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**United Nations
Environment Assembly of the
United Nations Environment
Programme**

**Ad hoc open-ended expert group
on marine litter and microplastics
fourth meeting**

Item 4 (b) of the draft provisional agenda*

**Identification of technical and financial resources or mechanisms
(subparagraph 7b)**

**Draft Provisional summary of the Inventory of technical and
financial resources and mechanisms for supporting countries in
addressing marine plastic litter and microplastics**

Note by the Secretariat

1. The ad hoc open-ended expert group (AHEG) was established through the United Nations Environment Assembly resolution 3/7 paragraph 10. Its mandate was extended through resolution 4/6 paragraph 7, which also requested the group to, amongst other things, through subparagraph 7(b):

“Identify technical and financial resources or mechanisms for supporting countries in addressing marine plastic litter and microplastics”

2. In addition to this, given the topical relevance of “environmentally sound technological innovations, options, and measures for reducing the risk of discharges of litter into the marine environment” (resolution 4/6 subparagraph 2(d)), these will be included as one among other technical resources to be identified in this exercise.

3. The expert group requested the Secretariat, in the outcome document from the third ad hoc open-ended on marine litter and microplastics*, to produce one report covering both aspects that will: consider existing bodies of work such as the Basel Convention, the Partnership on Plastic Waste, the Global Partnership on Marine Litter, Asia Pacific Economic Cooperation, and the Commonwealth Clean Ocean Alliance; collect information from existing sources, look at funding resources and mechanisms such as bilateral donors, and development assistance through multilateral bodies including the World Bank, the International Monetary Fund, regional and sub-regional development banks, the United Nations system (including Multilateral Environmental Agreements), the Global Environment Facility and other relevant sources, including national sources, as well as information from the private sector, including for-profit institutions, non-profit, foundations, capital markets etc; promote a better understanding of the current state of play of technical and financial resources and mechanisms, including a lifecycle approach, as well as of the financing flows between key donors/financial institutions and recipients at regional and

* UNEP/AHEG/2020/4/1

* Available at https://papersmart.unon.org/resolution/uploads/aheg_3_outcome_document_0.pdf

national level, including with regard to challenges and barriers; examine new opportunities through innovative financing, including public-private sector partnerships, blended finance, and other approaches, with the aim to identify ways to promote cooperation; gather information on existing technical resources, environmentally sound substitutes and mechanisms, addressing aspects of the whole life cycle of marine litter and microplastics, taking into consideration information from both the public and private sector as well as civil society; take into consideration other work streams in particular the stock taking exercise.

4. This draft document aims to provide an outline of the identification of technical and financial resources or mechanisms for supporting countries in addressing marine plastic litter and microplastics, as well as provide initial results of the work undertaken and is presented to AHEG-4 for discussion and consideration. The ultimate objective of the exercise is to identify technical and financial resources or mechanism relevant for the prevention and reduction of both land-based and sea-based sources of marine litter, with a main focus on a) land-based (waste management) and near-shore (litter capturing) technologies and a priority on low-and medium-cost options, across the whole life cycle of plastics; b) funding and financial resources for addressing marine plastic litter, as well as engagement of non-traditional stakeholders. The exercise will be aligned with, and feed into, the stocktaking exercise mandated under resolution 4/6 subparagraph 7(a) and described in UNEP/AHEG/2020/4/2. This report may be revised based on feedback received from consultations prior to the AHEG-4 in order to ensure it adequately responds to the request set out in subparagraph 7(b).

I. Introduction

A. The purpose of this document

5. Both technical and financial resources and mechanisms are fundamental requirements and serve as enabling conditions to combat marine litter. This document aims to provide a summary of the identification of technical and financial resources and mechanisms for supporting countries in addressing marine plastic litter and microplastics, taking into account feedback received by the AHEG-3 to build on previous work under 3/7, and as outlined in the report and its outcome document. The document does not claim to be exhaustive and is rather to be seen as a ‘living document’, which is constantly evolving and will be added to. The topics wastewater treatment as well as the impact of marine litter are not within the scope of the reviewed resources.

B. The importance of technical resources and mechanisms for tackling marine plastic litter and microplastics

6. Technical resources and mechanisms are sources of information, knowledge, expertise or support that can be drawn upon by a member state or organization to define an effective policy to prevent or remediate marine litter and microplastics related issues. Examples of technical resources and mechanisms are: technical guidelines, information on best practices, technical reports, tool kits, training materials, calculation models, etc. With mechanisms we refer to platforms and data bases that provide access to a bigger collection of various technical resources.

A systematic synthesis of technical resources and mechanisms will:

- provide an overview and facilitate the access to data and information available from various organizations that is usually scattered
- provide a source of information to help stakeholders interested in combating marine litter to prioritize actions and to learn from success stories in a similar context by copying and implementing successful strategies
- help UNEP stakeholders and organizations, instead of competing or working in parallel and doubling efforts, to collaborate in the future for increased efficiency.

C. The importance of addressing financial resources and mechanisms for tackling marine plastic litter and microplastics

7. Financial resources and mechanisms are defined as all resources or mechanisms that can be used by a member state or an organization to finance activities to tackle marine plastic litter and microplastics. These include grants, loans, investments, blended finance, crowdfunding and donations, among others.

They might be provided by multilateral or bilateral donors, governments, enterprises, non-profit private organizations or individuals.

8. Tackling the issue of marine plastic litter and microplastics requires the implementation of an array of policies, activities and technologies. Many of these come with high financial costs and member states and organizations therefore face important financial barriers in implementing necessary measures. These challenges were emphasized during the first and second meetings of the Ad Hoc Open-Ended Expert Group on Marine Litter and Microplastics. The costliness of interventions was reinforced by responses to the marine litter and microplastics stocktaking survey described in UNEP/AHEG/2020/4/2, in which the vast majority of respondents considered actions on this subject to be moderately or very expensive (figure 1).



Figure 1. Perceptions of costliness of initiatives to address plastic pollution (Source: Data from stocktaking survey)

9. In order to support member states in addressing these financial barriers and deciding on future actions related to financing, this document summarizes the current financial resources and mechanisms available and provides recommendations for possible actions.

D. Existing challenges and barriers to addressing marine plastic litter and microplastics

10. During the first meeting of the ad hoc open-ended expert group on marine litter and microplastics, held in Nairobi from 29 to 31 May 2018, participants noted numerous barriers to tackling marine plastic litter and microplastics. Overall, the list of barriers, especially in developing countries, is long and includes inadequate financing, legal and regulatory deficits, low administrative capacities, lack of public awareness of good sanitary practices, and limited enforcement.

11. The barriers described in the first meeting included many that are relevant for this discussion of technical and financial resources and this report builds on and addresses those barriers.

12. Financial barriers are related to situations in which high costs made a certain activity difficult to afford or to implement; technological barriers are related to the production, manufacturing and design of materials and products, the distribution and consumption systems and all aspects of waste collection, management and recovery; and information barriers pertained to data, research, transparency, and education and awareness.[†]

[†] UNEP (2018). Report of the first meeting of the ad hoc open-ended expert group on marine litter and microplastics, available at: <https://papersmart.unon.org/resolution/uploads/k1801471.pdf>.

