been conducted towards fishermen to fight against pollution and initiate the collection of fishing gear and aquaculture waste

(b) Awareness-raising actions

- i. Ministry support for the associative network which intervenes in beach clean-ups and carries out awareness-raising actions
- ii. Citizen science platform on marine litter to be operating before the end of 2019 (a pilot version can be found here: www.remed-zero-plastique.org)
- iii. Meeting organised twice a year among the NGOs and public and private actors to share information and raise issues
- iv. Launch of annual advertising campaign to raise awareness on littering
- v. Establishment of two working groups with local authorities to prevent and sanction littering

Germany

■ Measures

- (a) A Round Table (RT) aiming at developing concepts / solutions / ways in order to operationalise agreed measures including those of the G20 Action Plan. All relevant stakeholders i.e. industry, public, Green NGOs, Science Agencies, and policy representatives are members of the RT. It provides a platform for safeguarding information exchange amongst all partners and actors, and offers external and internal networking;

(b) Collaboration with stakeholders

As a G7 follow-up activity, the Ocean Plastics Lab, an international travelling exhibition about science has been initiated by the German Federal Ministry of Education and Research together with the German Marine Research Consortium, supported by the European Commission and international partners from politics and science in 2017. The exhibition has had seven tour stops so far (Turin, Paris, Brussels, Washington D.C., Ottawa, Berlin, Lisbon) attracting about 70,000 visitors. The exhibition often takes place in connection with political events (e.g. Meeting of G7 Ministers of Science 2017 in Turin, 2nd Arctic Science Ministerial 2018 in Berlin or European Maritime Days 2019 in Lisbon), so that side events on the subject of marine litter are also organised. Related press releases and further information can be found on the website: <https://oceanplasticlab.net/>

Indonesia

■ Measures

(a) National Movements for Improving Behavioural Change:

Stakeholder awareness should lead to an efficient and effective involvement in managing marine plastic debris due to huge number of stakeholders spread out in all regions, while showing co-ownership in solving the problem will be a reflection of nongovernment stakeholders' engagement.

■ Achievements

(a) Government of Indonesia, in collaboration with local governments, NGOs, businesses, society organisations and citizens, has been conducting awareness-raising programmes that promote the reduction of single-use plastic usage. The programmes are carried out through communication, information and education activities using many channels including social media, TV dialogues, radio talk shows, newspapers, public campaigns, exhibitions, clean-up movements, "less waste" events, and stakeholder engagement.

(b) MOEF has been conducting a programme called the Program Adiwiyata or green school for more than 10 years. The programme is designed to apply a basic environmentally-friendly way of life in daily school activities including cleaning the school, "less waste" schooling, waste separation, composting, upcycle packaging waste, greening the school, water preservation, toilet management, and rainwater harvesting. MOEF and Ministry of Education and Culture (MOEC) work together to add environmental awareness and waste management issues to both national and local curricula at primary and junior-high school levels.

Italy

■ Measures

(a) Memorandum of Understanding with the Italian Olympic Games Committee

In 2019 the Minister of Environment, Land and Sea signed a memorandum of understanding with the Italian Olympic Games Committee (CONI). The agreement aims at promoting sustainability in sports events in particular by reducing plastic waste.

Japan

■ Measures

- (a) Expansion of “Plastics Smart” campaign to encourage all stakeholders to prevent generation of marine litter

Related URL: <http://plastics-smart.env.go.jp/en/>

- (b) Recognition of good practices with the “Marine Litter Zero Award”, and sharing of information at “Marine Litter Zero International Symposium”
- (c) Promotion of actions through “Plastic-related goals for each business sector” by Japan Business Federation, and “Action declaration for plastic resource circulation” by the agriculture, forestry, fisheries and food industry
- (d) Promotion of cooperation between local committees based on the “Marine Litter Act”, and model projects for local governments including those inland

KSA

■ Achievements

- (a) Cooperation with public and private stakeholders including awareness & cleaning campaign

Republic of Korea

■ Measures

‘Coastal Clean-up Day’

- (a) The Ministry of Oceans and Fisheries of Korea announced the third Friday of every month as ‘Coastal Clean-up day’ in July 2018 and has been holding nationwide coastal clean-ups ever since. The clean-ups are open to the public and involve participation from multi-stakeholders such as oil companies, local fishermen and local governments.
- (b) MoU (Memorandum of Understanding) between the private sector and the government is also very active. This year, Korean government signed a MoU with Lotte which is one of the biggest beverage companies in Korea and invited them to join the International Coastal clean-up activity and co-hosted the marine plastic litter up-cycling event.

Public Awareness Projects

- (a) The Ministry of Oceans and Fisheries of Korea established a comprehensive annual plan for marine litter public awareness campaigns at the beginning of 2019. By analysing the results of public awareness campaigns from the previous year, the plan includes multiple different strategies to effectively raise public awareness among all groups of people.
 - i. Strategy 1: Information provision
 - Publication and distribution of marine litter awareness posters
 - Publication of educational booklets for fishermen and tourists

- Filming and Broadcasting of public advertisements through various platforms such as Newspaper, TV, Internet, Public transportation
- ii. Strategy 2: Public participation
 - Public awareness campaigns on the street
 - Holding multi-stakeholder fora on marine litter policies
- iii. Strategy 3: Encouraging active participation
 - Marine litter UCC and slogan contest
 - Public idea contest on Up-cycling and Recycling
 - Public idea contest on marine litter policies

Republic of South Africa

■ Measures

- (a) Public awareness, outreach and advocacy:
 - i. Good Green Deeds
 - ii. Source to Sea initiative
 - iii. World Wildlife Fund: project on consumers

Russia

■ Measures

- (a) “Clean Beach” campaign initiated by the Russian Federation together with other partners (Baltic Sea countries)
- (b) 8 “Eco-marathons” with participation of more than 800 volunteers: “Clean banks of Caucasus”, “Clean banks of Far East”, “Clean banks of Baikal”, “Clean banks of Siberia”, “Clean banks of Ural”, “Clean banks of Don”, “Clean banks of Crimea”

Saint Petersburg Region banned the use of disposable plastic goods during holidays and public celebrations

■ Achievements

- (a) Social impact
 - i. More citizens have voluntarily started to separate plastic/paper/glass in their household waste
 - ii. Moscow citizens can exchange their plastic/paper/glass for tickets to cinemas, museums, expeditions or theatres.

Singapore

■ Measures

(a) Singapore's initiatives to engage domestic stakeholders include:

- i. Partnering with the People, Private and Public (3P) sectors on initiatives that reduce the generation of land-based solid waste, including plastic waste
- ii. Singapore Packaging Agreement, a voluntary agreement undertaken by government, industry and non-governmental organisations to reduce packaging waste
- iii. National Recycling Programme, which provide convenient means for consumers to recycle, thereby reducing the amount of plastic waste being sent for disposal
- iv. Nationwide "Say YES to Waste Less" campaign which is aimed at influencing the public to reduce the use of disposables
- v. Working with environment groups such as Zero Waste SG, the Public Hygiene Council (PHC), International Coastal Cleanup Singapore (ICCS) and the Waterways Watch Society (WWS) to foster shared ownership in keeping the environment clean and minimising waste. For example, ICCS organises clean-up initiatives to engender ownership among youths and other members of the public, and Zero Waste SG launched a Bring Your Own (BYO) campaign that provides educational tips and engage retails partners to provide incentives to encourage consumers to use their own reusable containers, bottles and bags leading to reduction in plastic waste
- vi. To encourage businesses to minimise their contribution to plastic waste, NEA will require businesses that place packaging on the Singapore market to submit packaging data and plans to reduce, reuse and/or recycle packaging under the mandatory packaging reporting framework to be implemented in 2020. This will include single-use plastic packaging. The mandatory packaging reporting will also lay the foundation for an Extended Producer Responsibility (EPR) framework for managing packaging waste, including plastics, which will be implemented no later than 2025

Spain

■ Measures

(a) Awareness-raising

- i. Preparation of awareness/communication materials
- ii. Establishment of a technical group on marine litter (national hub) (which organises public events within the National Environmental Congress) and stimulation of national discussion in the form of periodic roundtables with stakeholder participation
- iii. Creation of "Guardians of the Beach" programme, aimed at associations, environmental organisations, fishermen, fishing associations and other groups and a network of "guardians" organisations to ensure environmental preservation of rivers and beaches and

awareness of this problem at local, regional and national levels

Additionally some horizontal measures in the Marine Strategies may include marine litter as a subject among other marine aspects:

- i. Awareness programmes for beach tourists, nautical tourism companies, as well as fishermen and civil society in general, including schools
- ii. Training programmes for fishermen, observers on board, stranding networks personnel, and training for Public Administration managers
- iii. Development and implementation of a curriculum related to the respect and protection of cetaceans, marine turtles and seabirds as well as marine litter in the ship's masters official courses (yacht and fishing)

Note: Additionally, Spanish marine strategies contain an extensive monitoring programme on marine litter, including litter and microplastics on beaches, floating litter and sediments, and also biota. (target species: marine turtles + other options such as fish or mussels in study)

(b) Awareness and Participation

- i. National communication campaign mainly aimed at:
 - Raising awareness of the effects of the abandonment of scattered litter and other inappropriate forms of waste disposal in public land areas and in the marine environment, especially single-use plastics and fishing gear containing plastic
 - In particular, sensitising, training and informing citizens about the importance of their contribution to the reduction of the "habit" of excessive consumption of single-use plastics in general, and about the importance of properly managing the waste of wet wipes, as well as avoiding the abandonment of cigarette butts in public spaces, including beaches
 - Availability of reusable alternatives, reuse systems and waste management options available for those single-use plastic products and for fishing gear containing plastic, as well as best practices in the field of rational waste management
 - Impact of the improper disposal of waste from single-use plastic products on the sewerage system
- ii. Collaboration in campaigns promoted by civil society, providing that these campaigns are aligned with the communication strategy
- iii. Campaigns in National Parks aimed at preventing the abandonment of litter

(c) Public-private collaboration

- i. Creation of public-private collaboration working groups
- ii. Promotion of agreements with other interested parties such as environmental organisations, consumer and user organisations, scientific institutions, etc., in order to develop collaborative projects.

The Netherlands

■ Measures

- (a) Car tyres: communication campaign on tyre pressure and tyre type. Lobby towards the EU for including wear in the EU tyre label
- (b) Overall agenda – setting and awareness took place via education: the litter/plastic soup theme has been included in successive levels of learning (with the Institute for Curriculum Development) and promoted among teaching and education professionals. Improving and intensifying education about litter and waste separation as well as focusing education also on behavioural change by means of an education measure together with NGOs and other organisations focused on education

UK

■ Achievements

- (a) Changes to marine licensing measures to make it easier for divers to recover marine litter

US

■ Measures

- (a) **Marine Debris Act (NOAA, USCG)**

Ordered NOAA to conduct outreach and education on sources, threats, and approaches

- (b) **EPA Marine Litter Related Voluntary Work**

Trash Free Waters – is a stakeholder-based approach to assist US and international communities with addressing land-based sources of marine litter. Within the United States, place-based, source reduction TFW efforts are underway in Santa Monica Bay and NY-NJ Harbor; trash capture projects are being demonstrated in Mobile Bay (AL) and the Proctor Creek watershed near Atlanta; adopt-a-spot efforts, which encourage citizens and businesses to participate in litter clean-up of a designated area in their community at regular intervals in Texas; stakeholder engagement and project identification/prioritisation in the Piscataqua watershed (between NH-ME) and in the Indian River Lagoon area (FL), and many others. Trash Free Waters also develops tools and resources that are helpful for its stakeholders. Tools include a best practices compendium so that municipalities, NGOs, and others can get information on costs and effectiveness of various management practices; a litter control policy and programme document for the Gulf states; a forthcoming Compendium of trash provisions for stormwater permit writers; and a forthcoming trash assessment tool that allows for detailed characterisation of trash pollution to inform management practices, permit provisions, and impaired waterbody listing; and other tools. Furthermore, almost all of the place-based projects include education and outreach elements – particularly leveraging social marketing techniques

to address littering behaviours.

