UNIDO Contribution to
Background Note for the 2020 United Nations Conference to support the implementation of SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
2-6 June 2020, Lisbon

Theme proposed:

Public-private partnerships for addressing the marine plastic litter challenge with circular economy practices

The proposed theme is directly related with SDG target 14.1 and indicator 14.1.1, as shown below.

Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Indicator 14.1.1: Index of coastal eutrophication and floating plastic debris density

Introduction

Plastics are versatile materials, being inexpensive, light, easily shaped and durable and have brought immeasurable benefits to many areas of life. They are used in numerous industrial sectors, including packaging, health care, construction, automotive, aviation, agriculture, logistics and storage, consumer goods, clothing and many more.

Primarily made from fossil fuels, plastic materials are valuable, embody our world's limited natural material resources (in addition to oil, a lot of energy, mostly of the non-renewable kind, and water), and come with sunk investment costs that may be reused to create fresh economic value.

Due their widespread use in the products the global population consumes on a daily basis and the embodied economic value of plastics wasted, including those entering our oceans, this is an ideal area for public-private partnerships at the global, regional, national and local levels.

Plastics production and waste generation

In 2015, global production of primary, or virgin, plastics was 407 million metric tons (Mt) and expected to double by 2030 and to double again by 2050, excluding bio-based plastics production that was approximately 1% of total annual production of fossil fuel-based plastics.

In 2015, 302 Mt of plastic waste was generated, amounting to 74% of the total primary plastics production in the same year, including secondary (recycled) plastics. In the same year, plastic waste generated as a proportion of plastics produced for use in sectors such as plastic packaging, plastic consumer and institutional goods, and synthetic textiles were 97%, 88%, and 71%, respectively.

As of 2015, approximately 6,300 Mt stock of plastic waste had been generated, around 9% of which had been recycled, 12% incinerated, and 79% accumulated in landfills or the natural environment; a huge loss in economic terms and alarming with respect to potential harm that this could mean to humans, animals and plants and our ecosystems, particularly our oceans.

State of marine plastic litter in oceans

The global community has mobilized to put a stop to the global marine plastic litter challenge. This challenge comprises of an estimated stock of 83 Mt of plastic waste that has already accumulated in oceans and an estimated 8 Mt of additional, mismanaged plastic waste entering oceans annually, at least 80% of which originates directly from land-based sources.

There is hardly any global, regional, national report and research study on marine plastic litter that does not point out the role of plastic packaging, single-use or short-lived and fast-moving consumer products, personal care products containing microbeads, synthetic clothing and microfibers, and fishing gear lost at sea.

Firms have made voluntary commitments regarding plastic packaging, single-use plastics and plastic microbeads and microfibers contained in some consumer products.

Circular economy practices for addressing the marine plastic litter challenge and opportunities for partnerships

The problem of marine plastic litter can be addressed inter alia through implementing circular economy practices along numerous plastics value chains. This is clearly a task for firms engaged in design, manufacturing and retailing products and services.

Circular economy practices, in conjunction with optimizing landfill management, will substantially reduce the amount of those plastics most likely to end up as marine plastic litter. Together with measures to tighten the management of marine based sources of marine litter (e.g. fishing nets lost to oceans), and with clean-up operations where feasible, increased plastic pollution of oceans may be stemmed and eventually prevented.

How circular economy practices could limit the land-based source of marine plastic litter are demonstrated below through the lifecycle stages of plastic products, including plastic packaging.

In the ***product design stage***, the following measures adopted by the business sector would not only reduce plastics wasted, but could also come with cost savings and competitive advantage:

a) Scrutinizing the necessity of packaging altogether, including of plastics;
b) Selection of renewable, biodegradable and compostable materials and additives that are not or less toxic for essential plastic packaging or single-use plastic products to ease maintaining value and ease recycling;
c) Designing for less material use to decrease waste; and
d) Designing packaging and products that use a single or small number of polymers that are easy to separate during recycling.

Policy measures taken by governments to incentivize circular economy practices in design could consist of supporting implementation of innovations in design of existing and new products, and new, biodegradable and compostable plastics. A number of initiatives could trigger both supply side motivation for circular product designs and preference for such products on the demand side. Measures for creating markets for recycled plastics and improving markets for bio-based plastics; differentiated taxes on virgin and recycled plastics; introduction of standards for recycled content; improving information on recycled content in products in combination with educational campaigns for consumers could help in reducing use of plastics as well as address land-based sources of marine plastic litter. Furthermore, support for development of effective infrastructure for collection and separation of waste streams, and empowerment of local authorities with sufficient financial and technical resources could induce product designs for ease of recyclability.

