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**First Meeting of the Ad Hoc Open Ended
Expert Group established under UNEP/EA.3/Res.7
Marine Litter and Microplastics**
Nairobi, 29-31 May 2018

Item 4 of the provisional agenda[1]

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

Note by the Secretariat

[1] UNEP/AHEG/2018/1/1

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 amounts of plastic waste generated, which brings with it related economic, environmental and social issues. Marine plastic litter is generated by land-based and sea-based activities and calls for a holistic approach. An overview of the issue is available in the report 'Marine Plastic Debris and Microplastics – Global Lessons and Research to Inspire Action and Guide Policy Change'(UNEP/AHEG/2018/1/INF/4) which was prepared in response to the request by resolution UNEP/EA.2/Res.11.

2. Pursuant to resolution UNEP/EA.3/Res.7 Marine litter and microplastics adopted by the UN Environment Assembly of December 2017, 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:

    i. To explore all barriers to combating marine litter and microplastics, including challenges related to resources in developing countries;
    ii. 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;
    iii. To identify environmental, social and economic costs and benefits of different response options;
    iv. To examine the feasibility and effectiveness of different response options; and
    v. 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 relevant information to discuss and identify the barriers to combating marine litter and microplastics, including challenges related to resources in developing countries.

4. Section III A-D of the present note provides the overview of issues raised through technical reports especially 'Marine Plastic Debris and Microplastics – Global Lessons and Research to Inspire Action and Guide Policy Change'[2] as well as 'Combating marine plastic litter and microplastics: An assessment of the effectiveness of relevant international, regional and sub-regional governance strategies and approaches'[3].

5. "Marine Plastic Debris and Microplastics" was prepared at the request of the first United Nations Environment Assembly, which took place 23-27 June 2014, hosted by UNEP in Nairobi, Kenya[4]. It is intended to summarise the state of our knowledge on sources, fate and effects of marine plastics and microplastics, and describe approaches and potential solutions to address this multifaceted conundrum.

6. The latter report was prepared in response to the request made by Member States through resolution UNEP/EA.2/Res.11 to undertake an assessment of the effectiveness of relevant international, regional and sub-regional governance strategies and approaches to combat marine plastic litter and microplastics. The report presented several governance options including binding and non-binding approaches to better address the issue.

7. The Ad Hoc Open Ended Expert Group is invited to consider this 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. This document should be read in conjunction with UNEP/AHEG/2018/1/INF/3 titled "Combating marine plastic litter and microplastics: An assessment of the effectiveness of relevant international, regional and sub-regional governance strategies and approaches." Herein, lack of coordination could be considered to be an overarching barrier. There is presently no global institution with the mandate to coordinate current efforts and

[2] UNEP/AHEG/2018/1/INF/4

[3] UNEP/AHEG/2018/1/INF/3

[4] UNEP/EA.1/Res.6

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 global level standards.

III. TYPES OF BARRIERS

9. Barriers mean circumstances or obstacles that keeps people or things apart or prevent communication or progress. For the purpose of this paper, the following non-exclusive and non-exhaustive categories are used to identify different types of barriers:

- Legal barriers
- Financial barriers
- Technological barriers
- Information barriers

10. The following sections elaborate on the type of barriers in the above-mentioned categories to facilitate the discussion at the First Meeting of the Ad Hoc Open Ended Expert Group on Marine Litter and Microplastics.

11. Many barriers herein listed are relevant for both developed and developing countries. Section IV provides additional discussion on challenges related to resources in developing countries.

III A. Legal barriers

12. For the purposes of 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.

13. Some identified legal barriers to the implementation of a circular economy[5] were summarized in six areas: The lack of definitions and the occurrence 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; Legislations that conflict each other because they represent conflicting values, for example with hygiene rules versus food waste.