13. Barriers listed in the paper “Discussion paper on barriers to combating marine litter and microplastics, including challenges related to resources in developing countries”[‡] related to technical resources and the closely linked data and research included the following:

Technological barriers

- Industry design and consumption systems are not prioritised along the “3R waste hierarchy” of reduce, reuse, recycle.
- Infrastructure for waste management and/or recycling.
- There is a disconnect between innovation in production and after-use systems and infrastructure.
- Rural areas are not well serviced, which also reduces the likelihood of viable recycling schemes.
- Coordinated development and adoption of labelling standards is lacking, which hinders product separation and the understanding of the content of products for reuse and recyclability purposes.
- New alternative materials may need to be collected in a separate waste stream.
- Many government authorities, corporations and the public have little or no knowledge of the matters involved or of the best available technologies and best environmental practices required to address the issue of marine litter and microplastics.
- A fragmented approach at the regional level to waste management, including wastewater treatment. This fragmented approach extends to the national level in many countries.
- Poor or inadequate design of products to meet air- and water-quality standards in order to reduce emission of microplastics from wear and tear during product use, as well as evaluating compliance with such standards when conducting lifecycle and environmental impact assessments.
- Insufficient involvement of industry in solutions.
- Insufficient research into new business models enables plastic to remain in the system.
- Insufficient understanding of how to increase the recycled content of products.

Data and research barriers [§]

- Lack of data at various levels on the sources and extent of plastics and microplastics in the marine environment, in organisms and on associated health and ecosystem risks.
- Lack of data on plastic material flow and waste: a better understanding of the routes of plastic flows into the ocean is needed (categorized by, for example, geography, application, polymer type and size).
- Many countries do not have any data or monitoring programmes to set reduction targets or priority interventions.
- Lack of harmonized implementation of monitoring methodologies to facilitate the development of quantitative and operational reduction targets.
- Insufficient research and development of alternative materials, backed with life cycle analysis, to assess environmental consequences, and that are scalable and economically viable.
- Limited formal education on marine litter and microplastics.
- The need to identify and address cultural barriers to behavioural change, to facilitate the adoption of reusable delivery systems and to replace single-use plastics.
- Lack of global standards for national monitoring and reporting on the consumption, use, final treatment and trade of plastic that will eventually become waste.
- The need for greater reporting at the national level on consumption, production and end-of-life treatment of plastics.

[‡] UNEP (2018). *Discussion paper on barriers to combating marine litter and microplastics, including challenges related to resources in developing countries*” (UNEP/AHEG/2018/1/2), available at:

https://papersmart.unon.org/resolution/uploads/unep_ahег_2018_1_2_barriers_edited_0.pdf.

[§] Only those relevant to this report are listed

- Lack of transparent and inclusive decision-making; this prevents various societal actors and interest groups from engaging in discussions about responsible actors and the risks that society is willing to take.
- Trade in plastic waste: Require greater transparency: international codes do not provide adequate information.
- Lack of global reporting standards
- Lack of research and monitoring systems to determine if traded waste is mismanaged.

Barriers related to financial resources included:

- Lack of internalization of costs for recovery and recycling of plastics.
- Fossil fuel subsidies keep plastic cheap as the cost of raw materials is sometimes lower than using recycled plastic.
- No “the polluter pays” principle in most countries relating to marine litter and none in “common” areas such as the high seas, which leaves the cost of dealing with plastic waste to Governments.
- Global funding schemes not appropriate at the smaller council level.
- Cross-border investment challenges.
- Lack of funds and implementation of market-based instruments and tax incentives to stimulate investment for local infrastructure for collection, treatment or disposal and environmentally and financially sustainable end-of-life treatment of plastic waste, especially in developing countries.
- Separate fees for disposal of rubbish and fishing gear at port reception facilities, which encourages at-sea disposal/dumping.
- Lack of implementation of market-based instruments and tax incentives to stimulate investment in facilities for environmentally and financially sustainable end-of-life treatment of plastic waste.
- Limited understanding of the costs of marine litter at the national, regional and international levels and a failure to internalize or make explicit the costs to human health and the environment.
- Costs to human health not factored in, as they are as yet unknown.
- A failure to establish sustainable and profitable end-markets for all end-of-life plastics, both domestic and international.
- Lack of end-markets for plastic waste, both domestic and international.

II. Methodology

14. This report builds on previous work of the Ad Hoc Open-Ended Expert Group on Marine Litter and Microplastics and assesses the technical and financial resources and mechanisms available for countries to address the issue of marine plastic pollution and microplastics, based on publicly available information as well as interviews with experts. The following methodology was used:

- Inventories of technical and financial resources and mechanisms for supporting countries in addressing marine plastic litter and microplastics based on desk research
- Inputs from the stocktaking survey
- Interviews and / or email communications with experts and stakeholders on financial and technical resources and mechanisms used

III. Technical resources and mechanisms

A. The state of existing technical resources and mechanisms

15. This section outlines the technical resources and mechanisms currently available to address marine plastic litter and microplastics as well as the challenges linked to them. In total 128 technical resources and mechanisms were included in the review. For the interested user it is crucial to understand what type of technical resources and mechanisms are available, on which topic and from which organization. The targeted scale and the geographical scope are also of importance.

16. For the different types of resources, a distinction was made between ‘application cases / pilot project’, ‘state of knowledge report including policy recommendations’, ‘calculation model / tool’,

‘operational / technical guidelines’, ‘toolkit / guidance for decision makers’, ‘monitoring methodology’, ‘training’, ‘best practice’, ‘manual’, ‘inventory’. Regarding the topics, a value chain perspective was taken, looking at the plastics lifecycle stages ‘prevention of litter and waste’, ‘design and production’, ‘use and consumption’, ‘waste management’ and ‘marine litter monitoring and capturing’. Each of these stages can contribute to an increase or a reduction of marine plastics litter and microplastics, with different actors being key to each stage and different barriers to be faced.

17. Some general patterns on the coverage of the reviewed technical resources and mechanisms can be described.: While all the reviewed resources cover macroplastics, only 50 % include also microplastics. This can be justified by the fact that macroplastics represent the main sources for microplastics due to degradation over time. With respect to the scale, about one third of the reviewed technical resources and mechanisms address the national level, 19 % the regional level, 14 % the local / city level, and respectively 8 % the company / plant level and the global / level (cf. Figure 2). 22 % of the resources do not specify. In terms of geographical focus, it can be stated that all parts of the world are well covered.

18. With respect to the stage in source-to-sea movement, litter in and around rivers and lakes are often not extensively discussed, while inland sources, the sea-land interface and the sea are well covered. In the course of this year UNEP will launch guidelines on monitoring and assessment of riverine and freshwater litter.

Proportion of scales addressed by technical resources & mechanisms reviewed

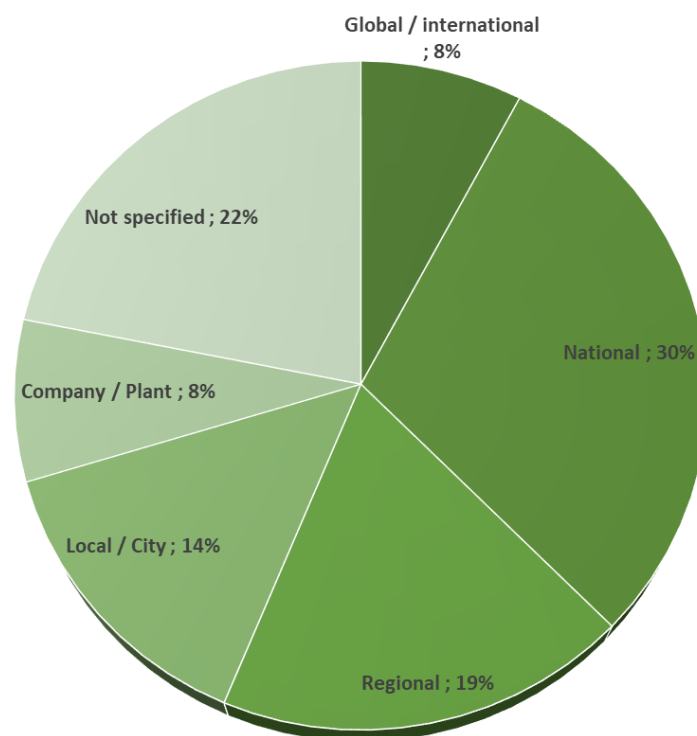


Figure 2: Proportion of scales addressed by technical resources and mechanisms reviewed

19. With respect to the type of technical resources and mechanisms, as shown in Figure 3, the major share (27 %) represents state-of knowledge reports including policy recommendations, 18 % of the resources contain application cases and 8 % best practice. 4 % are labelled as training materials. 12 % of the resources describe monitoring methodologies, mainly for marine litter monitoring, and 4 % calculation tools to quantify marine litter. 10 % provide guidance for decision makers (toolkits), 9 % more specific technical or operational guidelines, and 5 % actual manuals on a range of different topics.

