



Distr.: General
23 April 2018

English only



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

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

First meeting

Nairobi, 29–31 May 2018

Item 4 of the provisional agenda*

Introduction of discussion papers

**Discussion paper on barriers to combating marine litter and
microplastics, including challenges related to resources in
developing countries**

Note by the Secretariat

I. Introduction

1. For the past 60 years plastic has brought economic, environmental and social advantages. However, the increase in use and the promotion of products as “disposable” have caused an exponential increase in the amount of plastic waste generated, which brings with it economic, environmental and social issues. Marine plastic litter is generated by both land-based and sea-based activities and requires a holistic approach. An broad overview of the matter is set out in the 2016 report “Marine plastic debris and microplastics: global lessons and research to inspire action and guide policy change”,¹ the preparation of which was mandated by the United Nations Environment Assembly of the United Nations Environment Programme at its first session.²

2. Pursuant to resolution 3/7 of the United Nations Environment Assembly on marine litter and microplastics, adopted by the Environment Assembly at its third session, the ad hoc open-ended expert group will consider the following programme of work to further examine the barriers to and options for combating marine plastic litter and microplastics from all sources, especially land-based sources:

- (a) To explore all barriers to combating marine litter and microplastics, including challenges related to resources in developing countries;
- (b) To identify the range of national, regional and international response options, including actions and innovative approaches, and voluntary and legally binding governance strategies and approaches;
- (c) To identify environmental, social and economic costs and benefits of different response options;

* UNEP/AHEG/2018/1/1.

¹ UNEP/AHEG/2018/1/INF/4.

² UNEP/EA.1/Res.6.

- (d) To examine the feasibility and effectiveness of different response options;
 - (e) To identify potential options for continued work for consideration by the United Nations Environment Assembly.
3. The present note has been prepared by the secretariat to provide the ad hoc open-ended expert group with information to identify and discuss the barriers to combating marine litter and microplastics, including challenges related to resources in developing countries.
4. Section II A-D of the present note provides an overview of issues raised in a number of technical reports, notably “Marine plastic debris and microplastics: global lessons and research to inspire action and guide policy change” and “Combating marine plastic litter and microplastics: an assessment of the effectiveness of relevant international, regional and subregional governance strategies and approaches – a summary for policymakers”.³
5. The report “Marine plastic debris and microplastics: global lessons and research to inspire action and guide policy change” summarizes the state of our knowledge on the sources, fate and effects of marine plastics and microplastics, and sets out a number of approaches and potential solutions to address this multifaceted conundrum.
6. The latter report was prepared in response to the request made by member States in resolution UNEP/EA.2/Res.11 to undertake an assessment of the effectiveness of relevant international, regional and subregional governance strategies and approaches to combat marine plastic litter and microplastics. The report presented several governance options, including both binding and non-binding approaches to address the matter.
7. The ad hoc open-ended expert group is invited to consider the present note, along with other relevant resolutions, decisions and reports on marine litter and microplastics in order to identify barriers to combating marine litter and microplastics, including challenges related to resources in developing countries.
8. The present document should be read in conjunction with document UNEP/AHEG/2018/1/INF/3, entitled “Combating marine plastic litter and microplastics: an assessment of the effectiveness of relevant international, regional and subregional governance strategies and approaches – a summary for policymakers”, in which it was argued that a lack of coordination could be considered to be an overarching barrier. There is currently no global institution with a mandate to coordinate efforts and manage the issue upstream from the extraction of raw materials, design and use phases of plastic polymers and additives to final treatment and disposal. There is also a lack of various standards at the global level.

II. Types of barriers

9. Barriers are circumstances or obstacles that keep people or things apart or prevent communication or progress. For the purposes of the present paper, the following non-exclusive and non-exhaustive categories are used to group together different types of barriers:
- (a) Legal barriers;
 - (b) Financial barriers;
 - (c) Technological barriers;
 - (d) Information barriers.
10. The following sections elaborate on the above types of barriers with a view to facilitating discussion at the first meeting of the ad hoc open-ended expert group.
11. Many of the barriers listed are relevant for both developed and developing countries. Section III provides additional discussion on challenges related to resources in developing countries in particular.