- (c) **Resource Conservation and Recovery Act (EPA) Voluntary Programs WRAP Program** - In 2016, EPA signed an MOU with ACC and the Sustainable Packaging Coalition (SPC) on ACC's Wrap Recycling Action Program (WRAP). WRAP aims to create opportunities for consumers to recycle plastic films (e.g. municipal collection opportunities; in-store collection bins at supermarkets and big-box stores), to educate consumers about the availability of these opportunities, and to build demand for recycled film and products containing recycled film. The signatories meet regularly to discuss the path forward on this program.

■ **Achievements**

(a) **Marine Debris Act**

Development of public awareness materials and social media platforms for sharing information to increase awareness and drive behavioral change

(b) **Clean Water Act**

Domestic Trash Free Waters Voluntary Work – Since the start of the Trash Free Waters Program in 2013

- i. More than 100 partner programmes engaged nationally
- ii. Ten infrastructure projects
- iii. More than twenty projects funded by various EPA competitive grant programmes – such as Urban Waters Small Grants and Environmental Justice Small Grants
- iv. 22 of the 28 National Estuary Programs have developed Trash Free Waters Projects
- v. Two of the EPA Geographic Programs have recently announced funding for Trash Free Waters

- (c) **Domestic Voluntary Work** – Since the start of the Trash Free Waters programmes, more than 100 partner programmes engaged nationally, eight microplastics research projects, ten infrastructure projects, nine data collection projects that have been used to build local community responses, and more than 20 projects funded by various EPA competitive grant programs – such as Urban Waters Small Grants and Environmental Justice Small Grants. Furthermore, 22 of the 28 National Estuary Programs have developed Trash Free Waters Projects.

European Union

■ Measures

(a) Awareness-raising and communication

The European Commission launched an awareness-raising campaign to highlight the role of citizens in combatting plastic pollution and marine litter (https://ec.europa.eu/info/news/single-use-plastics-are-you-readytochange-2018-jun-05_en). Together with the United Nations Environment Programme and other partners, the Commission coordinates a global network of aquariums to raise public awareness about plastic pollution (https://europa.eu/rapid/press-release_IP-18-6203_en.htm). On the occasion of World Clean-up Day in September 2018, some 50 EU delegations and representations joined NGOs, embassies, schools and volunteer networks to organise beach clean activities across the world (https://ec.europa.eu/maritimeaffairs/content/eubeachcleanup-campaign-goes-global_en). A year later, over 80 countries took part in the #EUBeachCleanup campaign. Social media impact has been unprecedented for any Commission communication initiative. Leading by example, the European Commission has also phased out all single-use plastic cups in water fountains and vending machines in all its buildings and at all meetings.

The EU not only finances dedicated projects focused on awareness-raising but also requires dissemination and communication activities in almost all EU-funded projects against litter.

(b) Voluntary Commitments from the European plastics value chain

In parallel with the presentation of the Plastics Strategy in 2018, PlasticsEurope and polymer specific platforms presented a set of voluntary commitments that include some quantified targets:

- i. Achieving the goal of 100% re-use, recycling and or recovery of all plastics packaging in the EU-28, Norway and Switzerland by 2040; reach 60% re-use and recycling of plastics packaging by 2030 (PE)
- ii. Commitment to 65% recycling and reuse of PET packaging material collected by 2030. Amongst which, 30% of closed loop (PET)
- iii. 60% recycling and reuse of the collected polyolefin (PO) packaging and to work collaboratively with all relevant stakeholders in Europe to have more than 75% of all PO packaging readily designed-for-recycling by 2030 (PCEP)
- iv. Continuing to contribute yearly around EUR5 million in order to support commitment beyond 2020 and until 2030 (VinylPlus)
- v. to have 100% of its member companies, to which OCS is applicable, to sign the Operation Clean Sweep pledge by the end of 2018

The commitments also foresee establishing an independent committee (also known as the Advisory Committee), made up of representatives from the European Commission and European Parliament, academia, civil society, and Plastics Europe, to monitor and guide the progress made. While providing the general oversight of the Plastics 2030 Voluntary

Commitments, this Advisory Committee would serve to complement the respective stakeholder committees of the individual Circular Economy and Value Chain Initiatives.

(c) **Circular Plastics Alliance**

In the framework of the Circular Plastics Alliance, a Declaration was signed in September 2019 by over 100 stakeholders from the entire plastics value chain and by Member States. Its aim is to establish clear industry commitments on the way forward to make plastics circular in Europe, including how to reach the 10m tonnes objective of recycled content in new products for 2025, foreseen in the Plastics Strategy, and go even further in the following years. Related URL: https://ec.europa.eu/growth/industry/policy/circular-plastics-alliance_en

3.5. Sharing scientific information and knowledge: R&D and Monitoring

R&D targeted by countries includes monitoring, prevention of pollution by marine debris, mapping of MPL and microplastics, and technology development for alternative materials to plastics. Some countries, such as the UK and EU, reported achievements with quantitative data, as investments for research promotion.

Australia

■ Achievements

- (a) Australia is conducting a range of research to better understand marine debris, including marine plastic pollution. Recent CSIRO research indicates that 75% of Australian beach pollution is plastic. This research will assist in setting baselines for marine debris and plastic pollution, allowing this to be tracked over time. For details on CSIRO marine debris research, see <https://www.csiro.au/en/Research/OandA/Areas/Marine-resources-and-industries/Marine-debris>.

Brazil

■ Measures

- (a) The National Plan to Combat Marine Litter:
Research and Technological Innovation
- i. Mapping marine litter in Brazil
 - ii. Creation of a unified database providing the capacity to understand the dynamics of marine litter in Brazil
 - iii. Promotion of the development of new technologies

Related

URL:

<https://app.powerbi.com/view?r=eyJrIjoieYzBhY2MyYTAzMzZmE5LTNmOTMtNGJiMS05ODMwLTZmNDY3NTJmMDNINCIsImMiOiJF9>

Canada

■ Achievements

- (a) Canada supports and conducts scientific research that informs evidence-based decision making, spurs innovation and helps to track progress. In 2018, the Government of Canada hosted the Best Brains Exchange on the Ecological and Human Health Fate and Effects of Microplastic Pollution and the Canadian Science Symposium on Plastics with subject matter

experts that informed the development of Canada's Plastic Science Agenda (CaPSA). In June 2018, CaPSA was published providing a framework that spans the lifecycle of plastics to inform future science and research investments for the following:

- i. Detecting plastics in the environment
- ii. Understanding and mitigating potential impacts on wildlife, human health and the environment
- iii. Advancing sustainable plastic production, recycling and recovery
- iv. Providing the evidence needed to support decision making as we move toward a zero plastic waste future.
- v. Canada committed over CAD10 million domestically towards challenges to address plastic waste in the areas of food packaging, separation of mixed plastic, construction waste, glass fiber recycling, fishing and aquaculture gear, and bioplastics.

Related URL: Canada's Plastics Science Agenda: <https://www.canada.ca/en/environment-climate-change/services/science-technology/canada-science-plastic-agenda.html>

- (b) Federal researchers are assessing and publishing their findings on the sources, distribution, fate and impacts of marine litter and microplastics in the environment and in biota and particularly on the interactions of plastic pollution with fauna such as fish and seabirds. Canada has committed over CAD2 million in research to increase our knowledge about the impacts of microplastics on our aquatic ecosystems and has provided support to academia and NGOs to develop microfiber sampling, identification and quantification as well as to improve our understanding of microplastics in specific geographic areas including the Great Lakes and Atlantic regions and the Saint John River watershed.

Related URL: Economic study of the Canadian plastic industry, markets and waste: summary report, <http://publications.gc.ca/site/eng/9.871296/publication.html>

China

■ Measures

- (a) Monitoring and evaluation of marine debris and micro-plastics, and follow-up on pollution status of marine debris and micro-plastics in key sea areas
- (b) Launch of the national key research and development project in 2017 on "Marine microplastics monitoring and eco-environmental effect assessment technology research", systematically investigated marine micro-plastic pollution in coastal waters, as well as in-depth research on marine microplastics transport pathways, environmental behaviour and biological toxicity
- (c) Encouraging academic exchanges and data sharing among research institutions, and promoting research on marine debris and microplastics monitoring technologies and risk assessment methods

Finland

■ Measures

(a) Measures under the Finnish Marine Strategy:

- i. Programme of Measures: A broad general survey of sources and pathways of marine litter and microplastics and a roadmap towards the targets have been commissioned. The report is due to be published by the end of 2019. Work to update the Programme of Measures (PoM) for 2022–2027 has been started. The measures to be included in the updated PoM are planned to complement measures in the Plastics Roadmap.
- ii. Monitoring Programme: Monitoring of beach litter has been carried out since 2012 in about 15 different locations several times per year. Methods for monitoring of microplastics have been developed during the recent years. A monitoring programme covering both macro and microlitter will be installed in 2020.

Related URL:

[https://www.ymparisto.fi/en-](https://www.ymparisto.fi/en-US/Sea/Protection_and_management_of_the_marine_environment/Development_of_Finland_s_marine_strategy)

[US/Sea/Protection_and_management_of_the_marine_environment/Development_of_Finland_s_marine_strategy](https://www.ymparisto.fi/en-US/Sea/Protection_and_management_of_the_marine_environment/Development_of_Finland_s_marine_strategy)

■ Achievements

- (a) Ongoing beach litter monitoring since 2012 in about 15 different locations in Finland several times per year.
- (b) Significant increase in the number of scientists and knowledge related to marine litter in Finland during the recent years, contributing to the management of the problem.
- (c) A broad general survey of sources and pathways of marine litter and microplastics in Finland and a roadmap towards the targets to be released by the end of 2019 provides a good overview of the sources and pathways, and will allow designation of further measures for 2022–2027.

France

■ Measures

(a) Research

- i. Ensure cooperation and provision of a better voice to the scientific community.

■ Achievements

(a) Research

- i. Meeting of the scientific community once a year related to research on “polymers and oceans”;
- ii. Guidelines for research subjects provided by the ministry

Germany

■ Measures

(a) Accumulation of actual conditions and accumulation of scientific knowledge

- i. Promotion of international harmonisation of sampling and analytical methodologies;
- ii. Research on effects of marine plastic litter including microplastics on human health and on the ecosystem under the umbrella of JPI Oceans. JPI Oceans Call 2018 “Sources, distribution & impact of microplastics in the marine environment” A total amount of up to € 10.5 million was allocated by the Funding Partners. Funding partners are Belgium, Brazil, Denmark, Estonia, France, Germany, Iceland, Ireland, Latvia, Italy, Malta, Norway, Portugal, Spain and Sweden. In addition, researchers based in other countries are able to participate on own expenses. The call comprises four themes: (1) Identification, characterisation and quantification of the major microplastic sources, especially mechanisms and time scales of macroplastic fragmentation, (2) New sampling and analytical methodologies - focusing on the smaller (nano-)particles and in situ measurement methods for all matrices (water, sediment, biota), (3) Monitoring and mapping of microplastics in the marine environment including its effects on the marine environment, and (4) Concepts to reduce inputs of plastics into the marine environment including through new recycling methods, raising public awareness, promoting behavioural change, socio-economic analyses

Indonesia

■ Measures

- (a) Handling Coastal & Sea Based Leakages: Garbage found in the ocean comes from many sources including ships, fishing lines and pleasure boats. Monitoring, surveillance and law enforcement on ocean littering are main measures.