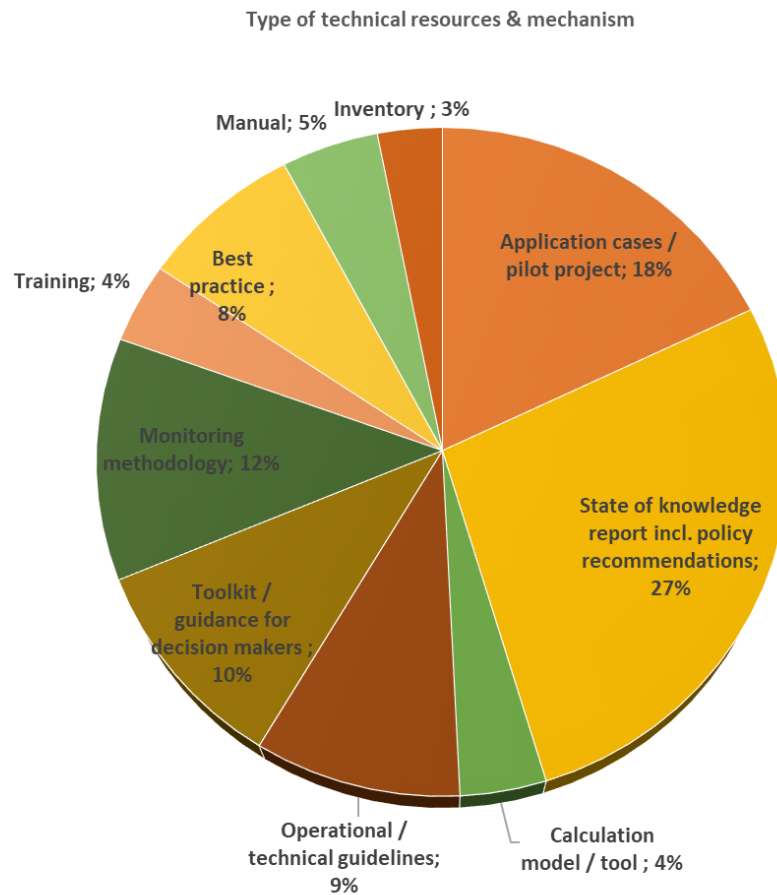


Figure 3: Relative share of types of technical resources and mechanisms.

20. While looking at the plastics lifecycle stages, almost 60 % of all reviewed technical resources and mechanisms are covering the topics 'waste management' (29 %) and 'marine litter' (29%) (cf. Figure 3). 'Design and production' is with 21 % the third most widely topic covered, while 'use and consumption' is not widely covered (5 %). 'Prevention of litter and waste reduction' has a relative importance of 17 %.

Proportion of plastic lifecycle stages covered by technical resources & mechanisms reviewed

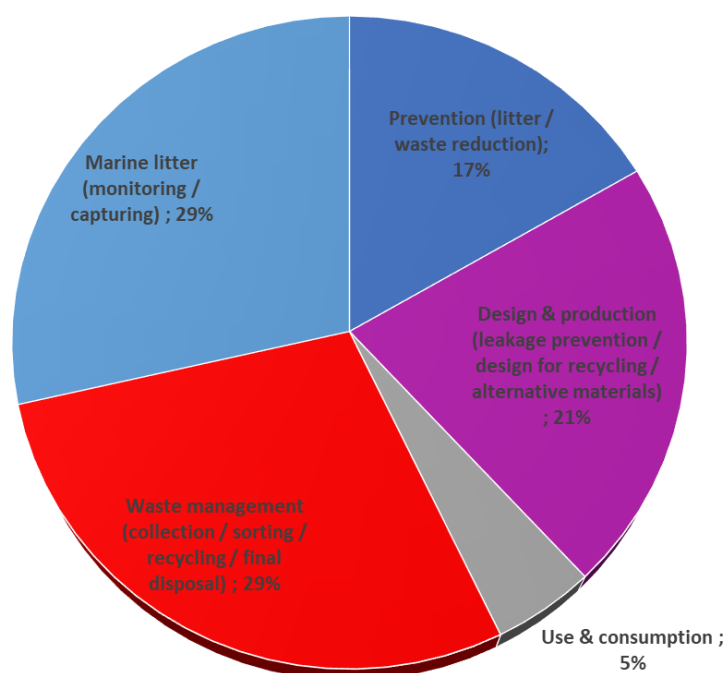


Figure 4: Plastic lifecycle stages covered by all technical resources and mechanisms reviewed. Note that one document can cover more than one stage.

21. **Waste management** comprises resources on collection, sorting, recycling and final disposal including landfills and Waste-to-energy, provided chiefly by the International Solid Waste Association's (ISWA), the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the United Nations Environment Programme (UNEP), the Secretariat of the Basel, Rotterdam and Stockholm Conventions, the Asia Pacific Economic Cooperation (APEC) as well as the World Bank. Waste management is covered by all types of technical resources and mechanisms, except for monitoring methodologies, as they mostly relate to marine litter monitoring. The Secretariat of the Basel, Rotterdam and Stockholm Conventions provides the most comprehensive platform with operational and technical guidelines, fact sheets, toolkits and guidance for policy and decision makers. Moreover, concrete technical assistance activities, such as training workshops, especially for developing countries are offered. Also reports on implemented pilot project and best practice on plastic waste management can be found.

22. While collection, recycling, and landfills are well-covered topics, there is a major gap on innovative solutions for environmentally sound plastic disposal, especially in developing countries. Also, solutions for recovered marine plastics are not addressed.

23. Technical resources and mechanisms covering the **monitoring and capturing of marine litter** account for an equal proportion of all reviewed sources as waste management. This topic is covered by

entities such as the Global Partnership of Marine Litter (GPML), the EU Commission's Multi Service Force Deployment (MSFD) Technical Group on Marine Litter, the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), the World Wide Fund for Nature (WWF) or International Union for the Conservation of Nature (IUCN).

24. The problem with monitoring methodologies is that they are widely not harmonized, and therefore it is hard to compare the results. For instance, the methodology for SDG 11.6.1, developed by UN Habitat, takes mainly waste management related sources into account to quantify marine litter, while the Plastic Drawdown methodology, developed by Common Seas, also considers sea-based sources and wastewater treatment plants. The Ministry of the Environment of Japan has started a harmonization process for Marine Microplastics Monitoring by developing guidelines for sampling.

25. Often resources and mechanisms, provided for instance by UNEP and APEC, with a main focus on marine litter also promote waste management as an important solution in the short term. Most of the various national, regional and local marine litter action plans include waste management as a key task often in combination with 'prevention' and 'litter monitoring and capturing'.