In the ***production stage***, businesses could strengthen management of plastic raw materials to eliminate material losses into wastewater streams, and improve resource productivity of manufacturing by implementing resource efficient cleaner production methods to prevent leakages of plastic raw materials and industrial plastic waste into the environment and oceans.

In ***service sectors***, for instance in tourism and retail businesses and industrial laundries circular economy practices of choice may consist of:

a) Replacing single use packaging with durable and reusable packaging;
b) Substituting materials for packaging with renewable ones;
c) Implementing new business models that eliminate the need for packaging and single-use plastic products; and
d) Reducing and eliminating shedding of microfibers and microbeads into waste and wastewater management systems.

Policy responses supporting the above measures could go a long way by expanding their adoption by enterprises from micro to large. In addition, the development of information and knowledge platforms on good practices and emerging regulatory requirements and support programmes for their implementation would help.

In the ***use stage***, suppliers as well as customers should be led towards choices supporting circular economy practices, in particular opting out of single-use plastic products, and supporting waste management systems that can collect, sort, separate and effectively recycle plastics. This can be achieved through means such as the enforcement of bans for some and levies for other plastic products, enforcement and charges in cases of non-compliance, and deposit return schemes for reducing single-use or short-lived plastic product use.

Furthermore, consumers could be encouraged to shift to business models based on product-as-service or sharing to extend lifetime of plastic products consumed; and to reject products containing microbeads or that shed microfibers; also, retrofits to e.g. household washer/driers could filter out microbeads/microfibers. Bulk consumers could deploy their purchasing power along circular use patterns. Policies facilitating the proposed changes should be complemented by consumer education that starts at early ages for a future without plastic litter that ends up in oceans and is a huge economic loss at the same time.

At the ***end of the first life***, products should have various directions to follow before becoming waste: reuse with or without repairs or refurbishment, recycling for secondary materials for the same type of use; up-cycled to higher value uses or down-cycled to an alternative use. It should be noted that circular economy practices applicable to plastic packaging and short-lived, fast moving plastic products would be same or very similar.

Consequently, plastic waste of short-lived products, including packaging should find their way into effective waste management and recycling systems. It should be an aim to make recycling of plastics competitive compared to tipping fees for landfilling; currently, these fees do not reflect all externalities in many countries. It also appears meaningful to provide support for innovation towards technology improvements in mechanical and, in particular, chemical recycling to help production of recyclates of high quality for new products.

Extending and further developing producer responsibility schemes supports both greener product designs for recyclability, as well as collection and consolidation of waste streams for recycling operations. Easily understandable labelling schemes can help consumers to participate effectively in waste management. Regulating use of hazardous materials in products have already brought about many effective outcomes.

Support for international cooperation globally will allow sharing best practices on successes already recorded. This might include, but not be limited to:

a) Transfer of recycling technologies and knowledge sharing;

b) Technical assistance for integration of informal sector waste operators into waste management systems; and
c) Capacity building in developing countries on circular economy practices.

Finally, seeking and supporting innovations for measures to clean-up plastics from shores and water columns and open oceans would need to continue, where economically feasible (e.g. ocean surface, coasts, ports, …).

With today's technologies, it is almost impossible not to have a waste fraction of products, or what we all consume that requires ***final disposal***, including for short-lived, fast moving plastic products and packaging. Options would be safe landfilling or elimination, particularly of hazardous material containing plastic fractions under controlled incineration conditions. An additional option might be to encapsulate residual plastics in other materials, such as in paving mixes in road construction, as long as it could be ascertained that leakage of plastic particulate matter and some of the hazardous additives they contain into the environment is assured.

In ***summary***, typical circular economy practices for designing out waste to retain plastics within the economy as long as possible; regaining the value embodied in plastics that leak out of the economy as waste; and continuing efforts for recovering plastics already in oceans, where feasible, emerge as strategies worthwhile for reducing marine plastic litter. In this endeavor, firms, governments and consumers could work together in public-private partnerships.