- (b) Research & Development: Coastal marine ecosystems worldwide are affected by marine debris, much of which is plastic. R&D is important to prevent and solve problems in various ways including handling marine plastic debris from its source until it reaches the ocean as well as developing alternative materials for plastic and an innovation scheme for circular economy.

■ Achievements

- (a) In the context of research and development, Indonesia has conducted surveys and data collection as well as data quality improvement of marine litter as follows:
- i. Surveying and monitoring marine litter in 18 locations using UNEP Marine Litter Survey and Monitoring Guideline carried out by Ministry of Environment and Forestry (MOEF)
 - ii. Marine Debris Rapid Hotspot Assessment in 15 locations carried out by Coordinating Ministry of Maritime Affairs with financial support from the World Bank
 - iii. Research on Marine Litter and Microplastics in Indonesia conducted by the Centre for Oceanographic Research Indonesia Institute of Science in the following specific locations: 18 administrative locations of plastics waste, 13 locations of microplastics in water, 8 locations of microplastics in sediment, and 10 locations of microplastics in marine biotas
 - iv. Creating the first designated model of National Plastic Action Partnership (NPAP), which forms part of the larger Global Plastic Action Partnership (GPAP), with the vision of averting plastic pollution by 2025 through fast-tracking circular economy solutions. GPAP is hosted by the World Economic Forum with support from the governments of Canada and the UK as well as global companies
- (b) The marine plastic litter data is still under investigation.

Japan

■ Measures

- (a) Promotion of international harmonisation of monitoring methods
- (b) Investigation and estimation of domestic generation amount and routes, and investigation of floating plastic
- (c) Research on effects of marine plastic litter including microplastics on human health and on the ecosystem

Republic of Korea

■ Measures

Development of Harmonised Monitoring method through NOWPAP regional sea programme

- (a) As a member state of UNEP's regional sea programme 'Northwest Pacific Action Plan (NOWPAP)', Korea has been taking part in various discussions between four member states (Korea, Japan, China, Russia) on harmonisation of monitoring methods and sharing data on marine litter.

Republic of South Africa

■ Measures

- (a) Initiatives promoting research and innovation:
 - i. DST Science Review of marine litter research in South Africa
 - ii. United Nations Industrial Development Organisation (Japan funded) Project on alternatives to plastics
 - iii. CSIR Bio-plastic research
 - iv. National science to policy workshop on marine litter & plastic waste

Singapore

■ Measures

- (a) Extension of additional membrane bioreactor technology systems at water reclamation plants planned to further reduce the amount of microplastics discharged into the sea
- (b) Marine debris research underway to establish a baseline for marine debris on Singapore's shores, and set the stage for an integrated, citizen-science programme to collect and share information for use by stakeholders and the public

Spain

■ Measures

Circular Economy national policy - Information Improvement/ Data Collection

- (a) Finalising the development of the Marine Litter Monitoring Program in five Spanish marine subdivisions and in the context of the implementation of a national fishing litter scheme, development of a methodology for harmonised data collection, the development of the corresponding database and the identification of suitable areas to program and execute illustrative actions
- (b) Action protocol in case of finding lost or abandoned fishing gear that represents a threat to the conservation of habitats and species, development and maintenance of a national database,

and preparation of a study on cases where it would be adequate to develop and execute an illustrative action

- (c) Identification of hotspots, as well as targeted cleaning campaigns identified as environmentally sensitive, applied to the fields of both litter and waste abandoned in the land environment.
- (d) Adoption of a methodology for monitoring litter and microplastics in rivers
- (e) In the field of land wastes, development of a methodology that allows characterising waste, and collection and analysis of information based on such methodology

Circular Economy national policy - Specific measures directed to microplastics

- (a) Strengthening of the microplastics working group established by the Ministry for Ecological Transition, in order to improve knowledge of the impact of microplastics on the environment and health
- (b) Study on the quantities of microplastics from wastewater treatment plants, and developing a proposal of specific measures
- (c) Analysis of the information available on the production, as well as on the unintentional release of microplastics, in the textile and tyre sectors, and development of a proposal of corrective measures
- (d) Prohibition of the introduction into the market of hygiene, cosmetic and cleaning products containing intentionally added plastic microbeads (proposed from 1 July 2021, but pending of the time of adoption of new law on waste and contaminated soils)

The Netherlands

■ Measures

- (a) Development of a monitoring system to investigate the amount of plastic litter and micro plastics in and along rivers
- (b) Within OSPAR Regional Sea Convention Common Indicator monitoring takes place, consisting of monitoring of beach litter, plastics particles in stomachs of sea birds (floating litter and impact indicator) and seabed litter

■ Achievements

- (a) Monitoring for micro plastics still under development, with a few indicators currently available

UK

■ Measures

(a) Research and Innovation Framework (BEIS)

The UK set out its intention to work with other Commonwealth countries to develop a Marine Plastics Research and Innovation Framework at the Commonwealth Heads of Government Meeting in April 2018.

- i. Development of new jointly-funded interdisciplinary research and innovation programmes through the Framework, and development and delivery of activities by individual partnering countries and organisations
- ii. Forum for sharing research plans and emerging findings with all partners, increasing coordination and adding value to individual programmes
- iii. Support for the development of links between researchers and innovators across the Commonwealth, driving new partnerships and strengthening capacity

The UK has announced that it will contribute GBP25 million towards the Framework, working with Commonwealth partners on operational aspects of the Framework and the development of new bilateral research programmes to support the initiative.

■ Achievements

- (a) The UK has initiated the Marine Plastics Research and Innovation Framework with a £25 million contribution. The initiative will provide a platform and overarching structure for bringing together governments, industry, researchers and practitioners from across the Commonwealth to work together to tackle the global issue of plastic pollution.

USA

■ Measures

(a) **Marine Debris Act (NOAA, USCG)**

- i. Instructions to NOAA to undertake marine debris mapping, identification, impact assessment, prevention and removal efforts
- ii. Provision for NOAA grants for marine debris research and regulation
- iii. Ordering of Committee report on sources, impacts, alternatives, and recommendations to reduce debris
- iv. Charging NOAA and Committee with maintaining a Federal information clearinghouse

■ Achievements

(a) **Marine Debris Act**

- i. Development of Marine Debris Monitoring Shoreline Protocols and media for protocol training.

- ii. Development of technical papers summarising the state of the science on several marine debris-related topics.
- (b) **Clean Water Act**
- i. **Domestic Trash Free Waters Voluntary Work** – Since the start of the Trash Free Waters Program in 2013
 - ii. Eight microplastics research projects
 - iii. Nine data collection projects that have been used to build local community responses
 - iv. **National Coastal Condition Assessment 2010** is a statistical survey of the condition of U.S. marine and Great Lakes coasts. The most recent report can be found here: https://www.epa.gov/sites/production/files/2016-01/documents/ncca_2010_report.pdf
 - v. Novel method for the extraction and identification of microplastics in ocean trawl and fish gut matrices. Research supported by the Environmental Protection Agency. <https://www.semanticscholar.org/paper/Novel-method-for-the-extraction-and-identification-Wagner-Wang/0faad963e6c2d3e676ce0b64e203a4bdf133bc4a>
 - vi. Scleractinian coral microplastic ingestion: Potential calcification effects, size limits, and retention. Research supported by the Environmental Protection Agency. <https://www.ncbi.nlm.nih.gov/pubmed/30301077>
- (c) **Cartagena Convention** - This year, the LBS Protocol will publish a report, entitled “State of the Convention Area Report” (SOCAR) that will be the first ever baseline data of information regarding coastal water quality that reflects national data rather than extrapolated from global assessments.
- (d) **Stormwater Runoff and Marine Litter Prevention- Commission for Environmental Cooperation** - The US, Canada and Mexico implemented two projects to reduce marine litter along the transboundary watersheds in 2017 to 2018. The project focused on reducing litter in storm drains by installing trash capture devices in storm drains in Vancouver, British Columbia and Bellingham, Washington. Scientists then inspected the litter found in the capture devices to better identify sources. The project at the US/Mexico border focused on a far-reaching environmental education campaign within schools, community organisations, businesses, etc. on the impacts of trash in the Tijuana River Estuary and upstream solutions to address it. The project also conducted a feasibility study for a trash boom for the City of Tijuana.

European Union

■ Achievements

(a) High R&D funding against litter

Through the EU Research and Innovation Programme Horizon 2020 (2014-2020) the European Union has funded a number of projects to prevent marine litter and reduce its impact as well as to increase its knowledge base and inform citizens, for example

TOPIOS (<https://cordis.europa.eu/project/rcn/207862/factsheet/en>),
SeaChange (<http://www.seachangeproject.eu/>) and
ResponSeable (<https://www.responseable.eu/>).

These have been completed by a new call for proposals on understanding the effects of micro- and nano-plastics on human health (25 M€), on developing a common European framework to harmonise procedures for plastics pollution monitoring and assessments (EUR2 million), and on the removal of marine litter in important hot spots for marine ecosystems functions (EUR12 million). Horizon 2020 also funds related projects to improve the circularity of plastics and implement the circular economy strategy (new materials, recyclability, etc.). In the new Research and Innovation Programme (2021-2027), Horizon Europe, specific area for research on seas, oceans and inland waters is envisaged for strengthening knowledge and understanding in order to protect, restore and sustainably manage marine, inland and coastal ecosystems and prevent pollution, including marine litter.

Moreover, through the European Maritime and Fisheries Fund (EMFF), the EU is financing projects to prevent and fight marine litter, supporting concrete methodologies and technologies for reducing the volume and harmfulness of sea-based sources of marine litter and for removing and/or recycling it in an environmentally sound and efficient way. These are, for example, MarGnet (<http://www.margnet.eu>), AQUA-LIT (<https://aqua-lit.eu/>) or NetTag (<http://net-tag.eu>).

(b) **Microplastics**

The Commission has started to work to restrict microplastics intentionally added to products, e.g. in cosmetics paints or detergents, by requesting the European Chemicals Agency to review the scientific basis for considering a restriction under REACH. In January this year, ECHA published a restriction dossier stating that health and environmental risks posed by intentionally added microplastics justify an EU-wide restriction. ECHA's Scientific Committees will now review the dossier and give their opinion on whether a restriction is needed. If agreed, an EU-wide restriction could be in place by mid-2021.

The EU is also preparing actions to address microplastics resulting from the use of products, for instance tyres or textiles, or from primary plastic production, for instance spills of pre-production plastic pellets.

3.6. Promotion of international cooperation

According to the reporting, G20 members have supported more than 35 countries through international cooperation, including bilateral and multilateral cooperation. Reporting has been carried out on 23 projects in Southeast Asian countries, nine projects in African countries, four projects in South American countries, and three projects in other countries as projects/initiatives supported through international cooperation.