26. Another area where marine litter and waste management are closely interlinked, are the tools to quantify and predict marine litter, as developed by the Common Seas, or the International Union for Conservation of Nature (IUCN) and UNEP, or UN Habitat, or the ISWA taskforce on marine litter, the university of Leeds as well as the German development agency Deutsche Gesellschaft für international Zusammenarbeit (GIZ) to mention some of them. Interestingly most of the tools were developed independently from each other without coordination, some being more data intensive than others and applicable at different scales from city to national level, half of them including also microplastics.

27. Other technical resources covering the topic litter monitoring and capturing comprise methodologies and / or operational and technical guidelines for the monitoring and assessment, state-of-knowledge reports including recommendations for decision makers, toolkits with specific guidance for political decision makers. While for waste management a number of detailed case studies including lessons learnt are available, as for instance provided by ISWA, UNIDO or UNEP, for marine litter monitoring and capturing, these kind of technical resources are rather scarce. The resources addressing solely marine litter often provide high-level guidance, rather than applications to a specific local context and the implementation part is missing. Not many technical resources are addressing the link between marine litter and cities, and specific case studies are not available.

28. With regard to the '**prevention of marine litter and waste reduction**' a number of state-of-knowledge reports including recommendations for decision makers and toolkits with specific guidance is available, provided, for instance, by the Secretariat of the Basel, Rotterdam and Stockholm Conventions, by the Basel Convention Plastic Waste Partnership, or by the Global Partnership on Marine Litter. The U.S. National Oceanic and Atmospheric Administration's (NOAA) Marine Debris Program operates a platform with plenty of resources on marine debris prevention activities, monitoring and assessment, action planning and removals. This topic is obviously very broad and includes measures concerning all stages, that is design and production, use and consumption as well as waste management.

29. For '**design and production**' a number of reports is available on eco-design and alternative materials, such as biodegradable plastics, provided, for instance, by UNEP, GPML, the Japan Clean Ocean Material Alliance (CLOMA), the ministry of the environment of Japan, UNIDO, WWF, mainly in combination with the ban of single use plastics and litter prevention. But when it comes to losses and leakages from production sites the number of existing technical resources is limited. An interesting initiative is the Operation Clean Sweep® (OCS) by Plastics Europe, an international programme designed to prevent the loss of plastic granules (pellets, flakes and powders) during handling by the various entities in the plastics value chain and their release into the environment.

30. The lifecycle stage '**use and consumption**' as a main theme is not widely covered by the reviewed technical resources and mechanisms. This is probably due to the fact that this topic is mainly addressed in isolated education and awareness raising campaigns (not included in this review), rather than in documents giving specific instructions on how to achieve behavioral change, for instance. 'Use

and consumption' is, however, addressed in some marine litter reports with respect to the single use plastics ban and disposal and source separation patterns of consumers.

B. Challenges and barriers

31. This section discusses important barriers and challenges to combat marine plastics litter and microplastics observed (a) during the inventory exercise and (b) from the stocktaking survey results and compares these to the barriers previously identified in the AHEG meetings. The prioritization of barriers could guide actions in the global context.

- At the AHEG-2 meeting improper waste management was identified as one of the primary overarching barriers to combating marine litter and microplastics. A number of legal, financial, technological and information barriers related to waste management were identified in the discussion paper as barriers that deserved consideration for additional discussion by the Environment Assembly. Although waste management is extensively covered by technical resources of different organizations, the problem of a mismatch between an increase in plastic production and consumption and waste management infrastructure especially in developing countries is rarely addressed. This is particularly true for remote and / or rural areas receiving plastic products without having adequate collection and recycling infrastructure.
- Integrated case studies at a local level addressing both waste management and marine litter by combining upstream and downstream measures, are widely missing. Sharing of expertise and best practices and scaling up of local success stories should be encouraged and facilitated.
- The AHEG had identified as a challenge that industry design and consumption systems are not prioritised along the “3R waste hierarchy” of reduce, reuse, recycle. This is still reflected in the fact that there are no technical resources explicitly addressing new business models or alternative distribution systems, e.g. to reduce overpackaging. However, the use of new alternative materials is explored in a number of reports and also the potential related problem of separate collection and the need for additional infrastructure. Yet, research and development of alternative materials is insufficient when it comes to life cycle analysis and the assessment of environmental consequences, that are scalable and economically viable.
- The previously identified challenge that coordinated development and adoption of labelling standards is lacking, which hinders product separation and the understanding of the content of products for reuse and recyclability purposes is still not sufficiently addressed by the reviewed technical resources. Also, the involvement of industry in solutions is still limited, although industry associations such as Plastics Europe are increasingly showing efforts to contribute to finding solutions to the marine litter issue. Integrated case studies where producers and waste management actors successfully communicate can showcase improved circularity due to an increase of the recycled content of products. Moreover, the understanding of the content of products for reuse and recyclability purposes will result in clean cycles.
- There are many successful national strategies, because national level responses will remain a core element to resolving the problem of marine litter and microplastics. However, regional and global efforts could be improved and better coordinated to complement national efforts in support of global responses. At global level the role of waste-trade and its rules/implementation (equal standards of recycling) is not sufficiently addressed in the technical resources reviewed, and global approaches do not always take into account national circumstances.
- Integrated studies on how waste trade from developed to developing countries impacts the waste management systems and marine litter situation in developing countries are missing, which still corresponds with the previously identified challenges that there is a lack of research and monitoring systems to determine if traded waste is mismanaged. Also, the lack of global standards for national monitoring and reporting on the consumption, use, final treatment and trade of plastic that will

eventually become waste is not addressed by the technical resources reviewed. Also, at the national level there is still a need for greater reporting on consumption, production and end-of-life treatment of plastics

- The AHEG had identified as a challenge that many government authorities, corporations and the public have little or no knowledge of the matters involved or of the best available techniques and best environmental practices required to address the issue of marine litter and microplastics. This is addressed by an increasing number of toolkits including specific guidance for political decision makers. Organizations such as the Secretariat of the Basel, Rotterdam and Stockholm Conventions also provide technical assistance to the Parties in addressing plastic waste. Some of the marine litter quantification tools, such as the one developed by GIZ-EAWAG, are particularly designed to help local decision makers to identify marine litter hotspots. In addition, many of the state-of knowledge reports on marine litter and microplastics contain recommendations for decision makers. This creates an improved overall knowledge base which may eventually lead to a more transparent and inclusive decision-making process.
- The AHEG had identified cultural barriers to behavioural change as a challenge, to facilitate the adoption of reusable delivery systems and to replace single-use plastics. This is not adequately addressed by the technical resources.
- The general lack of data on plastic material flow and waste is increasingly addressed by litter quantification tools to get a better understanding of the routes of plastic flows into the ocean. However, to calibrate these calculation tools, primary data is needed for calibration as well as clarification on if comparisons are possible between the various tools.
- The AHEG had identified as a challenge that many countries do not have any data or monitoring programmes to set reduction targets or priority interventions. National, regional and local marine litter action plans could potentially play a role in supporting such target setting with e.g. the Mediterranean Regional Action Plan having a target for a 20% reduction in beach litter by 2022. Several monitoring methodologies are available and guidance developed on use and approach through e.g. GESAMP. However, there is still a need for a harmonized implementation of monitoring methodologies to facilitate the development of quantitative and operational reduction targets and baselines against which progress can be measures.

C. Future developments for technical resources and mechanisms of efforts to address marine plastic litter and microplastics (to be finalized prior to AHEG-4 as work will continue)

32. This section identifies trends and gaps in the coverage of technical resources and mechanisms and shows where more efforts may be considered in the future (to be finalized prior to AHEG-4 as work will continue).