Barriers	Non-exhaustive examples
Legal	• The reduction of marine plastic and microplastic is not the primary objective of any international legally binding agreement; • Current international and regional legal and policy frameworks do not sufficiently stimulate industry involvement in solutions; • Geographic 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 for the prevention of pollution by garbage from ships has exemptions based on vessel size (i.e., those vessels equalling or above 100 gross tonnage (GT), or those under 400 GT) 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

[5] http://ec.europa.eu/DocsRoom/documents/19742

	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 the various sectors of the plastics industry; • Regulations do not cover shedding of microplastics during predictable use of a product (clothing, tires, shoes, aquaculture, dolly ropes, etc.); • Not all countries are party to relevant international and regional instruments; • Lack of legislation to reduce production of unnecessary, disposable and difficult to recycle plastics, and to increase recycled plastics solutions; • Lack of regulatory basis for upstream innovative solutions; • Lack of food /ecological contaminant regulations (e.g. legislation defining maximum residue levels of microplastics 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 plastics and consumer goods industry; • Lack of legislation to stimulate demand for recycled plastics (e.g. Government and corporate procurement policies); • Lack of legislation to stimulate supply of recyclable plastics (and other uses of non-recyclable plastics, e.g. www.nevhouse.com) and providing for market based (e.g. landfill taxes) or regulatory solutions (e.g. 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; • 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 governmental funding and staff to address the issue as well as 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; • Laws and regulations conflict with each other because they represent conflicting values, for example with hygiene rules versus food waste (in the case of plastic food packaging waste); • Lack of sustainable public procurement policies in driving the market transformation; • Regulators do not create favorable markets for products with a certain percentage of recycled content, nor generate disincentives markets for single use products;

III 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 these are also economic barriers. A non-exhaustive list of some of these are listed below.

Barriers	Non-exhaustive examples
Financial	• 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 polluters pay principle in most countries related to marine litter and none in "common" areas such as high seas – leaves costs for 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 garbage and fishing gear at port reception facilities (encourages at-sea disposal/dumping); • Lack of implementation of market-based instruments, tax incentives, etc. 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 it is not yet known; • A failure to establish sustainable and profitable end-markets for all end-of-life plastics (domestic and international); • Lack of end-markets for plastic waste (domestic and international);

III C. Technological barriers

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

16. There is a very fragmented approach to dealing with marine litter and microplastics e.g. due to the lack of standards and coordination across the plastic value chain which has resulted in an expansion of the numbers of polymers and additives, as well as product design, and 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 particularly between developed and developing countries (formal / informal sector recovery). All this 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 their working conditions and a need to define new approaches to ensure that this sector can be connected with the formal sector in order to engage the entire value chain.

Barriers	Non-exhaustive examples
Technological	• Industry design and consumption systems are not prioritised along the 3R / waste hierarchy: reduce, reuse, recycle; • Infrastructure for waste management and/or recycling; • Disconnect between innovation in production and after-use systems and infrastructure; • Rural areas not well serviced which also reduces likelihood for viable recycling schemes; • Coordinated development and adoption of labelling standards is lacking which hinders separation as well as an understanding of content of products, for reuse / recyclability; • New alternative materials may need to be collected in a separate waste stream; • Many government authorities, corporations and public have little to no knowledge of the issues and 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/inadequate design of products to meet air and water quality standards in order to reduce emission of microplastics from wear and tear during use of the product, as well as evaluating compliance with such standards when conducting lifecycle and environmental impact assessments; • Insufficient involvement by industry in solutions; • Technologies to enable retention of micro-plastic in waste water treatment and sludge needs to be developed; • Insufficient research on new business models that enable plastic to be kept in the system; • Insufficient understanding on how to increase recycled content of products.

III D. Information barriers

19. For the purposes of discussion this includes access to data, research, transparency and education/awareness.

20. This is also highly relevant to inclusivity and environmental justice. The most afflicted by marine litter and microplastics are the least able to make their voices heard and usually have the least access to information. This would include marginalized groups or minorities including informal waste collectors and recyclers. In many cases they are not informed sufficiently about the dangers they may be exposed to due to either lack of access to information or illiteracy. Even if they are aware of dangers they may not have access to decision makers to make their concerns heard.