Australia

■ Measures

- (a) Australia is supporting the Secretariat of the Pacific Regional Environment Programme (SPREP) to assist Pacific Island Countries implement a Pacific Ocean Litter Project. The Project will focus on reducing access to and use of single use plastics, particularly take away food and drink containers, plastic bags and plastic straws. Plastic pollution is a priority for many Pacific Island countries.
- (b) Australia is a member of international bodies and initiatives focussing on marine plastics, including the Commonwealth Clean Ocean Alliance, the United Nations Environment Programme (UNEP) Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), UNEP's Clean Seas Campaign, the International Coalition to Reduce Plastic Bag Pollution and the High Level Panel for a Sustainable Ocean Economy. Under the UN Clean Seas Campaign Australia has made a number of public commitments, including to our four National Packaging Targets, seeking to reduce packaging waste and increase recycling. The targets by 2025 are the following:
- i. 100% of Australian packaging to be recyclable, compostable or reusable
 - ii. 70% of Australia's plastic packaging to be recycled or composted
 - iii. 30% average recycled content to be included across all packaging
 - iv. Problematic and unnecessary single-use plastic packaging to be phased out through design, innovation or introduction of alternatives
- (c) The High Level Panel for a Sustainable Ocean Initiative
The High Level Panel for a Sustainable Ocean Economy is a two-year initiative consisting of heads of government from 14 nations, including Australia. Its role is to amplify and accelerate action for ocean health and wealth and create a roadmap for a rapid transition to a sustainable ocean economy. Marine pollution and the circular economy is a key issue for the Panel.
- (d) IMO Project to reduce marine plastic litter from ships in the Pacific Islands region
In 2018, Australia contributed AUD500,000 to a project to reduce ship-generated waste, notably plastics, in the Pacific Islands region. The two-year project aims to improve knowledge on the source of plastic litter from ships in the region; identify and implement innovative actions to reduce discharges of plastic litter from ships and remove existing litter from the marine

environment; and discourage future illegal litter discharges from ships by improving general awareness about the negative impacts of marine plastic litter.

The project is being implemented by the International Maritime Organization (IMO) to support the enhanced implementation and enforcement of international conventions to prevent pollution from ships in the Pacific Islands region. The project commenced in December 2018 with a scoping exercise undertaken in Fiji and planned for Papua New Guinea (PNG).

The scoping exercise aims to gather necessary data on the extent of the problem and contributing factors to identify national activities that could be implemented in a second phase of the Project in the form of a 'National Project Action Plan (NPAP)', or in potential follow-up projects, agreed by each recipient country.

Canada

■ Measures

(a) Canada spearheaded the Ocean Plastics Charter in June 2018 at the G7 Leaders Summit in Charlevoix. The Charter takes a comprehensive lifecycle approach to prevent marine plastic pollution and lays the groundwork to ensure that plastics are designed for reuse and recycling, in order to protect the environment and keep a valuable resource in the economy.

The Charter includes ambitious actions and quantitative and time bound targets in five areas to improve plastics through a lifecycle management approach including:

- i. Sustainable design, production and after-use markets
- ii. Collection, management and other systems and infrastructure
- iii. Sustainable lifestyles and education
- iv. Research, innovation and new technologies
- v. Coastal and shoreline action

Specific targets include:

- i. Working with industry towards 100% reusable, recyclable, or where viable alternatives do not exist, recoverable plastics by 2030
- ii. Working with industry towards increasing recycled content by at least 50% in plastic products where applicable by 2030
- iii. Working with industry and other levels of government to recycle and reuse at least 55% of plastic packaging by 2030 and recover 100% of all plastics by 2040
- iv. Working with industry towards reducing the use of plastic microbeads in rinse-off cosmetic and personal care consumer products, to the extent possible by 2020, and addressing other sources of microplastics

To support the objectives of the Charter, Canada announced CAD100 million funding

commitments of:

- i. CAD65 million through the World Bank PROBLUE fund to address plastic waste in developing countries
- ii. CAD20 million to spark innovation to beat plastic pollution in developing countries through the G7 Innovation Challenge to Address Marine Litter
- iii. CAD9 million to an incubator network to prevent plastic waste from entering the world's oceans
- iv. CAD6 million for innovative private-public partnerships through the World Economic Forum Global Plastics Action Partnership

Related URL: Ocean Plastics Charter:

<https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/ocean-plastics-charter.html>

■ Achievements

- (a) Through the World Economic Forum's Global Plastics Action Partnership (GPAP), Canada, as a founding member, has contributed to the development and launch of a National Action Plan Partnerships (NPAP) for Indonesia. As the GPAP's first national partnership, Indonesia provides key learnings and expertise that will be invaluable in scaling up efforts and influencing other markets across the ASEAN region and globally. With 265 million people and as ASEAN's largest economy, Indonesia is a key player both regionally and globally. Plastic pollution has become a major challenge facing the country's people, environment and economy. The successful launch of the NPAP has quickly led to strong and ongoing collaboration with the Government of Indonesia and diverse stakeholders in their efforts to channel concerted solutions and advance the shift towards a circular plastics economy in the country.
- (b) Furthermore, in support of global momentum on plastics, Canada is expanding the implementation of the Ocean Plastics Charter by seeking additional endorsements, which is formalised through an expression of interest to Canadian officials. Partners are then invited to implement the objectives and commitments of the Charter within their respective jurisdictions and area of influence, and are encouraged to report on domestic progress in implementing the Charter through their own reporting processes and mechanisms. To date, there are 22 governments (Canada, Peru, Fiji, Monaco, Costa Rica, the European Union, France, Germany, Italy, United Kingdom, Jamaica, Kenya, Mexico, Norway, the Marshall Islands, Netherlands, Senegal, Nauru, Palau, Cabo Verde, Myanmar, and Samoa) and 64 businesses and organisations (including PepsiCo, Walmart, Unilever, Ikea, Nestlé, Volvo, Ocean Wise, PyroCore Ltd, and the International Union for Conservation of Nature) that have endorsed the Charter.
- (c) Canada contributed to the advancement of policies and scientific knowledge in several international fora, such as the G7, G20, the Arctic Council, and various bodies under the United

Nations. For instance, Canada pledged to take action on marine litter via the United Nations Clean Seas Campaign in 2017; and, is a member of the United Nations Global Partnership on Marine Litter. In 2018, Canada contributed to the updated guidance on fishing gear through the Food and Agriculture Organisation of the United Nations and joined the Global Ghost Gear initiative to tackle lost fishing gear. Canada contributed to the study on marine litter and microplastic in the Arctic under the Arctic Council's Protection of the Arctic Marine Environment (PAME) working group and is participating in the development of the Regional Action Plan on Marine Litter in the Arctic. The Government of Canada is also contributing to work under the London Convention/Protocol to improve analysis of plastic particles in dredged materials and sewage sludge by developing scientific methods to detect plastics in dredged materials from ocean disposal sites. In addition since 2017, Canada has collaborated with the United States and Mexico via the Commission for Environmental Cooperation engaging local decision makers and the community to identify marine litter challenges, implement small-scale solutions, and build local capacity and awareness through citizen science, education and outreach.

China

■ Measures

- (a) Participation in the international process of dealing with marine litter and plastic pollution, the UNEP Regional Sea Action Plan, and the UNEP Regional Sea Action Plan, fully complying with the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and working with the international community to promote global marine waste and plastic pollution prevention and control through bilateral and multilateral mechanisms
- (b) Organising international workshops on marine debris, micro-plastics and sustainable use of marine resources

France

■ Measures

- (a) On-land actions:
 - i. Contribution to European negotiations to prevent microplastics in products
- (b) International collaboration
 - i. Participation in regional sea conventions for knowledge and best practices sharing and implementation of action plans
 - ii. Participation in international fora, negotiations and guidelines: JRC, UNEP, GESAMP, European Task Group on Marine Litter, Basel convention, etc. In particular, active participation in the adoption of the modification of the annexes of the Basel Convention, in order to control cross-border shipments of mixed plastic wastes

Finland

■ Achievements

- (a) Good collaboration within EU on marine litter, including marine litter monitoring, and development of the Single-Use Plastics Directive based on the data on most commonly found plastic litter objects on beaches collected due to the marine monitoring obligations of the Marine Strategy Framework Directive

Related URL: https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm

- (b) Good collaboration on the regional sea level within HELCOM on monitoring, development of indicators, as well as on addressing the problem and targeting measures to combat it under the HELCOM Marine Litter Action Plan from 2015

Related URL: <http://www.helcom.fi/action-areas/marine-litter-and-noise/marine-litter/marine-litter-action-plan>

Germany

■ Measures

- (a) Implementing regional measures under the roof of Regional Seas Cooperation contributes to the implementation of the G20 Action Plan
- (b) Launch of PREVENT Waste Alliance on 9 May 2019, demonstration projects on better plastic waste management in Indonesia and Ghana as well as on plastic waste prevention will be implemented

Related URL: <https://www.prevent-waste.net/en/>

- (c) Strategic Alliance on marine litter prevention with a multi-national company in Egypt, Morocco, Mexico and the Philippines
- (d) Start of Regional project “Developing capacities for preventing marine litter” in South-East Europe in 2018
- (e) German development cooperation advising on the introduction of extended producer mechanisms on packaging waste in Tunisia, Algeria, and Egypt
- (f) Launch by the German KfW Development Bank (financial cooperation) of the Clean Oceans Initiative together with EIB and AFD

Related URL: <https://www.eib.org/en/publications/the-clean-ocean-initiative.htm>

- (g) Global advisory project “Concepts for sustainable waste management and circular economy” with a component on marine litter, including the following:
- i. Cooperation with the European Union with partners in Indonesia, Philippines, Thailand, Vietnam and China that is co-funded by BMZ: policy reforms and pilot projects around plastic waste prevention and management will be implemented

- ii. Cooperation with the “Action Platform for Source-to-Sea Management (S2S Platform)”. Source-to-sea approaches for marine litter prevention have been elaborated and will be piloted

Related URL: <https://www.giz.de/en/worldwide/15109.html>

- (h) Co-funding for marine litter prevention activities of the World Bank, among others for the PROBLUE trust fund and for technical cooperation with Myanmar, Cambodia and Kenya
- (i) Total funding by BMZ/Germany of appr. EUR11 million between 2015 and 2019, for projects dedicated specifically to technical cooperation on marine litter prevention. Additional funding for waste management projects under technical and financial cooperation sometimes indirectly contributing to marine litter prevention, as well as preparation for new projects for South-East Asia and the Caribbean

■ Achievements

- (a) Within the PREVENT Waste Alliance: Studies on 1) the prevention of plastic packaging waste and single-use plastic, 2) guidelines for the application of secondary plastics and 3) toolbox on extended producer responsibility systems for packaging waste with special focus on Ghana and Indonesia
- (b) Within Strategic Alliance: Guidelines on coprocessing waste in cement plants, measures to improve collection and sorting of waste at local level in Egypt, Morocco, Mexico and the Philippines
- (c) Within global advisory project “Concepts for sustainable waste management and circular economy”: 1) For the regional workshop “Managing Packaging Waste – Preventing Marine Litter” in Bali, Indonesia (together with ASEAN), recommendations on packaging waste management have been submitted to the ASEAN working group “Coastal and Marine Environment”. In 2019, the ASEAN Bangkok Declaration was adopted.
- (d) Within cooperation with Source-to-Sea Platform: publication of the Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage in River Basins and the related policy brief. Pilot projects will be implemented in Viet Nam and Ethiopia.

Related URL: <https://www.siwi.org/publications/source-to-sea-framework-for-marine-litter-prevention/>

Japan

■ Measures

- (a) Support for programmes including ODA to developing countries for waste regulations, capacity and institutional building for waste management, formulation of action plans on marine litter in each country, and installation of high quality environmental infrastructure such as waste-to-energy plants
- (b) Support to ASEAN countries based on “ASEAN+3 marine plastic litter cooperation action initiative”
- (c) Support for human resource development on marine plastic litter monitoring in Southeast Asian area

■ Achievements

Scale and/or effect of assistance for countries that need technical capacity development;

	FY2014	FY2015	FY2016	FY2017	FY2018
Number of participants joining training programmes	1,352	2,996	2,669	2,160	Under investigation

(reference)

The above numbers are provided by JICA.