IV. Financial Resources and mechanisms

33. As concern on the impacts of marine plastic litter and microplastics has grown, so has the development of targeted financial resources and mechanisms to address the issue. This section will outline the financial resources currently available and expand on the barriers to financing as well as opportunities. In order to carry out this analysis, a non-exhaustive inventory of the important sources of finance for combatting marine plastic litter and microplastics was developed. The full inventory will be included as an annex in UNEP/AHEG/2020/4/INF6 and its contents are summarized in figure 5 below. It should be noted that not all information was available for all sources identified and that some register under more than one category (for example, a financing source may target, and be counted under, both recycling and litter cleanup efforts).

Total sources of financing identified	82
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Financing type						
Multilateral	Bilateral		Private for profit		Private not-for-profit	
24	15		7		16	
Region targeted						
More than one region	Africa	Asia and the Pacific	Europe	Latin America and the Caribbean	North America	West Asia
22	1	6	4	1	6	0
Phase in the plastics lifecycle/value chain targeted						
Production / manufacturing phase	Use phase		Waste management phase	Litter capturing	Prevention, minimization, reuse	
15	12		31	17	14	

Figure 5. Summary of inventory of financial resources for efforts to combat marine plastic litter and microplastics (These numbers are provisional as of 17TH MARCH 2020 and will change – final numbers to be filled in closer to finalization of document – feedback on table structure is welcome)

B. Principle sources of funding

34. **Multilateral:** A number of large funds have been created at the multinational level, providing millions and even billions of dollars for actions to tackle marine plastic litter and microplastics. Many of these are broader initiatives which include a focus on marine plastics, while others are focused primarily on preventing marine plastic litter, such as Clean Oceans or ProBLUE. These funds frequently combine investments, guarantees and grants and usually have a global or regional focus, frequently focusing on Asia and the Pacific. Financing is generally made available to national and local government institutions, corporate entities and research institutions. In addition, the World Bank has released Sustainable Development Bonds to raise funds and awareness on marine plastic litter and microplastics, including the USD 28.6 million Sustainable Development Bond on Sustainable Use of Oceans and Coastal Areas – the “Blue Economy”, and the USD 10 million bond to specifically highlight the challenge of plastic waste in oceans.

35. **Bilateral:** Several countries have devoted significant bilateral aid budgets to tackling the issues of marine plastic litter and microplastics, including Australia, Germany, Japan, Norway, Sweden, the UK and the US. Much bilateral aid focuses on countries in Asia and the Pacific, particularly on the five countries (China, Indonesia, the Philippines, Thailand and Viet Nam) in which about half of all the plastic waste that ends up in the ocean is released. Bilateral funding is largely conducted through grant funding, and direct investment in private projects is not possible for some due to internal requirements. Nonetheless, some programs have taken innovative approaches to support private initiatives and leverage private funding.

36. One interesting example is the Incubator Network to Accelerate Ocean Plastic Solutions, set up with funding from the US and Australia and run by Circulate Capital, with SecondMuse and Ocean Conservancy. The initiative aims to accelerate solutions to ocean plastic waste by partnering with existing incubators to build ecosystems of waste management and recycling innovators. Through another partnership with Circulate Capital, the United States Agency for International Development (USAID) has provided loan-portfolio guarantees to mobilize private investment to combat plastic pollution in oceans in the Indo-Pacific region. The UK Department for International Development (DFID) has also tried innovative approaches, including partnerships with businesses such as Unilever and Coca-Cola, and matched giving approaches.

37. Bilateral donors have been key to driving initiatives to combat marine plastic litter and microplastics. Nonetheless, they recognize the need for greater coordination, both at headquarter level and at country level, to avoid duplication of efforts and to maximize impact.

38. **Private not-for profit:** Private not-for profit financing mechanisms include voluntary donations, crowdfunding donations, corporate social responsibility funds and grants. Many large

foundations and charities have taken a keen interest in the topic, as well as private companies, which are increasingly involved through social responsibility initiatives or their foundations. This is particularly true of many fast-moving consumer goods companies, many of which are coming under pressure for their contributions to plastic pollution. Finally, crowdfunding and voluntary donations play a role in providing additional funding.

39. As with bilateral initiatives, there are multiple private initiatives with generally limited coordination. However, some initiatives have been set up in recent years to bring together private actors including businesses, civil society and research organizations to better coordinate funding and activities, such as the Trash Free Seas Alliance launched by the non-governmental organization Ocean Conservancy.

40. **Private for profit:** Private for-profit finance mechanisms include bank loans, venture capital, equity financing and angel networks. They play an increasingly important role in financing efforts to combat marine plastic litter and microplastics. Many initiatives also involve mixed non-profit and for-profit approaches, such as crowdfunding, impact investing and accelerator or incubator programs. Accelerators and incubators, such as the Incubator Network to Accelerate Ocean Plastic Solutions mentioned above, support companies and organizations to improve and grow their operations and sometimes provide funding (often in return for an equity stake). Impact investors focusing explicitly on the issue of marine plastic litter are also emerging, such as Odyssey Impact Investments, which invests in solutions to climate change and single-use plastics. Microfinance institutions – some run as for-profit financial institutions and other as cooperatives or non-profits – are also relevant for funding small businesses that tackle plastic pollution.

41. Overall, funding provided purely by private funds, investors and organizations remains a relatively small proportion of funding compared to public funds. A study conducted by UNEP (2020 in pipeline) estimated that 38% of funding for marine litter prevention comes from private sources. Given the limitations on increasing public spending indefinitely, it is particularly important that international and public spending further leverages private funding in the future.

42. **Public national and municipal funding:** The inventory of financial resources completed for this study focuses on those resources available to member states and organizations from outside of their own national budgets. However, it is important to note that national and municipal public funding is by far the most important source of financing for efforts to tackle marine plastic litter and microplastics. The results of the stocktaking survey showed that actions funded by purely public money represented over 60% of total funding. Furthermore, public funding was frequently combined with private money or donations to fund actions. Research conducted by UNEP (2020 in pipeline), estimates that the money dedicated to this issue from the public sector has grown from USD 360 million in 2015 to USD 800 million in 2018 (Figure 6). Nonetheless, significant additional public funds will be needed to bring about the dramatic shifts still required to tackle this issue.

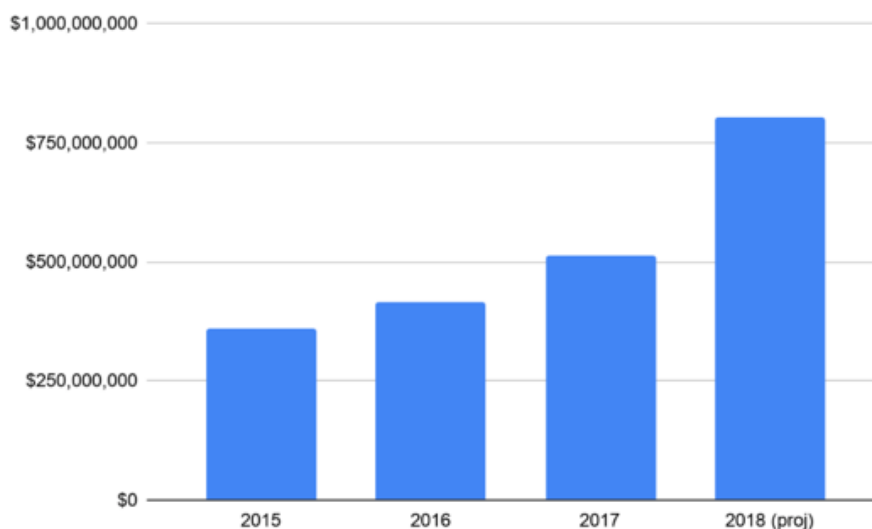


Figure 6. The growth in public funding for initiatives to tackle marine plastic litter and microplastics (Source: UNEP, 2020)

43. Public money is invested heavily in waste management. Funds can be raised through broad-based revenue raising or through specific taxes or levies, such as dedicating the proceeds from plastic bag levies specifically to initiatives designed to tackle marine plastic litter (as discussed in further detail in section F). Increasingly, countries are both dedicating their own funds, and receiving varied international financing, to combat plastic pollution. This can lead to a lack of coordination and alignment with national priorities.