A. Legal barriers

12. For the purposes of the present discussion, the definition of a “legal barrier” is any impediment or barrier established by, founded upon or generated by law, the absence of it or the lack of its implementation and/or enforcement.

³ UNEP/AHEG/2018/1/INF/3.

13. Legal barriers to the implementation of a circular economy⁴ have been identified and summarized in six areas, namely the lack of definition and the existence of gaps in legislation; unclear definitions of targets in legislation; the definition of hard numerical limits in regulations; lagging or incomplete implementation or enforcement of legislation; inconsistent national implementation of international legislation; and legislation which conflicts because it represents conflicting values, for example in a situation in which hygiene regulations conflict with regulations on food waste.

Barriers	Non-exhaustive examples
Legal	<ul style="list-style-type: none"> ▪ The reduction of marine plastic and microplastic is not the primary objective of any international legally binding agreement. ▪ Current regional and international legal and policy frameworks do not sufficiently stimulate industry involvement in solutions. ▪ Geographical gaps in the coverage of existing agreements, particularly on the high seas, but also with regard to internal waters and watersheds. ▪ Gaps in the development, implementation and enforcement of regional legally binding instruments to manage marine pollution originating from land in key regions. ▪ MARPOL Annex V (the International Convention for the Prevention of Marine Pollution from Ships, 1973, as modified) for the prevention of pollution by garbage from ships has exemptions based on vessel size (that is, those vessels equal to or above 100 gross tonnage or those under 400 gross tonnage) and currently excludes the vast majority of fishing vessels (responsible for the abandoned, lost or otherwise discarded fishing gear (ALDFG)). ▪ The Honolulu Strategy: a Global Framework for Prevention and Management of Marine Debris suggests approaches to reducing marine litter from land- and sea-based sources, but provides no measurable targets or timelines. ▪ Lack of harmonized binding standards at the global level for the mitigation of pollution by plastic waste, particularly from land-based sources (only 9 out of 18 regional seas conventions and action plans have adopted protocols related to land-based sources and activities). ▪ Poor application of due diligence and “the polluter pays” principle within various sectors of the plastics industry. ▪ Regulations do not cover shedding of microplastics during predictable use of a product (such as clothing, tyres, shoes, aquaculture or dolly ropes). ▪ Not all countries are party to relevant regional and international instruments. ▪ Lack of legislation to reduce production of unnecessary, disposable and difficult to recycle plastics, and to increase recycled plastic solutions. ▪ Lack of a regulatory basis for upstream innovative solutions. ▪ Lack of food and ecological contaminant regulations (for example, legislation defining maximum residue levels of microplastic contamination in seafood). ▪ Perverse incentives promoting disposable or single-use products. ▪ Lack of regulatory or market-based instruments to reduce consumption, particularly of unnecessary, disposable and difficult to recycle plastics. ▪ Extended Producer Responsibility schemes not implemented with the aim of stimulating design change within the plastics and consumer goods industry. ▪ Lack of legislation to stimulate demand for recycled plastics (in, for example, government and corporate procurement policies). ▪ Lack of legislation to stimulate supply of recyclable plastics (and other uses of non-recyclable plastics; see, for example, www.nevhouse.com) and providing for market-based solutions (such as landfill taxes) or regulatory solutions (such as bans). ▪ A lack of effective compliance and enforcement mechanisms at both the national and the international level. ▪ No global liability and compensation mechanism for pollution by plastic.

⁴ <http://ec.europa.eu/DocsRoom/documents/19742>.

Barriers	Non-exhaustive examples
	<ul style="list-style-type: none"> ▪ Most countries do not have a single authority or body responsible for overseeing the management of marine litter (prevention and mitigation). There are also limitations in government funding and staffing to address the issue and in access to data for informed decision-making and prioritization of resources. ▪ Management of waste plastic falls to Governments, including municipalities without sufficient financial support from businesses producing or using plastics in their products. ▪ Legislation and regulations conflict with each other because they represent conflicting values, for example when hygiene rules conflict with regulations on food waste (as in the case of plastic food packaging waste). ▪ Lack of sustainable public procurement policies in driving market transformation. ▪ Regulators do not create favourable markets for products with a certain percentage of recycled content, nor generate disincentive markets for single-use products.