There are further training programmes led by MOEJ, which are not included on the above table, such as capacity building training programmes in Japan, bilateral workshops on waste management, and multilateral forums, inter alia, the Regional 3R Forum in Asia and the Pacific (<http://www.uncrd.or.jp/index.php?menu=389>) and the African Clean Cities Platform (ACCP) (<https://africancleancities.org/index.html>).

Republic of Korea

■ Measures

Strengthening and Improvement for Marine Litter Response in Indonesia

- (a) The Ministry of Oceans and Fisheries of Korea and the Coordinating Ministry for Maritime Affairs of Indonesia, Ministry of Maritime Affairs and Fisheries, developed an ODA project ‘Strengthening and Improvement for Marine Litter Response in Indonesia’ to increase awareness on marine litter through training and education programmes and to enhance the capacity on marine litter response through marine litter monitoring education programmes targeting public officials, NGOs, and local residents.

- (b) The first Marine litter monitoring capacity building workshop is to be held in Labuan Bajo, Indonesia from 28 October to 1 November. The workshop will contain the overview of international marine litter problem and marine litter policies as well as marine litter monitoring education and practice. Participants will learn how to conduct marine litter monitoring at the beaches of Labuan Bajo and do a pilot marine litter monitoring for five different monitoring spots.
- (c) The Ministry of Oceans and Fisheries of Korea is planning to invest approximately USD250,000 in this project until 2021.

Republic of South Africa

■ Measures

- (a) Nairobi Convention: Regional Marine Litter Action Plan
- (b) Abidjan Convention: development of a Regional Marine Litter Action Plan
- (c) International Union for the Conservation of Nature MARPLASTICS Initiative
- (d) Nairobi Convention WIO-SAP Project
- (e) Commonwealth Marine Litter Project
- (f) Sweden bilateral cooperation on implementation of the Source to Sea approach
- (g) Ad Hoc Open Ended Expert Group on Marine Litter and Microplastics

Russia

■ Measures

- (a) International cooperation for effective adaptation of best international practices
 - i. Marine plastic litter is frequently discussed at UNEP meetings, regional organisations like APEC, ASEAN, East Asian Summit, ESCAP, G20
 - ii. The Russian Federation initiated the new cooperation track on marine (river) plastic litter in the frame of “Clean Rivers of BRICS”

Singapore

■ Measures

- (a) Voluntary commitment to support implementation of SDG14. Specifically, under SDG14.1, Singapore committed to conducting a Regional Training Programme on Waste Management and Reduction of Marine Litter as part of the Singapore-Norway Third Country Training Programme (TCTP) in October 2017 and March 2019.
- (b) Provision of capacity building assistance to other countries on the implementation of relevant international instruments for the prevention of pollution from ships, such as the International Maritime Organization's (IMO) International Convention for the Prevention of Pollution from Ships (MARPOL).
- (c) IMO's Marine Environment Protection Committee (MEPC) adopted the "Action Plan to address marine plastic litter from ships" at its 73rd Session (22-26 October 2018), which aims to enhance existing regulations and introduce new supporting measures to reduce marine plastic litter from ships. Following which, MEPC 74 (13-17 May 2019) developed and approved the Terms of Reference for an IMO Study on marine plastic litter from ships. MEPC 74 also approved the establishment of a Correspondence Group on Development of a Strategy to Address Marine Plastic Litter from Ships, which is currently being led by Singapore.
- (d) Adoption of the Bangkok Declaration on Combating Marine Debris and the ASEAN Framework of Action on Marine Debris, alongside other ASEAN member states, to protect the marine environment and strengthen regional cooperation on marine debris issues.
- (e) Active participation in regional marine litter initiatives and workshops organised by the Coordinating Body on the Seas of East Asia (COBSEA) and Partnerships in Environmental Management of the Seas of East Asia (PEMSEA).

The Netherlands

■ Measures

- (a) Regional Action Plan Marine Litter

In 2014 OSPAR established its Regional Action Plan (RAP) Marine Litter. The plan describes actions and measures for reducing the litter problem and target both sea-based sources and land-based sources, via the rivers or otherwise. The member states link as many of their national litter measures as possible to OSPAR's action plan. The Netherlands and Portugal together have a coordinating role here. The plan supports the ambitions of the MSFD and Sustainable Development Goal 14 for achieving a significant reduction in marine litter by 2025. The Netherlands has a leading role in the development of the following OSPAR measures: Implementing regional coordination of the Port Reception Facilities (PRF) directive, reducing the impact of dolly rope and other fisheries related waste streams, exchanging best practice to reduce waste in rivers, tackling microplastics in cosmetics products and other sources and

reinforcing Fishing for Litter agreements.

(b) Bilateral collaboration

The Netherlands works towards an international Green Deal with Indonesia focused on the use of circular design and chemical recycling of single-use plastic products and packaging. The feasibility of public-private investment in a factory for chemical recycling will be examined. The Netherlands shares expertise with the Indonesian authorities and the packaging sector there about effective ways of using Extended Producer Responsibility (EPR) for plastic collection, sorting and recycling. In the future pilot and demonstration projects will also start at ten sites where plastic is collected separately.

UK

■ Measures

(a) 25 Year Environment Plan

- i. Increased assistance to developing nations tackle pollution and reduce plastic waste, including through UK Aid.
- ii. Work through the UN, G7 and G20 to tackle marine plastics pollution at an international level.
- iii. Work with the International Maritime Organization to address the control and prevention of ship-source pollution.

(b) Commonwealth Blue Charter & Commonwealth Clean Ocean Alliance

Through nine Action Groups championed by 12 countries, the Commonwealth will use its global perspective to develop and implement a fair, equitable, inclusive and sustainable approach to global ocean economic development and protection. Action Groups will focus on the following areas: Aquaculture, Blue Economy, Coral Reef Protection and Restoration, Mangrove Restoration, Ocean Acidification, Ocean and Climate Change, Ocean Observations, Marine Plastic Pollution and Marine Protected Areas.

As Champions of the Marine Plastic Pollution Action Group the UK and Vanuatu have brought together a group of member states to form the Commonwealth Clean Ocean Alliance (CCOA), supported by the UK's GBP70+ commitment.

Related URL:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

(c) Technical Assistance Facility (TAF)

Through the TAF, up to GBP10 million has been made available to CCOA members (who are ODA-eligible) to support the implementation of commitments made under the CCOA. Assistance could take a number of forms, for instance, help in design and implementation of new policy (e.g. plastic bag bans), or help in design of plastics and waste management

strategies.

There are three stages to delivering the assistance:

- i. Discussion with each partner government to establish their intended actions and what assistance they might need
- ii. UK government (Defra and DFID) agreeing which activities should be funded
- iii. Sourcing of relevant expertise and delivery of the assistance

23 countries so far have been consulted on the CCOA technical assistance facility and will now begin the scoping exercise.

(d) OSPAR

OSPAR is a mechanism by which 15 Governments & the EU cooperate to protect the marine environment of the North-East Atlantic through a Regional Action Plan which includes tackling marine plastic litter. The UK is working regionally with other countries in OSPAR to:

- i. Establish the feasibility of setting appropriate reduction targets and/or threshold values for litter on beaches, on the sea floor, sea surface, and micro plastics, taking into account regional or sub-regional specificities.
- ii. Develop an indicator for micro-litter in sediment.
- iii. Establish, if practicable, whether the amount of litter and micro-litter ingested by marine animals adversely affects the health of the species concerned.
- iv. Develop appropriate measures to reduce litter types harmful to the marine environment.

(e) Global Plastics Action Partnership (GPAP)

The UK supports and funds this partnership hosted by the World Economic Forum, along with Canada and several companies, namely The Coca-Cola Company, Dow Chemical and the PepsiCo Foundation. The initiative is driving collaboration between government and stakeholders in coastal economies who are battling waste.

Aims to translate ambitious commitments into action and show how business, communities and government can redesign the global “take-make-dispose” economy as a circular one. The first collaboration (National Plastic Action Partnership) is with the Government of Indonesia that has a national plan to reduce marine plastic pollution by 70% over the next six years.

A National Plastic Action Partnership has since been launched in Ghana (October 2019) and another is expected to launch in Vietnam in early 2020.

(f) G7 Oceans Plastics Charter and Action Plan on Marine Litter

This Action Plan includes land and sea-based priorities to reduce marine debris and carry out the following:

- i. Move toward a more resource-efficient and sustainable approach to the management of plastics
- ii. Work with industry towards 100 percent reusable, recyclable or, when viable alternatives do not exist, recoverable plastics by 2030.
- iii. Use of green public procurement to reduce waste and support secondary plastics markets

and alternatives,

- iv. Work with industry and other levels of government to recycle and reuse at least 55 percent of plastic packaging by 2030
- v. Strengthening of standards for labelling to enable consumers to make sustainable decisions on plastics

(g) United Nations

The UK is committed to SDG Target 14.1: 'By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution'.

The UK is committed to the UNEA 4 Resolutions:

Res.1 – Innovative Pathways to Achieve Sustainable Consumption and Production

Res.6 – Marine Plastic Litter and Microplastics

Res.7 – Environmentally Sound Management of Waste

Res.9 – Addressing Single-Use Plastic Products Pollution

Res.11 – Protection of the Marine Environment from Land-Based Activities

- i. Addressing the problem of marine litter and microplastics prioritising a whole life cycle approach and resource efficiency, building on appropriate existing initiatives and instruments, and supported by and grounded in science, international cooperation, and multi-stakeholder engagement
- ii. Compiling available scientific and other relevant data and information to prepare an assessment on sources, pathways, and hazards of litter including plastic litter and microplastic pollution and its presence in the rivers and oceans, scientific knowledge about adverse effects on ecosystems, potential adverse effects on human health and environmentally sound technology innovations
- iii. Act through Regional Seas Programme (OSPAR)
- iv. Reduction in the discharge of microplastics into the marine environment including through phase-out of products that contain microplastics
- v. Fostering innovation of product design to reduce secondary microplastic release from land- and sea-based sources and improve waste management where needed
- vi. Prevention of losses of primary microplastics, especially pre-production pellets (flakes and powders), to prevent their spills into the environment, across the whole manufacturing and supply chain
- vii. Elaborating guidelines on plastic use and production in order to inform consumers, including on standards and labels, to incentivize businesses and retailers to commit to sustainable practices and products, and to support governments to promote the use of information tools and incentives to foster sustainable consumption and production
- viii. Awareness-raising on the importance of and to encourage sustainable consumption and production with regard to products likely to generate marine litter, including plastic litter and

microplastics

- ix. Promotion of environmentally-sound waste management and marine plastic litter recovery
- x. Identifying technical and financial resources or mechanisms for supporting countries in addressing marine plastic litter and microplastics

The UK supports UN Clean Seas.

The campaign contributes to the goals of the Partnership on Marine Litter (Information below).

