

ADDRESSING SINGLE-USE PLASTIC PRODUCTS POLLUTION USING A LIFE CYCLE APPROACH



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FOREWORD



Plastic pollution is a major environmental issue that we must urgently address given the scale of the problem and our increasing levels of consumption. We need bold action and commitment at all levels. And we need stakeholders to work together to develop lasting solutions across the life-cycle of plastic products.

Policymakers play a critical role in ensuring that the conditions and incentives for reducing single-use plastic products pollution are established and effectively support the technology and long-term behavioural change we need to eradicate plastic pollution.

This is why this Report, summarizing government actions to address single-use plastic products pollution and assessing the full life-cycle environmental impacts of single-use plastic products in comparison with their alternatives, is so important.

The findings emphasize critical points that policymakers should consider when developing policy on this topic. Importantly, it emphasizes that products intended for single use are the problem, regardless of their material. Policymakers should not only promote reusable products but promote multiple uses of those products. This will require policy interventions at different leverage points across the life-cycle of products. And these interventions will need to be tailored to local conditions where the policy will be implemented and enforced, addressing also the needs (e.g. re-training) of those sectors most affected (e.g. producers of single-use plastic products no longer produced). Overall, it needs to be recognized that a systemic transformation of the plastics economy is needed, and therefore a comprehensive policy response is needed, rather than isolated actions.

There will always be environmental impacts from products that we produce and use. Trade-offs will need to be made. But life-cycle thinking helps us identify those trade-offs and potential impact reductions in a transparent way while addressing burden-shifting.

Countries that have provided case studies in this Report are all demonstrating their commitment to action. They represent only a small number of the many countries determinedly working to address plastics pollution, with noticeably increasing attention on the issue over recent years. The sharing of experiences from different approaches to addressing plastic pollution can illuminate valuable lessons on developing policy, as well as on the complexity of the issue. Important knowledge gaps, for example, around information and consumer behaviour, as well as access to alternative materials and end-of-use waste management methods can be identified. They also demonstrate that much can be done already with the development of a clear timetable of action and supporting infrastructure.

Yet, we can and need to do more. This is even more critical at a time when our efforts to reduce our reliance on single-use plastic products are challenged by the global COVID-19 pandemic.

Two years ago, Member States called for the information contained in this Report under a specific Resolution initiated by India on Single-Use Plastic Products at the Fourth session of the UN Environment Assembly. Now, we must continue to build on this good work and encourage comprehensive national efforts through strong science and good governance.

Ligia Noronha
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EXECUTIVE SUMMARY

In response to the request by Member States at the Fourth session of the UN Environment Assembly in March 2019¹, this report describes: a) actions taken by Member States to address single-use plastic products (SUPP) pollution and b) the full life-cycle environmental impacts of single-use plastic products in comparison with their alternatives.

The Report includes results of LCA meta-analyses on SUPP and their alternatives, an elaboration on a variety of resources and mechanisms related to actions to address SUPP pollution, as well as country-level case studies on policy development presented by a selection of Member States. The development of this Report was supported through a four-part webinar series hosted by UNEP in October 2020.

A summary of recommendations from the LCA meta-studies, as well as key findings from the country-specific case studies on actions implemented by Member States is set out below. A critical finding, however, of this work is that “single-use” is more problematic than “plastic”. Therefore, Member States are encouraged to support, promote and incentivize actions that lead to keeping resources in the economy at their highest value for as long as possible, by replacing single-use plastic products with reusable products as part of a circular economy approach. This will require systems change.

Summary of recommendations from LCA meta-analyses on single-use plastic products and their alternatives

Key points that policymakers should consider when developing policy, based on the results of the LCA meta-analyses, include:

► Promote reusable products

Most often, reusable products have lower environmental impacts than single-use products. The meta-studies concluded that the more times a product can be used the lower the environmental impact of that product. Incentivize both reusable products and reuse rates in policy interventions.

► Use LCA and a range of robust information sources

LCA provides important insights for policymakers but these need to be supplemented with a range of additional studies and knowledge. Impact assessment of litter and health impacts are not yet well accounted for in LCA studies and should be carefully considered. There are also information gaps relating to long-term impacts on ecosystems and health e.g. microplastics. Social aspects as well as gender analysis also need careful consideration.

► Know your context

Be geographically and socially specific to the location to which the policy will apply. For example, understand the energy use at the source of production, the recycling capability within the community, and the mode of disposal at end-of-life. Factors, such as the weight of plastic products and recycling rates can differ between regions and countries. Littering may be a significant factor where waste-management systems and infrastructure for collection and recycling are weak.

► Production is a significant contributor to the environmental footprint of single-use plastic products and their alternatives

Consider opportunities to avoid or reduce negative environmental impacts within production and save impacts from production by reducing consumption of such products, or by keeping the products in the economy for longer through reuse.

► End-of-life scenarios have a substantial influence on environmental impact results

Each product material should be assessed considering the most feasible end-of-life option.

► **Promote product design for circularity, including reuse**

Lighter, smaller, and more durable products within the same material categories will reduce environmental impacts. Design innovation might also help reduce food waste or the environmental footprint of washing for reusable tableware. Design can also lead to different decisions at end-of-life that will impact on recyclability or disposal. A well-designed Extended Producer Responsibility scheme can also help positively influence design choices.

► **Recognize trade-offs**

There will always be trade-offs in policy decision-making. The important aspect is to transparently identify these where possible, minimize them, and reduce burden-shifting. LCA studies can help make trade-offs transparent. Policymakers will need to decide how to best prioritize impacts according to their context. Be aware that environmental footprints of SUPP alternatives will depend on a range of factors which need to be assessed on a case-by-case basis. There may also be important social considerations which LCA have not taken into account, including the need to consider a gender lens when comparing different products and their use.

► **Factor in future technology innovation and change, as well as scale-up potential**

Novel production technologies may need time to develop and scale up before they can perform at the same or better standard than established large-scale technologies. Recycling technologies for certain types of packaging, for instance, are developing rapidly. And power generation systems, transportation and recycling processes may change over time.

► **Reduce the use of single-use products whatever the material**

Replacing one disposable product (e.g. made of plastic) with another disposable product made of a different material (e.g. paper, biodegradable plastic) is only likely to transfer the burdens and create other problems. Further, to avoid burden shifting between the environmental and the social dimension, it is important to support current manufacturers of single-use products to shift their focus towards the production of more circular and sustainable commodities.



Summary of key findings from country-specific

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