B. Financial barriers

14. For the purposes of discussion, when high costs make a certain activity difficult to afford or implement, it is considered a financial barrier. Some of those financial barriers also constitute economic barriers. A non-exhaustive list of some of those barriers are listed below.

Barriers	Non-exhaustive examples
Financial	<ul style="list-style-type: none"> ▪ 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 for infrastructure for collection, treatment or disposal of plastic waste. ▪ 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. ▪ 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.

C. Technological barriers

15. For the purposes of discussion, technology barriers in relation to marine litter and microplastics include aspects related to the production, manufacturing and design of products, consumption systems and all aspects of waste collection, management and recovery.

16. The approach to dealing with marine litter and microplastics is extremely fragmented owing to a lack of standards and coordination across the plastics value chain, which has resulted in an expansion of the number of polymers and additives, and has also affected product design and the labelling of content. There is also a lack of global industry standards for environmental controls and quality specifications of plastics.

17. This also includes widely differing approaches to recovery, sorting and reprocessing technologies and systems across the world, in particular between developed and developing countries (both formal and informal sector recovery), all of which prevents the emergence of markets that are financially viable and effective.

18. With regard to the informal sector, there is a lack of technological solutions to improve working conditions and a need to define new approaches to ensure that the sector can be connected with the formal sector in order to engage the entire value chain.

Barriers	Non-exhaustive examples
Technological	<ul style="list-style-type: none"> ▪ 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. ▪ Technologies need to be developed to enable retention of microplastics in waste water treatment and sludge. ▪ Insufficient research into new business models enables plastic to remain in the system. ▪ Insufficient understanding of how to increase the recycled content of products.

D. Information barriers

19. For the purposes of discussion, the category of information barriers includes access to data, research, transparency, and education and awareness.

20. Information barriers are also highly relevant to inclusivity and environmental justice. Those who are most affected by marine litter and microplastics are also the least able to make their voices heard and often have the least access to information. They include marginalized groups and minorities, such as informal waste collectors and recyclers. In many cases they are not informed of the dangers to which they may be exposed, either owing to a lack of access to information or because they are illiterate. Even if they are aware of some of the dangers that they face, they may not have access to decision makers to make their concerns heard.

21. Gaps in data and research and lack of transparency and reporting also hamper efficient decision-making and priority-setting. A summary of key research needs is set out in chapter 13 of UNEP/AHEG/2018/1/INF/4.

Barriers	Non-exhaustive examples
Information	<p data-bbox="544 174 735 203">Data and research</p> <ul style="list-style-type: none"> <li data-bbox="544 219 1437 275">▪ 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. <li data-bbox="544 291 1437 371">▪ 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). <li data-bbox="544 387 1437 468">▪ Lack of knowledge and information on the social, economic and environmental impact of marine litter, with the importance of the impact on, for example, human health (toxicity) and biodiversity. <li data-bbox="544 483 1437 564">▪ Little recognition at the international policy level of the potential risks to human health, particularly from microplastics and nanoplastics, and the application of the precautionary principle and of freedom of information in that regard. <li data-bbox="544 580 1437 636">▪ Many countries do not have any data or monitoring programmes to set reduction targets or priority interventions. <li data-bbox="544 651 1437 707">▪ Lack of harmonized implementation of monitoring methodologies to facilitate the development of quantitative and operational reduction targets. <li data-bbox="544 723 1437 804">▪ Insufficient research and development of alternative materials, backed with life cycle analysis, to assess environmental consequences, and that are scalable and economically viable. <p data-bbox="544 819 775 848">Education / awareness</p> <ul style="list-style-type: none"> <li data-bbox="544 864 1238 893">▪ Lack of consumer information, awareness and public participation. <li data-bbox="544 909 1174 938">▪ Limited formal education on marine litter and microplastics. <li data-bbox="544 954 1437 1010">▪ 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. <p data-bbox="544 1025 858 1055">Transparency and reporting</p> <ul style="list-style-type: none"> <li data-bbox="544 1070 1437 1126">▪ Lack of global standards for national monitoring and reporting on the consumption, use, final treatment and trade of plastic that will eventually become waste. <li data-bbox="544 1142 1437 1223">▪ The need for greater reporting at the national level on consumption, production and end-of-life treatment of plastics (see the national inventories in option 3 in document UNEP/AHEG/2018/1/INF/3). <li data-bbox="544 1238 1437 1319">▪ 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. <p data-bbox="544 1335 791 1364">Trade in plastic waste</p> <ul style="list-style-type: none"> <li data-bbox="544 1379 1430 1408">▪ Require greater transparency: international codes do not provide adequate information. <li data-bbox="544 1424 1254 1480">▪ Lack of global reporting standards (see options 2 and 3 in document UNEP/AHEG/2018/1/INF/3). <li data-bbox="544 1496 1422 1576">▪ Lack of research and monitoring systems to determine if traded waste is mismanaged, for example if it is not going to licensed facilities, is going to landfill or if local waste leads to marine litter.