- i. Engaging the general public and the private sector in the fight against marine plastic pollution
- ii. Addressing the root-cause of marine litter by targeting the production and consumption of non-recoverable and single-use plastic
- iii. Support and commitment to the UN Partnership on Marine Litter and the goals
- iv. Reduction in the impacts of marine litter worldwide on economies, ecosystem, animal welfare and human health
- v. Enhancement of international cooperation and coordination through the promotion and implementation of the Honolulu Strategy - a global framework for the prevention and management of marine debris, as well as the Honolulu Commitment – a multi-stakeholder pledge
- vi. Promotion of knowledge management, information sharing and monitoring of progress on the implementation of the Honolulu Strategy
- vii. Promotion of resource efficiency and economic development through waste prevention e.g. 4Rs (reduce, re-use, recycle and re-design) and by recovering valuable material and/or energy from waste
- viii. Increase in awareness on sources of marine litter, their fate and impacts
- ix. Assessment of emerging issues related to the fate and potential influence of marine litter, including (micro) plastics uptake in the food web and associated transfer of pollutants and impacts on the conservation and welfare of marine fauna

■ **Achievements**

- (a) Internationally the UK is delivering action on the ground to support countries take ambitious action. The Commonwealth Clean Ocean Alliance (CCOA) was announced by the UK Government at CHOGM 2018. The alliance, now 31 members strong, is encouraging Commonwealth leaders to take greater action on plastic pollution to protect ocean and marine biodiversity. The CCOA is demonstrating global leadership and is showcasing the Commonwealth's international reach, supported by governments, industry and NGOs. A support package worth up to GBP70m has been announced since CHOGM to support countries in the Commonwealth, and beyond, to drive research and innovation, improve waste management and reduce avoidable plastic.

- (b) The GBP6m Commonwealth Litter Programme (CLiP) forms part of the GBP70m support package. Three national marine litter action plans have been launched, for Belize, Solomon Islands and Vanuatu. The action plans present the data and research undertaken in country, and lay out recommended policy interventions under each CLiP pillar (land-based sources, marine-based sources, removal, science and research, outreach and education) to help tackle marine litter. As a result of CLiP research, Vanuatu has announced a ban on six single-use plastic items.
- (c) Four microplastics laboratories have been set up and microplastics monitoring programmes developed (Belize, South Africa, Vanuatu) to collect data and feed into/establish an evidence base. Capacity-building in country ensures that data sets and evidence bases continue to grow, and work continues well beyond the duration of the programme on the ground.

USA

■ Measures

(a) Marine Debris Act (NOAA, USCG)

- i. Instructing US agencies to collaborate with international partners on scientific research identifying sources and impacts
- ii. Encouragement for the development of new international agreements to mitigate discharge and provide technical assistance
- iii. Provided funds to Ocean Conservancy to support its Global Cities Marine Debris Initiative. Related URL: 2016-2017 Interagency Marine Debris Coordinating Committee Biennial Report: https://marinedebris.noaa.gov/sites/default/files/imdcreport__2016_2017.pdf

(b) Waste Prevention & Strengthening Recycling (USAID):

- i. **Clean Cities, Blue Ocean (CCBO)** - In 2019, USAID awarded a new programme with the goal of preventing ocean plastic pollution by building the capacity and commitment of local institutions in developing countries for 3Rs (Reduce, Reuse, and Recycle) and solid waste management, with a focus on urban and peri-urban riverine and coastal areas. This will be a five -year program and will be global in scope.
- ii. **Municipal Waste Recycling Program (MWRP)** – USAID reduces land-based sources of marine plastic pollution by supporting locally-led grants and providing technical assistance to local actors in Indonesia, Philippines, Sri Lanka and Viet Nam to improve solid waste management and waste recycling efforts. The scope of the grants range from community-led awareness raising and education campaigns, to improving working conditions of informal waste collectors, engaging and empowering women, collaborating with the private sector, and supporting local governments in their efforts to collect and manage waste sustainably. To achieve its goals, the project focuses on three priority areas: 1) strengthening capacity of local actors and their collaboration; 2) locally appropriate

innovations and improved decision making; and 3) engagement with the private sector for developing and implementing market-driven solution to marine plastic pollution and strengthening the recycling value chain.

Related URL: <http://urban-links.org/mwrp/>

- (c) **Infrastructure Investment (USAID): Development Credit Authority (DCA) partial loan guarantee for Circulate Capital** – USAID signed an agreement with Circulate Capital to provide a USD35 million, 50 percent loan-portfolio guarantee through DCA to incentivise private capital investment in the recycling value chain in South and Southeast Asia. The agreement leverages more than USD100 million from a private-sector investment strategy managed by Circulate Capital, a firm dedicated to incubating and financing companies and infrastructure that prevent ocean plastic and backed by multinational corporations, including PepsiCo, Procter & Gamble, Dow, Danone, Unilever, and Coca-Cola.

Related URL: <https://urban-links.org/ocean-plastics/>

- (d) **Wastewater Cooperation: Cartagena Convention - The Protocol** works with countries to help regulate their wastewater and nutrient pollution as priority pollutants. Recently, EPA worked with State Department to get the parties to agree to include marine litter as a third priority pollutant. Marine litter is now more formally embedded within legal obligations under the LBS Protocol.

■ Achievements

(a) **Global Partnership on Marine Litter**

The GPML is coordinated by the UN Environment Programme and recently updated its Framework document and is implementing its 2019 action plan.

(b) **Resource Conservation and Recovery Act (EPA) Voluntary Programs**

(c) **USAID Municipal Waste Recycling Program**

To date, the program has awarded a total of 30 locally-led grant projects in Indonesia, Philippines, Sri Lanka and Viet Nam, with a total of 2.6 million people in these countries benefiting from the program activities. In addition, a total of 597,000 kg of plastic waste has been diverted from the natural environment through recycling and improved solid waste management practices.

(d) **Clean Water Act**

Waste Management and Inclusive Capacity Building- Trash Free Waters-

- i. Jamaica - Prioritise marine litter and solid waste management needs and develop projects and activities, including: procuring bins in Whitehouse-Bluefields communities; training schools and local staff in placing them and using the bins; and educating the general public about the impacts of trash.
- ii. Panama - Prioritize marine litter and solid waste management needs and develop projects and activities, including: identified included public awareness raising on solid waste

management and the impacts of trash with local schools and universities. The project also included installation of a river trash boom on the Juan Diaz River.

- iii. Peru - Stakeholder workshop held involving over 70 participants. The pilot project identified for Chincha addressed solid waste management through helping two communities segregate and selectively collect at the source in order to recover more valuable recyclable material and prevent that material from entering waterways and the ocean.
- iv. Starting in US Federal fiscal year 2019, the domestic Trash Free Waters program will be collecting data for the following metrics: 1) Number of waterways that show an improvement in reduction of trash with participation and/or assistance from EPA; 2) Number of trash reduction or litter prevention projects in progress or completed in the fiscal year with participation and/or assistance from EPA; 3) Number of new or reissued MS4 permits that have quantitative or specific prescriptive provisions that address trash.

(e) Striving for Increased Public Participation in Environmental Protection in Central America through a Small Grants Program with Civil Society Organisations

To date, this Department of State program provided training to over 5,000 people, with 160 people actively involved in community-based initiatives. This initiative strengthened solid waste management capacity in 10 communities through training 61 municipal employees and authorities, resulting in the improved management of over 3,500 tons of solid waste, including 43 tons of plastic waste recycled.

- (f) **DCA** - The first loan utilising the USAID DCA loan guarantee is expected in Fall 2019.

European Union

■ Measures

(a) Regional and international collaboration

Around the EU, the four Regional Sea Conventions (in Mediterranean, Northeast Atlantic, Baltic and the Black Sea) developed and implemented, with EU technical and financial support, plans against marine litter; G7 (in 2015) and G20 (in 2017) also adopted Action Plans against marine litter. Regional plans and initiatives against marine litter exist (Southeast and Northwest Pacific, East Asian Seas) or are under development (Persian Gulf, NE Pacific, Arctic) also outside the EU.

The EU finances projects in its neighbourhood (Mediterranean and Black Sea) and the Commission services are working on large projects that will contribute to marine litter reduction internationally, for example in Southeast Asia, the Pacific and South America (in the order of EUR800 million, for the period 2014-17).

In May 2019, the EU played a central role to achieve international decision-making on trans-boundary movements of most plastic waste subject to the controls of the Basel Convention. The new rules (which will enter into force in 2021) will improve controls on exports and imports

of plastic waste. Countries on the receiving end will be able to refuse foreign shipments of mixed and unsorted plastic waste. It is important to stress that the EU has stricter rules than the Basel Convention: this means that, from 2021, it will be prohibited for the EU to export plastic waste covered by the Basel Convention to countries outside the OECD. The amendments to the Basel Convention is an important step towards a better control of global trade in plastic waste and will help developing countries to control imports into their territories. This will support the prevention of marine litter and encourage sorting and recycling of plastic waste, in line with EU circular economy policies.

(b) International Ocean Governance Agenda

Fighting marine litter and the “sea of plastic” is one of the 50 actions included in the International Ocean Governance Agenda adopted by the EU in November 2016 (please see more information below).

Related URL: https://ec.europa.eu/maritimeaffairs/policy/ocean-governance_en

■ **Achievements**

(a) International Ocean Governance Agenda

Over the last two years, under its International Ocean Governance Agenda, the EU has taken action to address marine litter at source and has engaged in shaping the international response to this increasingly pressing problem. It has done so by building on the EU Strategy for Plastics in a Circular Economy (see above). The EU has actively supported the follow-up of the Resolution on marine litter and micro-plastics adopted at the third UN Environment Assembly in December 2017, and the implementation of the Resolution adopted at the fourth UN Environment Assembly in March 2019.

It has also actively supported the efforts made by the G7 and G20 members.

It is providing targeted support to improving waste management in the Pacific and in the Southeast Asia, which faces massive challenges in tackling plastic pollution. The EU has secured specific funding to develop marine litter baselines as part of the implementation of the Marine Framework Directive. Maps of litter distribution are now available through the European Maritime Observation and Data Network (EMODnet). Additional financing was earmarked in 2017 to support the reduction, monitoring and quantification, removal and recycling of marine litter. Investment of EUR22 million has been done to support fishing for litter operations. Furthermore, the EU has proposed the adoption of measures to prevent marine pollution associated with fishing activities in all Regional Fisheries Management Organisations to which it is party.

The EU engaged with the FAO as well in view of the adoption of voluntary guidelines on the marking of fishing gear, and with the IMO as regards the newly established action plan on marine litter from ships.

Lastly, Europol, with the support of European Fisheries Control Agency, European Maritime

Security Agency and the European Border and Coast Guard Agency collaborated with INTERPOL in an unprecedented operation to fight maritime pollution in 2018. The operation, code-named 30 Days at Sea, brought together some 276 law enforcement and environmental agencies across 58 countries to take targeted action to tackle crime against marine pollution law. The results were outstanding, with more than 3800 actions worldwide detecting 356 pollution incidents. These led to 120 arrests and 436 administrative cases of prosecution for illegal discharges of oil and garbage from vessels, shipbreaking, breaches of shipping emissions regulations, river pollution and land-based run-off into the sea.

4. Best Practices

Countries are taking various unique practices. Networking and collaboration, best practices by local governments, standardised protocol, code of conduct, awareness-raising campaigns, and international cooperation for prevention and reduction of plastics are reported by many countries.