44. **Combined funding:** A total of 36% of actions reported in the stocktaking survey were implemented using a combination of funds of various types. It is particularly interesting to note the importance of combined public and private funding. A total of 31.7% of funds provided came from mixed public and private sources, in some cases combined with additional sourced such as voluntary donations. This is a trend that is likely to increase in the future, due to the increasingly pressing need to use public funds to leverage private investment.

C. The focus of funding

45. **Stage in the plastics value chain targeted:** Given the urgency of dealing with enormous quantities of existing plastic pollution, many donors and others have prioritized waste management, including recycling. This focus is clear in both the inventory conducted for this study and in the analysis of funding shared in the stocktaking exercise (figure 7).

Total funding dedicated to initiatives tackling each element of the plastic lifecycle/supply chain

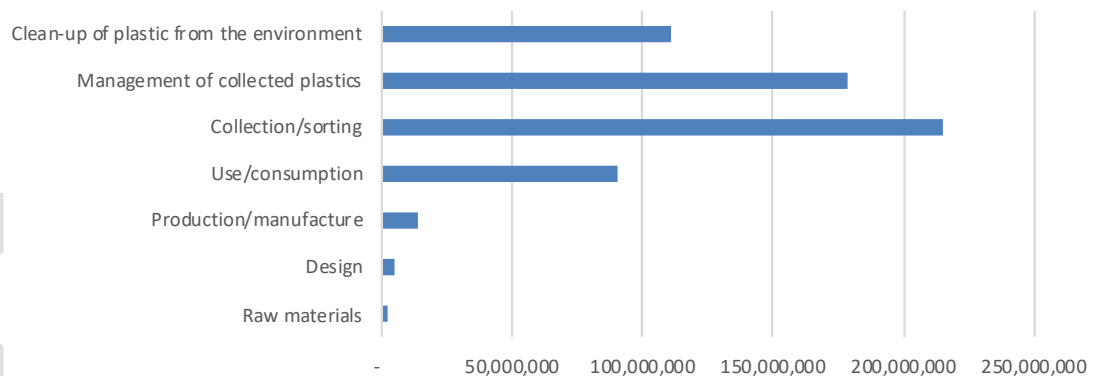


Figure 7. Total funding dedicated to initiatives tackling each element of the plastic lifecycle/supply chain (Source: Stocktaking Survey data)

46. A relatively small proportion of funds, on the other hand, has been dedicated to preventing the problem of plastic litter before it occurs, such as investing in design, production and manufacturing for circularity.

47. **Type of initiative:** Actions relating to legislation, standards and rules represented the largest proportion of both actions and funding reported (figure 8). This may reflect that establishing rules, standards and legislation is considered a priority in order to enable and support all other action types. Technology and processes (including research and development, new product design, new materials and processes, and changes in practice, operations, environmental management and planning) represented the smallest share of actions (14%) but the second largest share of financing (39%). It is likely that further financing needs to be mobilized in this area, since costly infrastructure projects form an important part of tackling marine plastic litter and microplastics. However, significant challenges exist in financing such projects. Public authorities often struggle to find sufficient funds for the large investments required, while private investors perceive large infrastructure projects as high risk. Finally, bilateral donors also sometimes face difficulties in supporting such projects where they are private sector owned, due to their internal restrictions.

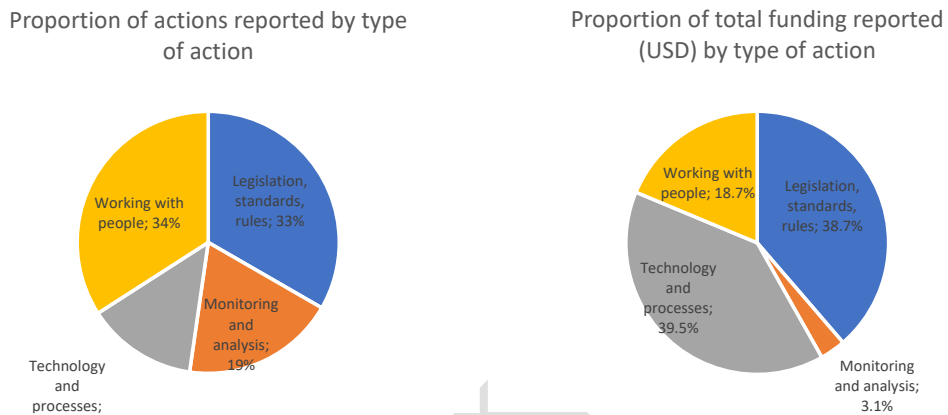


Figure 8. Types of actions reported and funding allocated (Source: Data from stocktaking Survey)

48. **Sectors prioritized:** Responses to the stocktaking survey revealed that initiatives targeting tourism received the highest amount of funding, followed by wastewater/sewage management and food and beverages (figure 9). Those sectors with high proportions of funding correspond with high polluting sectors, such as food and beverages, personal healthcare and retail, as well as those highly impacted by marine plastic litter, such as tourism, and sectors that are both, such as fishing. However, relatively little financial resources were dedicated to addressing some high polluting sectors, including textiles and agriculture.**