21. Data and research gaps and lack of transparency and reporting also hamper efficient decision making and priority setting. A summary of key research needs was outlined in Chapter 13 of UNEP/AHEG/2018/1/INF/4.

Barriers	Non-exhaustive examples
Information	Data and research: • Lack of data in at various levels on the sources and the extent of plastics and microplastics in the marine environment, in organisms and on the 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 (as well as by geography, application, polymer type, size, etc.); • Lack of knowledge and information on social, economic and environmental impact of marine litter, with the importance of impacts on human health (toxicity), biodiversity, etc.; • Little recognition at the international policy level of the potential risks to human health, particularly from micro- and nanoplastics, and the application of the precautionary principle and of freedom of information in this regard; • 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, that are scalable and economically viable; Education / awareness: • Lack of consumer information, awareness and public participation; • Limited formal education on marine litter and microplastics; • Need to identify and address cultural barriers to behavioural change, to facilitate adoption of reusable delivery systems, to replace single use plastics; Transparency and reporting: • Lack of global standards for national monitoring and reporting on consumption, use, final treatment and trade of plastic (that will eventually become waste); • Need for greater reporting at the national level on consumption, production and end-of-life treatment of plastics (refer to national inventories in Option 3 in UNEP/AHEG/2018/1/INF/3); • 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 society is willing to take; Trade in plastic waste: • Require greater transparency – international codes do not provide adequate information; • Lack of global reporting standards (refer to Options 2 and 3 in UNEP/AHEG/2018/1/INF/3); • Lack of research and monitoring systems to determine if traded waste is mismanaged, i.e. not going to licensed facilities, is going to landfill, or if local waste leads to marine litter;

IV. 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 challenges specific to developing countries.

23. It is key to note the disconnect between production and product design issues and the downstream use and end-of-life management of products. A lot of attention is given to some regions for plastic leakage, however 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 these from the recipient countries perspective. Similarly, until recently, a considerable flow of plastic trade (waste) has been to developing countries, where little infrastructure and enforcement of environmental policies and practices may exist. With a lack of a global standard for labelling, product content, recyclability guidelines etc. it is challenging for any country to deal with the many types of

products and polymers that end up as plastic waste in their respective country in particular 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 amount of solid waste which is a major challenge for many cities in developing and transitional countries to keep up with through waste management. Illegal dumping sites near rivers or coasts exacerbate the risk of waste ending up in the aquatic or marine environment. Informal actors are sometimes relied upon in developing countries for e.g. plastic, however as they contribute to recovery and recycling of waste in a self-financing way, high-value plastic is of preference leaving low-value (which include low-weight) plastic behind.

26. Resource challenges in relation to waste management include inadequate financing, poor infrastructure and technology, lack of public awareness on good sanitary practices, and inadequate legal and regulatory frameworks. The cost of waste management is considerable and a challenge facing a low- and middle-income country city includes how to extend collection coverage to unserved parts of the city where there is less infrastructure and the ability to pay is lower. While positive developments have been seen in many developing countries with improvements in waste management, it should be noted that projected productions 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 needed to deal with the increased plastic waste stream.

27. Small Island Developing States have additional challenges to deal with for various reasons such as:

- Limited on-island production leading to import of products without capacity for managing their end-of-life;
- Proximity of waste management centre (formal and informal) to ocean increasing risk of leakage;
- Geographical location with large distances to other islands or continents, and sometimes consisting of many islands spread out over large areas which complicates collection;
- Insufficient economies of scale for attracting private sector investments for viable collection and recycling;
- Exposure to natural disasters with limited capacity for effective early warning systems;
- Limited human resources with relevant expertise for addressing the range of sources, pathways and impacts associated with marine litter and microplastics;
- Limited capacity to set up and manage port-reception facilities as per MARPOL V;
- May experience a disproportionate influx of marine litter from external sources with no in-country capacity to handle these amounts.

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

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

V. RECOMMNDATIONS 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 further identify additional barriers, and ways of overcoming these.