■ Brazil

- (a) Development of a national standardised protocol to assess marine litter
- (b) Clean ups
- (c) Institutional support for the cleaning up of beaches, estuaries, rivers and lakes
- (d) Solid Waste Management: Technical support for local governments on solid waste management and selective waste collection
- (e) Communication plan:
Development of a website for dissemination and exchange of experiences and good practices on cleaning beaches, riverbanks, pelagic environments, seaports and inland waters

Related URL: <http://www.mma.gov.br/agenda-ambiental-urbana/lixo-no-mar.html>

■ Canada

- (a) Canada-wide Action Plan for Extended Producer Responsibility
https://www.ccme.ca/en/current_priorities/waste/epr.html
- (b) Canadian Code of Conduct for Responsible Fishing Operations
<http://www.dfo-mpo.gc.ca/fisheries-peches/policies-politiques/cccrfo-cccpr-eng.html>

■ China

- (a) Beach garbage cleaning activities have been organised in coastal cities such as Yantai, Dalian and Rizhao to enhance public awareness, refining consumption habits, reducing the use of disposable plastic products, and enhancing public awareness of marine pollution prevention.
- (b) Since 2007, marine waste has been included in the routine monitoring of the marine environment. In 2016, marine microplastics were also included in the routine monitoring of the marine environment, and the monitoring results were regularly released to the public through the “Communication on the State of Marine Eco-Environment”. In 2017, for the first time, China expanded the monitoring scope of marine microplastics to the oceans and polar regions, and discovered the presence of microplastics in Antarctic waters.
- (c) Shanghai has established a comprehensive classification system for the classification, compression, classified transportation and classified disposal of household waste, promoting the source reduction of domestic waste and recycling of resources, achieving the goal of reduction,

resource utilisation and environmental harmlessness.

- (d) Xiamen has established a mechanism for marine environmental sanitation. Through measures such as the control of land source pollutants, seacoast clean-up, sea-surface clean-up, interception in estuaries, etc., it has effectively promoted the work of marine litter management in Xiamen.

■ Finland

- (a) Plastics Roadmap for Finland is a good example of a cross-sectorial programme for restricting loss of plastics to the environment, involving the industry as well as the civil society. The Finnish Marine Strategy with the Programme of Measures targeting also marine litter and microplastics is a good example of a programme with specific targets and focused measures for the marine environment and complementing the Plastics Roadmap, as well as coordination with other countries activities under the Regional Sea organisation.

Related URL: Finland's Plastics Roadmap <https://muovitielkartta.fi/in-brief/>

- (b) Broad activities on data and knowledge gathering to form a firm basis for decisions. In our case that encompasses scientific research, monitoring method development and monitoring of both macro litter and microplastics, as well as producing an assessment of most important sources and pathways of plastic litter to the sea.
- (c) Adaptation of activities as information basis is strengthened, i.e. "learning by doing".

■ France

- (a) A citizen science platform is very useful to give a clear idea of all the clean-ups that occur and of the quantity (and qualification) of litter collected. Such a platform is a way to share the good guidelines to conduct clean-ups (to preserve biodiversity and the nesting of birds, etc.) and to communicate on this issue and on actions, and link the population who wants to get involved to the NGOs already in place.
- (b) The prohibition of single-use plastic items (which are most found in the marine environment) is a good way to develop alternatives and to provide citizens with a safer choice of products and develop new habits of consumption. It is also very coherent with a better use of resources and the implementation of a circular economy.
- (c) Actions on-land or in rivers and water treatment networks are crucial: they involve proper waste collection and water treatment, fight against littering, awareness raising (of objects not to be thrown in waste water, etc.), etc.
- (d) The extended producer responsibility allows to finance the collection and recycling of certain waste. They can be particularly relevant when a certain waste is most found and whose collection can be difficult to put in place (e.g. cigarette butts).

■ Indonesia

- (a) City of Banjarmasin in South Kalimantan is the first Indonesian city to ban plastic shopping bags at a modern market. This local policy has been implemented since July 2016 and it is working smoothly without any objections from citizens or businesses. It has succeeded in meeting the two main targets i.e. to reduce potential waste generation of plastic waste as amount of 52 million plastic bags (equivalent to 257 tons of plastic bags) a month; and to change behaviour of citizens in Banjarmasin so that they go shopping without plastic bags and bring their own reusable bags. This success story was then followed by other cities such as Balikpapan East Kalimantan, Bogor West Java, and Denpasar Bali.
- (b) Province of Bali is another Indonesian best practice since Bali has banned three types of single-use plastic including plastic shopping bags, plastic drinking straws, and plastic foam containers (well known as styrofoam) since early 2019. The policy is working well on the ground without any objections from the public or businesses. Both the citizens of Bali and tourists who visit Bali are fully supporting this policy. However, the potential reduction of plastic waste is still under investigation; there is no data available yet.

■ Japan

(a) **Strengthening of domestic plastic waste management system**

Japan is aiming to build a domestic resource circulation system by promptly installing plastic products recycling facilities, by utilising the “Project for promoting installation of advanced equipment such as CO2 saving type recycling” (FY2019 budget: JPY3.33 billion, FY2018 revised budget: JPY6 billion). In addition, it is planned to support recycling technology development of plastic products, as well as promoting efficient use of resources that have not been collected or recycled, under the “Project on building a recycling system for plastics to support decarbonised society” (FY2019 budget: JPY3.5 billion).

(b) **Support to collection and treatment of coastal marine litter by local government**

Japan promotes collection and treatment of marine litter by local governments, through utilising the “Project for promoting local measures against coastal marine debris” based on the “Marine Litter Act” (FY2018 second revised budget: JPY3.1 billion; FY2019 budget: JPY400 million). In addition, fishery multi-functional measures (FY2019 budget: JPY2.9 billion) are being used to encourage fishermen to take action on the collection and treatment of marine litter including marine plastics, for the maintenance and recovery of the marine ecosystem. Furthermore, Japan promotes local governments to cooperate with fishermen to bring back to port any litter that they collect while they are fishing by utilising the subsidies under the “Project for promoting local measures against coastal marine debris” based on the “Marine Litter Act”.

Related URL: http://www.env.go.jp/guide/budget/2019/19juten-sesakushu/032_3012.pdf
(Japanese only)

(c) **Plastic Smart campaign**

To solve marine plastic issues, Japan actively promotes the “Plastics Smart” campaign, encouraging cooperation and collaboration among a wide range of stakeholders, such as national, local public organisations, citizens, NGOs, businesses, and research institutes. Plastics Smart promotes “the wise use of plastics” to prevent the generation of marine litter.

Related URL: <http://plastics-smart.env.go.jp/en/>

(d) **International cooperation for promoting measures in developing countries**

Japan has launched the “MARINE Initiative” to advance effective actions to combat marine plastic litter at a global scale focusing on (1) management of waste, (2) recovery of marine litter, (3) innovation, and (4) empowerment. Under this initiative, Japan will support empowerment in developing countries to promote waste management, recovery of marine litter, and innovation, including provision of training for 10,000 officials engaging in waste management all over the world by 2025.

Japan provides support to ASEAN countries, based on the ASEAN+3 initiative, for various initiatives such as: awareness-raising of local governments, citizens and business units; development of national action plans on marine litter; capacity building for proper waste management including waste-to-energy infrastructure; as well as establishment of knowledge-hub to promote knowledge-sharing on marine litter management.

(e) **Formulation of Resource Circulation Strategy for Plastics**

This strategy was formulated in May 2019, with the purposes of comprehensively promoting plastic resource circulation. The purpose of this strategy is to realise a sustainable society and pass on the environment to future generations, while addressing a wide range of issues such as resource/waste constraints, marine litter countermeasures, global warming countermeasures and building a domestic resource circulating system that responds to bans on waste import by Asian countries. It also aims to reduce dependence on non-renewable resources, replace them with renewable resources, and collect and reuse the resources used as taking into account economic and technological possibilities. The main focus includes thorough reduction; effective, efficient and sustainable recycling; promotion of recycled materials and bioplastics use; marine plastic countermeasures; international deployment; and infrastructure development.

Related URL: <https://www.env.go.jp/press/files/jp/111747.pdf>

(f) **Clean Ocean Material Alliance**

It has become necessary for society to promote worldwide efforts to overcome the marine plastic litter issue, a newly emerging global challenge. To reduce such litter, conducting appropriate control of waste is urgently needed, including through thorough efforts to prevent littering, further enhancement of 3R (Reduce, Reuse and Recycle) initiatives involving plastic products, and further development and adoption of plastics with excellent biodegradability and

materials alternative to plastics, e.g. paper.

The Japan Clean Ocean Material Alliance (provisional name) was established consisting of a wide range of business operators that make up the supply chain and working actively in order to accelerate innovation through public-private partnerships by promoting new efforts on the 3Rs, and alternative materials to make plastic products more sustainable.

Related URL: <https://cloma.net/english/>

■ Republic of Korea

(a) Campaign for Zero Ocean Plastic

The Korean Government announced 2019 to be 'The first year of the new era of Zero Marine Plastic' and it has pushed forward multiple public awareness campaigns as well as cross-sectoral clean-up activities such as the '2019 International Coastal Clean-up ceremony' with the participation of more than 1,000 people from corporations, NGOs and schools.

(b) Comprehensive Plan on Marine Litter Reduction (2019)

The Republic of Korea has established a 'Comprehensive Plan on Marine Litter Reduction' in May 2019. The main purpose of the plan is to reduce marine plastic litter by half and it aims to achieve its goal by 2030 through the introduction of the life-cycle management system of marine plastic litter, enhanced marine plastic litter management infrastructure and promoting wide public participation and so on.

The plan will be implemented through the close cooperation between the Ministry of Ocean and Fisheries of Korea (MOF), the Ministry of Environment of Korea (MOE), the Ministry of Food and Drug Safety of Korea. The plan is in line with 'G20 Action Plan on Marine Litter' which was adopted at G20 Hamburg Summit in 2017 and it will further improve Korea's commitment on reducing marine plastic.

(c) Establishment of Collection system for Broken Styrofoam Buoys

Abandoned Styrofoam buoys in the oceans are thought to be a major sea-based source of marine plastic litter, as they easily break into small pieces over time. The Ministry of Oceans and Fisheries of Korea established Styrofoam Buoys Collection System which provides buoy collection sites to local communities where fishermen can dispose of the Styrofoam buoys they no longer use

■ Republic of South Africa

(a) Summarise PETCO model as best practice

■ Singapore

(a) Comprehensive waste management system:

Having a comprehensive and integrated solid waste management and collection system helps to minimise waste at source, reuse and recycle waste, and regulate waste collection and disposal so that waste will not be washed into the marine environment.

(b) Prevention of littering, illegal dumping, release of waste into the ocean:

Singapore has a routine cleaning regime put in place for all inland waterways to trap and remove land-based litter and flotsam. Damming up of tidal rivers to form reservoirs as source of water supply has also minimised litter from flowing out into the sea. Singapore also has a strict anti-littering enforcement regime aimed at deterring littering.

(c) Cooperation with stakeholders:

Singapore works with consumers, food and beverage establishments, supermarkets, and hotels to reduce the use of disposables and encourages residents to recycle through the National Recycling Programme.

(d) The Sustainable Singapore Blueprint and the Zero Waste Masterplan, which will guide Singapore's efforts towards becoming a Zero Waste Nation.

(e) Related URL: <https://towardszerowaste.sg/zero-waste-masterplan/>

■ Germany

(a) Recommendations for plastic packaging waste (ASEAN)

(b) Studies on 1) the prevention of plastic packaging waste and single-use plastic and 2) guidelines for the application of secondary plastics and 3) toolbox on extended producer responsibility systems for packaging waste with special focus on Ghana and Indonesia (under development).

(c) Study "Marine Litter Prevention" including the use of a tool for estimating plastic waste leakage in Indonesia and Algeria.

Related URL: https://www.giz.de/en/downloads/giz2018_marine-litter-prevention_web.pdf

■ Russia

(a) "Clean Beach" campaign and "Eco-marathons" have taken place for almost seven years. Officials, NGOs, civil society, volunteers and other stakeholders gather to organise clean-ups of riverbanks and sea-shores. Year after year more and more people are taking part in the campaigns. These campaigns are fully supported by the federal, regional and local authorities.