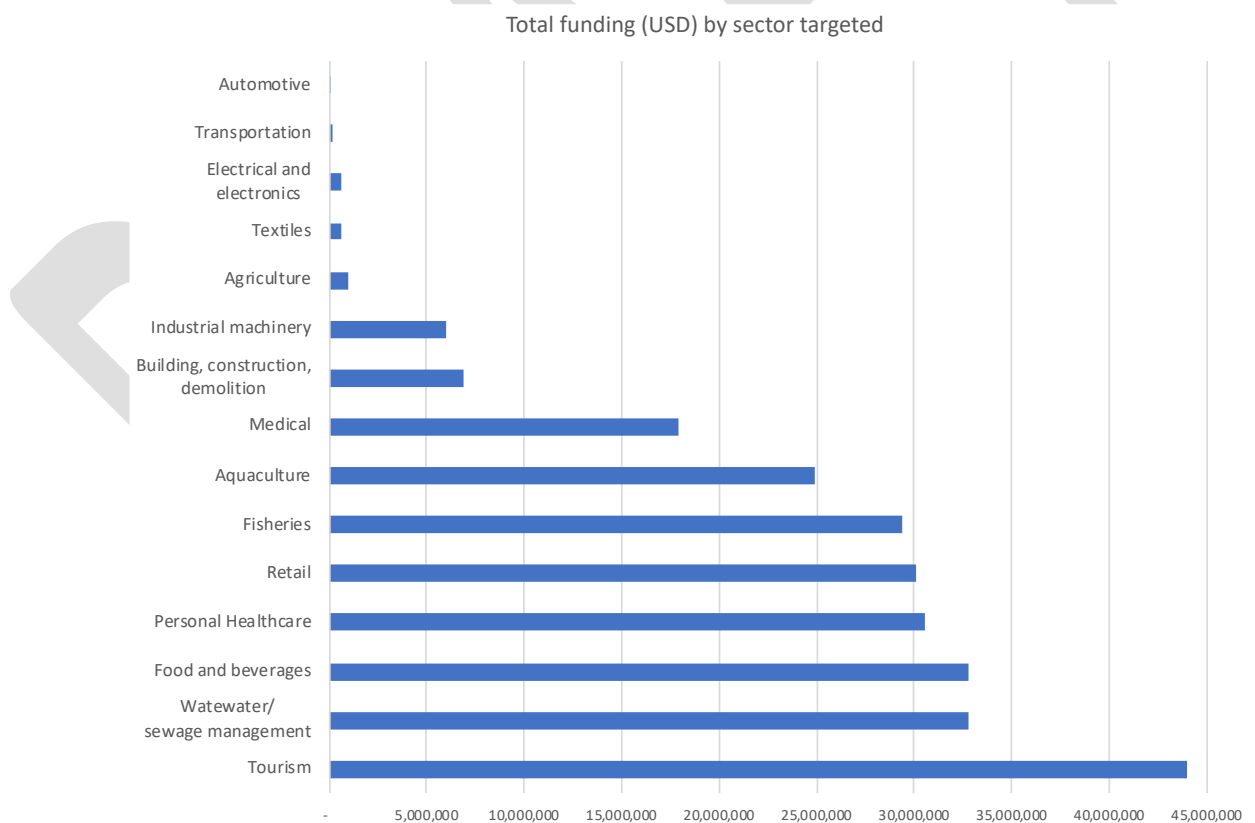


Figure 9. Total funding by sector targeted (Source: Data from stocktaking Survey)

** UNEP (2014) Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry.

49. **Gender:** It is notable that very few financing initiatives take an explicit approach to gender in the context of plastic pollution. There are some exceptions, for example USAID’s loan-portfolio guarantee with Circulate Capital designed to help mobilize investment to combat plastic pollution in oceans throughout the Indo-Pacific region, for which one focus is to empower women entrepreneurs in the environmental field. This is important because plastic pollution is recognized as having different and disproportionate impacts on women, including health effects of chemical in plastics^{††} and the high exposure of women workers and women-owned businesses in certain sectors effected by plastic pollution, such as tourism^{‡‡}, as well as in informal waste collection.^{§§}

D. Organizations receiving funding

50. Funds are quite well spread between public and private recipients, though funding flows for each are quite different. Governments are more likely to receive multilateral funding, whereas companies are more likely to be eligible to receive finance in the form of investment or loans, although grants in the form of prize money is also available in some cases. Many bilateral donors are not able to give money directly to private companies, although they may support them indirectly through support for incubators or accelerators. The results of the stocktaking survey show that the majority of funds reported in the study are allocated to actions implemented jointly by both public and private actors (figure 10).

Proportion of total funds by type(s) of organization implementing the action

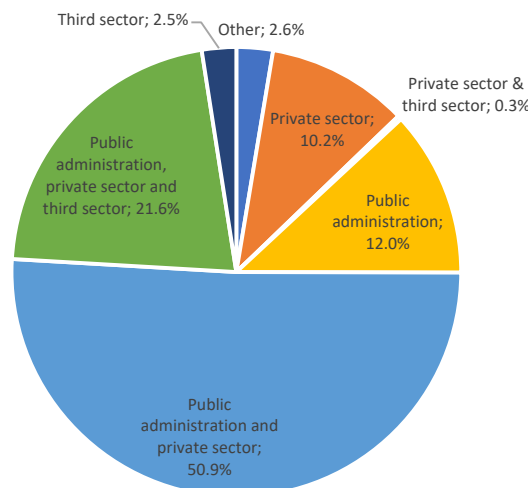


Figure 10. Proportion of total funds allocated by type(s) of organization implementing the action (Source: Data from stocktaking survey)

51. One notable trend is an increasing interest in funding cities and municipalities through grants or low interest loans, such as DFID Waste Pilots, The Trash Free Seas Alliance and Closed Loop Partners. Whereas the inventory of financial resources suggests that quite limited funds are available to initiatives of community-based organizations and indigenous communities, with notable exceptions including the Global Environment Facility (GEF) Small Grants Program.

^{††} J.T. Brophy, M.M. Keith, A. Watterson et al. (2012). Breast cancer risk in relation to occupations with exposure to carcinogens and endocrine disruptors: a Canadian case-control study. *Environ Health* 11, 87. Available at: <https://rdcu.be/bWVIP>

^{‡‡} World Tourism Organization and UN Women (2010). *Global Report on Women in Tourism*. Available at: http://www2.unwto.org/sites/all/files/pdf/folleto_global_report.pdf

^{§§} GA Circular (2019). *The Role of Gender in Waste Management*. Available at: <https://oceanconservancy.org/wp-content/uploads/2019/06/The-Role-of-Gender-in-Waste-Management.pdf>

E. Geographical focus

52. The majority of funding (71%) reported in the stocktaking survey was for actions at national level. Jambeck et al. estimated in 2015 that about half of all of the plastic waste that ends up in the oceans comes from just five countries: China, Indonesia, the Philippines, Thailand and Viet Nam. As a result, funders have tended to focus their efforts there, and the majority of funding reported in the stocktaking survey was for actions in countries in Asia and the Pacific (72%) (figure 11).

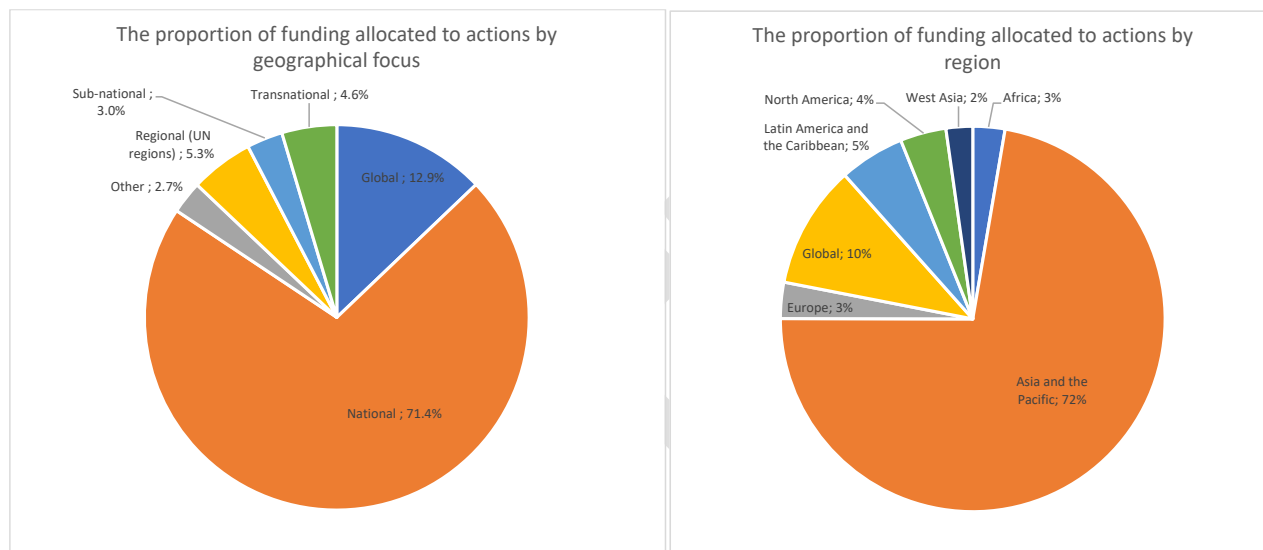


Figure 11. The geographical spread of financial resources (Source: Data from stocktaking survey)