III. Challenges related to resources in developing countries

22. While many of the above-mentioned challenges are relevant to both developed and developing countries, there are certain challenges that are specific to developing countries.

23. It is important to note the disconnect between production and product design issues and the downstream use and end-of-life management of products. A great deal of attention is given to plastic leakage in certain regions, yet plastic production and research and design decisions in relation to products are made in other countries and regions, with little or no opportunity to influence those decisions from the perspective of the recipient countries. Similarly, until recently, a considerable flow of plastic trade (waste) had been to developing countries, most of which had little infrastructure or enforcement of environmental policies and practices. With a lack of a global standard for labelling, product content and recyclability guidelines, it is challenging for any country to deal with the many

types of products and polymers that end up as plastic waste, and all the more so in countries where access to relevant technologies may be limited.

24. With limited resources and many competing interests, in-country research and data collection on relevant information for marine litter and microplastics to inform decision-making may not be prioritized.

25. Rapid urban population increase in developing countries has resulted in large unplanned settlements and excessive amounts of solid waste, which is a major challenge for many cities in developing and transitional countries to deal with through waste management. Illegal dumping sites near rivers or coasts increase the risk of waste ending up in the aquatic or marine environment. Informal actors are sometimes relied upon in developing countries to deal with plastic waste, for example; however, as they contribute to recovery and recycling of waste on a self-financing basis, high-value plastic is naturally of preference to them, leaving low-value (which includes low-weight) plastic behind.

26. Resource challenges in relation to waste management include inadequate financing, poor infrastructure and technology, lack of public awareness of good sanitary practices, and inadequate legal and regulatory frameworks. The cost of waste management is considerable and it is a challenge for cities in low- and middle-income countries to be able to extend waste collection coverage to unserved parts of cities where there is less infrastructure and the ability of residents to pay is lower. While positive developments have been seen in many developing countries, with improvements in waste management, it should be noted that the projected production of plastic over the next 10 years may overshadow positive developments in this regard, as it may be a challenge for countries with limited resources to self-fund the continuous upgrades in waste management infrastructure that are needed to deal with the increased plastic waste stream.

27. Small island developing States face additional challenges, including the following:

(a) Limited on-island production, which leads to the import of products without the capacity to manage their end-of-life;

(b) Proximity of waste management centres (both formal and informal) to the ocean, increasing the risk of leakage;

(c) Geographical location, with long distances to other islands or continents, sometimes consisting of many islands spread out over large areas, which complicates collection;

(d) Insufficient economies of scale for attracting investment from the private sector for viable collection and recycling;

(e) Exposure to natural disasters, with limited capacity for effective early warning systems;

(f) Limited human resources with relevant expertise for addressing the range of sources, pathways and impacts associated with marine litter and microplastics;

(g) Limited capacity to set up and manage port reception facilities under MARPOL Annex V;

(h) Possible disproportionate influx of marine litter from external sources with no in-country capacity to handle such amounts.

28. A solution to the issues of port reception facilities is being explored in certain regions through analysis and identification of potential subregional reception facilities to deal with sea-based sources of waste from shipping.

29. The lack of public awareness is a crosscutting challenge. In developing countries, it may be due to a lack of resources to provide access to education.

IV. Recommendations and suggested actions

30. The ad hoc open-ended expert group is invited to consider the present note and deliberate at its first meeting to identify additional barriers and the ways in which they may be overcome.