(b) In 2019, one of the most relevant "Eco-marathons" took place on the margins of Vth Eastern Economic Forum (Vladivostok) headed by the Minister of Natural Resources and Environment of the Russian Federation.

■ Spain

- (a) Monitoring (macrolitter and microplastics) on beaches, floating litter, seabed litter, and also biota (target species differ in each marine region: in Spanish water: marine turtles + other options such as fish or mussels in study). Also citizen science protocol may be of interest.
- (b) Implementation of a non-special fee cost recovery system for waste collection from vessels in national ports (implemented since 2011).
- (c) Fishing for litter initiatives. These are expected to be harmonised into a national umbrella, but there are some current relevant individual initiatives (some of them private) with good coverage in terms of number of ports and experience, that could be shared.

■ The Netherlands

(a) Green Deals // Plastic Pact

In the Dutch measures on (micro) plastics a lot of emphasis is placed on collaboration with the sector. For example in the Green Deals that were set up for the Framework Directive Marine Strategy (see above).

The same is true for the Plastic Pact that was signed in February 2019. More than 75 parties (supermarkets, plastic packaging industry, recyclers, etc.) committed themselves to four concrete targets by 2025

- i. All single-use plastic products and packaging that the Plastics-Using Companies place on the Dutch market are reusable where possible and appropriate, and are in any case 100% recyclable
- ii. Each of the Plastics-Using Companies avoids unnecessary use of plastic materials through reduced use, more reuse and/or use of alternative, more sustainable materials, resulting in a 20% reduction in the amount of plastics (in kg) relative to the total amount of single-use products and packaging placed on the market, compared to the reference year (2017)
- iii. Plastics-Producing Companies will have created sufficient sorting and recycling capacity in the Netherlands so that at least 70% of all single-use plastic products and packaging (measured by weight) that reach the disposal stage in the Netherlands are recycled to a high standard
- iv. All single-use plastic products and packaging marketed by Plastic-Using Companies will contain the highest possible percentage of recycled plastics (in kg¹²), with each company achieving an average of at least 35%. Moreover, the plastics used will as much as possible be sustainably produced biobased plastics, in order to reduce the use of virgin fossil-based plastics

Related URL:

<https://www.circulairondernemen.nl/uploads/0e657a0084a4f18d2ff61335794ea3c7.pdf>

(b) Prohibitions of plastics that often end up as litter

In 2016 the Dutch government prohibited handing out free plastic bags in shops. Shops were still allowed to give their customers a plastic bag, but they had to pay for it. This made consumers very aware of the amount of plastic bags they consumed. This policy will be evaluated this year. In the new SUP directive single-use plastic cutlery (forks, knives, spoons and chopsticks), single-use plastic plates, plastic straws, cotton bud sticks made of plastic, plastic balloon sticks and oxo-plastics and food containers and expanded polystyrene cups will be prohibited. Currently the EU directive is translated into national policy. This is expected to be very effective.

■ UK

UK and OSPAR best practices:

- (a) Establishing the feasibility of setting appropriate reduction targets and/or threshold values for litter on beaches, on the sea floor, sea surface, and micro plastics, taking into account regional or sub-regional specificities
- (b) Development of an indicator for micro-litter in sediment
- (c) Establishment, if practicable, of monitoring on whether the amount of litter and micro-litter ingested by marine animals adversely affects the health of the species concerned
- (d) Development of appropriate measures to reduce litter types harmful to the marine environment

The UK has committed domestically and internationally to protect the ocean, seas and marine resources from marine litter. It is agreed and understood that this can be achieved through these actions:

- (a) Conservation and sustainable use of resources for sustainable development
- (b) Support for and increased capacity of developing nations
- (c) Evidence-based policymaking
- (d) Prevention and reduction of marine pollution – land and sea-based, including ALDFG
- (e) Good global governance and international collaboration

■ US

(a) Extensive best practices developed through the above frameworks. A selection is highlighted below:

- i. US EPA Trash Free Waters Best Practices Compendium: <https://www.epa.gov/trash-free-waters/aquatic-trash-prevention-national-great-practices-compendium>
- ii. NOAA Reports and Technical Memos on Marine Debris: <https://marinedebris.noaa.gov/reports-and-technical-memos#pub-term-39>
- iii. Microplastics Expert Workshop report: <https://www.epa.gov/sites/production/files/2018->

■ European Union

- (a) Comprehensive approach to plastic production, use and disposal in the EU's Plastic Strategy as part of the EU's Circular Economy Action Plan
- (b) Binding legislation for monitoring and assessing marine litter, for defining acceptable thresholds, setting targets and for taking measures to reduce quantities of litter and harm from litter
- (c) Integrated approach covering all sources of plastic litter and microplastics
- (d) Legislation on the reduction of the impact of certain plastic products on the environment, targeting the top 10 single-use plastic products most often found on Europe's beaches and seas as well as fishing gear containing plastics
- (e) Legislation on port reception facilities to reduce the discharges from ship generated waste, including from fishing vessels
- (f) Establishment of baselines for marine litter quantities in the coastal and marine environment
- (g) Work towards the establishment of regulatory thresholds to prevent harm from litter in the marine coastal environment, including socio-economic aspects
- (h) International and regional approach, coordination with neighbouring countries and third countries

5. Further Information

■ Brazil

- Marine Litter Combat Agenda
<http://www.mma.gov.br/agenda-ambiental-urbana/lixo-no-mar.html>
- Marine litter board
<https://app.powerbi.com/view?r=eyJrljoiYzBhY2MyYTAtMGVIMS00ZTM0LTk4OTAzZDgzMzk3MzhZjZlZiwiZCI6IjJmY2ZmE5LTNmOTMtNGJiMS05ODMwLTZyZNDY3NTJmMDNINCIsImMiOjF9>

■ Canada

- Canada's Zero Plastic Waste website: www.canada.ca/zero-plastic-waste
- Ocean Plastics Charter:
<https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/ocean-plastics-charter.html>
- Canada-wide Strategy on Zero Plastic Waste and Action Plan:
<https://www.ccme.ca/en/resources/waste/waste/plastic-waste.html>
- Prime Minister's announcement on new federal actions:
<https://pm.gc.ca/en/news/news-releases/2019/06/10/canada-ban-harmful-single-use-plastics-and-hold-companies-responsible>
- Reducing plastic waste in federal operations:
<https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/government-canada-actions-plastic-waste-federal-operations.html>
- Microbeads in Toiletries Regulations:
<https://www.canada.ca/en/health-canada/services/chemical-substances/other-chemical-substances-interest/microbeads.html>
- Canada's Plastics Science Agenda:
<https://www.canada.ca/en/environment-climate-change/services/science-technology/canada-science-plastic-agenda.html>
- Economic study of the Canadian plastic industry, markets and waste: summary report,
<http://publications.gc.ca/site/eng/9.871296/publication.html>

■ Finland

- EU policies on oceans, seas and coasts: https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm
- HELCOM Marine Litter Action Plan: <http://www.helcom.fi/action-areas/marine-litter-and-noise/marine-litter/marine-litter-action-plan>
- Finland's Plastics Roadmap <https://muovitiekartta.fi/in-brief/>
- Finland's Marine Strategy and related documents: <https://www.ymparisto.fi/en->

US/Sea/Protection_and_management_of_the_marine_environment/Development_of_Finlands_marine_strategy

■ Germany

- https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/5_punkte_plan_plastik_181123_bf.pdf
- <https://www.ospar.org/documents?v=34422>
- <http://www.helcom.fi/Lists/Publications/Marine%20Litter%20Action%20Plan%20for%20the%20Baltic%20Sea.pdf#search=marine%20litter%20action%20Plan>
- <http://www.meeresschutz.info/berichtart13.html>
- <http://www.muell-im-meer.de/>
- PREVENT Waste Alliance
<https://www.prevent-waste.net/en/>
- Clean Ocean Initiative
<https://www.eib.org/en/publications/the-clean-ocean-initiative.htm>
- Global advisory project “Concepts for sustainable waste management and circular economy”
<https://www.giz.de/en/worldwide/15109.html>
- Study “Marine Litter Prevention” (2018)
https://www.giz.de/en/downloads/giz2018_marine-litter-prevention_web.pdf
- Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins
<https://www.siwi.org/publications/source-to-sea-framework-for-marine-litter-prevention-preventing-plastic-leakage-from-river-basins/>
- Source-to-Sea Framework for Marine Litter Prevention (Policy Brief)
<https://www.siwi.org/publications/source-to-sea-framework-for-marine-litter-prevention/>

■ Japan

- National Action Plan for Marine Plastic Litter:
https://www.cas.go.jp/jp/seisaku/kaiyo_plastic/dai1/plan.pdf
https://www.cas.go.jp/jp/seisaku/kaiyo_plastic/dai1/plan.pdf
- Resource Circulation Strategy for Plastics: <https://www.env.go.jp/press/files/jp/111747.pdf>
- Subsidy for the local government:
http://www.env.go.jp/guide/budget/2019/19juten-sesakushu/032_3012.pdf (Japanese only)
- Clean Ocean Material Alliance: <https://cloma.net/english/>
- Plastics Smart campaign: <http://plastics-smart.env.go.jp/en/>

■ KSA

- National Environment Strategy,
<https://www.mewa.gov.sa/en/Ministry/initiatives/SectorStratigy/Documents/6.%20BAH-MEWA-KSA%20NES-CEDA%20Executive%20Summary%20v3%2020180221%20ENG.pdf>

■ Russia

- <http://чистыеберега.рф/> - “Clean Beach” campaign
- <http://www.mnr.gov.ru/> - Ministry of Natural Resources and Environment of the Russian Federation

■ Singapore

- Singapore’s Zero Waste Masterplan: <https://towardszerowaste.sg/zero-waste-masterplan/>

■ Spain

- <https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/basuras-marinas/default.aspx>

■ The Netherlands

- <https://www.circulairondernemen.nl/uploads/0e657a0084a4f18d2ff61335794ea3c7.pdf> (Plastic Pact - english)

■ UK

- Foresight Future of the Sea Report:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/706956/foresight-future-of-the-sea-report.pdf
- 25 Year Environment Plan:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf
- Resources and Waste Strategy for England:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

■ USA

- 2016-2017 Interagency Marine Debris Coordinating Committee Biennial Report:
https://marinedebris.noaa.gov/sites/default/files/imdcreport__2016_2017.pdf
- National Parks Service Ocean Plastics: <https://www.nps.gov/subjects/oceans/ocean-plastics.htm>
- U.S. Agency for International Development Ocean Plastics:
<https://urban-links.org/ocean-plastics/>

- U.S. Agency for International Development Municipal Waste Recycling Program:
<http://urban-links.org/mwrp/>
- U.S. EPA SMM Facts and Figures Report:
<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management-0>

■ European Union

- A European Strategy for Plastics in a Circular Economy:
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:28:FIN>
- Directive on the reduction of the impact of certain plastic products on the environment (SUP Directive):
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904&from=EN>
- International Ocean Governance: an agenda for the future of our oceans
https://ec.europa.eu/maritimeaffairs/policy/ocean-governance_en
- Directive on port reception facilities:
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1570190453030&uri=CELEX:32019L0883>
- Marine Strategy Framework Directive:
https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm
- Good Environmental Status – Marine Litter:
https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index_en.htm
- Revision of the Waste Legislation:
https://ec.europa.eu/environment/waste/target_review.htm

“G20 Report on Actions against Marine Plastic Litter: First Information Sharing based on the G20 Implementation Framework” is downloadable on the G20 MPL portal site (<https://g20mpl.org/>).