F. Challenges and barriers

53. This study confirms the importance of the barriers identified by the ad hoc open-ended expert group on marine litter and microplastics and outlined in paragraph 13. In addition, it raises several other challenges:

- a) **Limited coordination in bilateral funding:** There is little coordination in bilateral funding in overall funding strategies or in project funding at a national level. This results in replication of efforts and funding and limits the alignment of funding with national or regional priorities and plans.
- b) **Continued need to increase private investment:** Despite increased efforts and funds designed to mobilize private financing, there are still enormous gaps in private investment in projects that would help reduce marine plastic litter and microplastics. One reason for this is the perceived lack of financial incentive, with many investors seeing high risk and a lack of viable business models. Partly this issue must be rectified outside of financing mechanisms, given, for example, the continuing production of cheap virgin plastic and fossil fuel subsidies, which undercuts recycled plastics. This can only be addressed through other mechanisms such as taxation or bans. Nonetheless, the perceived lack of profitability in the sector could be tackled through greater cooperation between the public and private sectors. For example, development banks can offer concessional capital and guarantees to reduce risks for private investors and governments can contribute to better enabling environments for such projects.
- c) **Difficulties in bilateral aid being used to support private sector projects:** Some donors who have an interest in supporting private sector projects may be limited by internal requirements. Other possibilities, such as capacity building to create a pipeline of bankable projects may be more feasible.
- d) **Challenges for countries in accessing multilateral funds:** Some countries encounter difficulties in meeting the requirements for funding, particularly from multilateral sources. Lessons can be learnt from climate finance, in which donors recognized countries' issues in accessing international funding and have developed supporting mechanisms to help countries do so, such as the Green Climate Fund Readiness Program.

- e) **Difficulties in coordinating national budgets and plans with varied international funds and initiatives:** Countries are increasingly dedicating their own funds and receiving significant international funds to combat marine plastic litter and microplastics. This can lead to a lack of coordination and alignment with national priorities on tackling marine plastic pollution.
- f) **Limited donor attention on some sectors with significant plastic footprints:** These sectors include textiles and agriculture, which receive relatively limited attention compared to others (see paragraph 48), despite their role in contributing to marine litter and, in the case of agriculture, facing risks as a result of plastic pollution.
- g) **A lack of explicit focus on gender:** In most cases, financing efforts do not appear to explicitly address gender elements of plastic pollution. This is despite important impacts of plastic pollution on women (see paragraph 49).
- h) **Limited funds available to initiatives by community-based initiatives and indigenous communities:** This may limit the ability of local communities to respond to plastic pollution and find innovative solutions. A lack of such funding may also limit the support available to groups excluded from national and international projects.

G. New opportunities for innovative financing of efforts to address marine plastic litter and microplastics

54. Given the needs for vastly increased investment in this space, stakeholders are looking to innovative financing mechanisms. These include the following.

55. **Joint public-private initiatives:** Increasingly, actors providing finance are recognizing the need for players of all kinds to collaborate on this complex and highly global issue. As a result, some public-private initiatives have developed to leverage the strengths of public and private actors and to coordinate efforts and funding. These include the Trash Free Seas Alliance, the Commonwealth Marine Plastics Research and Innovation Framework and the Global Plastics Action Partnership.

56. **Blended finance:** Blended finance involves private and public, or not-for-profit, entities partnering to finance initiatives. This could involve subsidized loans offered to companies tackling marine litter and plastic pollution at below market rates. Alternatively, a public or not-for-profit entity can guarantee all or part of a loan in case of default, making investment less risky and therefore encouraging private investment. Finally, they might invest in capacity building initiatives or initial grants to help a company or initiative reach the stage at which it is ready for traditional investment.

57. **Blue bonds:** A bond is a debt product used by companies, governments and municipalities to raise funding for projects. Recently, Blue Bonds have been employed to fund marine and ocean projects, with the first such bond launched by the Seychelles in 2018. The World Bank has also issued a Sustainable Development Bond for the Blue Economy. Such bonds can be guaranteed by development banks and supported by initiatives from other funders and development agencies, making them more attractive to investors. There may be significant potential for others, particularly cities and municipalities, to make greater use of such Blue Bonds.

58. **Plastic offset programs:** Similar to carbon offset programs, plastic offset programs allow a company to measure its plastic “footprint” and to then offset that through contributions to litter prevention, recycling or cleanup. Such mechanisms are still in quite early stages, especially since there is not yet any agreed methodology for measuring a company or organization’s plastic footprint.

59. **Specific plastics taxes or levies:** Plastics taxes and levies already exist in the form of plastic bag levies in many countries. Proceeds of these levies are often designated specifically to initiatives designed to tackle marine plastic litter. These funds can either be used for government initiatives or opened up to civil society and other organizations to submit proposals. Strong communication and transparency on the use of funds is vital to maintain public support. It has been reported in South Africa, that consumers’ acceptance of the plastic bag levy decreased partly due to unclear administration of the finances raised through the levy and poor results of the investments made in terms of recycling and

creating green jobs.*** Such plastic taxes and levies could in the future be applied more broadly to plastics, particularly to single-use plastics, and moves are already being made in this direction. The European Commission, for example, proposed a plastic tax in 2018.

60. **Advanced disposal fees:** These fees put a surcharge on consumer goods to subsidize their otherwise cost-prohibitive recycling after they are used by customers.

61. **Extended producer responsibility (EPR) schemes:** EPR is defined in the Organisation for Economic Co-operation and Development (OECD) 2001 Guidance as “an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of a product’s life cycle”. This can mean that companies are responsible physically for treating or disposing of post-consumer products, or that they are made responsible for the cost. In the case that they are made responsible for the cost, EPR schemes can generate funds for state’s plastic waste management and recycling efforts. Most OECD companies and many emerging economies have EPR programs in place for various products, such as electronic equipment, batteries, vehicles and so on. These have not generally been introduced specifically for plastics, but many existing EPR programs, especially around electronic waste, help ensure the proper treatment of plastics in those products. In 2018, the European Commission made proposals for EPR schemes to specifically cover the costs of waste management, clean-up of litter and awareness raising measures to reduce litter.

62. **Innovative insurance instruments:** A study conducted by UNEP’s Principles for Sustainable Insurance and the Global Partnership on Marine Litter outlined the possibility of insurers developing products to support cities or tourism areas in managing surges in plastic pollution. Insurers are already piloting parametric insurance policies based on factors like air pollution,††† and similar approaches could be considered for marine litter and plastic pollution. Such cover could be used to fund both clean-up efforts and measures to deal with the impacts of marine litter and plastic pollution.

63. **Environmentally preferred purchasing programs:** It is important for governments and large companies to consider how their own procurement policies can be an indirect source of financing for tackling marine plastic pollution and microplastics. Policies that mandate certain levels of recycled plastics in their purchases might be considered, for example, stimulating the recycled plastics market.

H. Provisional conclusions and recommendations on financial resources (to be finalized prior to AHEG-4)

V. Conclusions and outlook (to be finalized prior to AHEG-4 as work will continue)

*** Anton Nahmann (2010). Extended producer responsibility for packaging waste in South Africa: Current approaches and lessons learned. *Resources, Conservation and Recycling*, Vol. 54(3), pp 155-162.

††† Swiss Re, for example, is offering insurance against haze outbreaks in Singapore. More information is available at: <https://corporatesolutions.swissre.com/innovative-risk-solutions/non-physical-damage-business-interruption/hazeshield.html>