



Fact Sheet

#4

For more information consult “Drowning in Plastics - Marine Litter and Plastic Waste Vital Graphics” publication by UNEP, the BRS Secretariat and GRID-Arendal. Available from link <https://bit.ly/3GOrz8E>

Plastic waste prevention and minimization

The first and most important step to decrease plastic waste is prevention and minimization. Article 4 of the Basel Convention stipulates, among others, that “Each Party shall take the appropriate measures to: (a) Ensure that the generation of hazardous wastes and other wastes within it is reduced to a minimum, taking into account social, technological and economic aspects”. The Cartagena Declaration on the Prevention, Minimization and Recovery of Hazardous Wastes and Other Wastes sets forth a strong commitment by the Parties to the Basel Convention to promote the prevention and minimization of the generation of hazardous and other wastes.

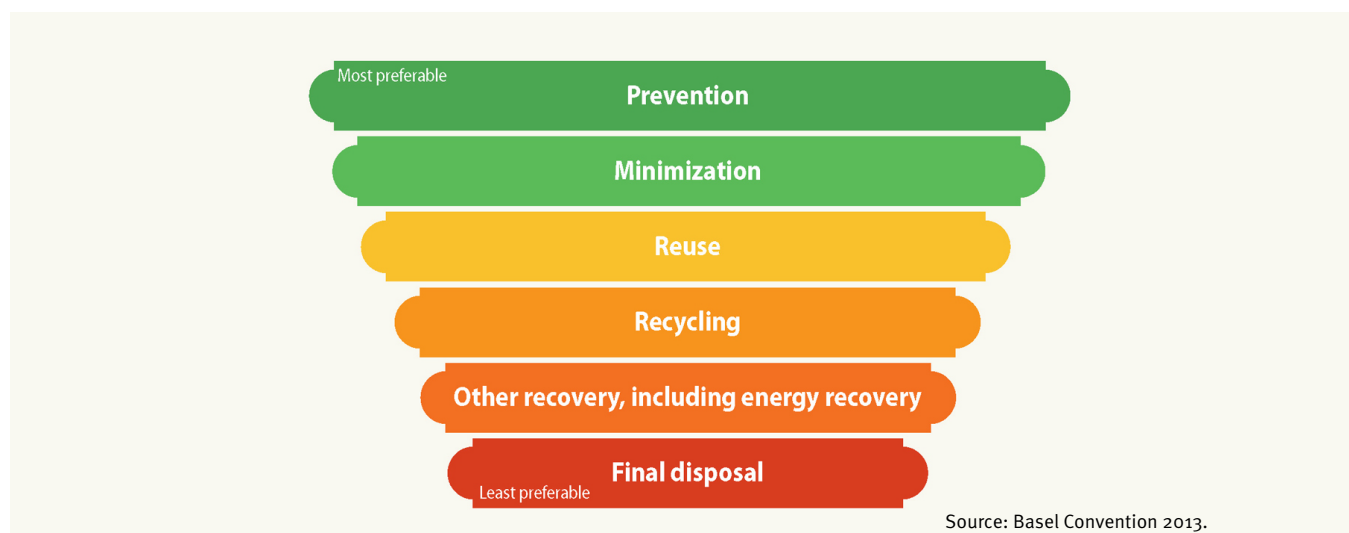
Waste prevention and minimization strategies or measures can have multiple objectives. There can be the overall objective of decoupling waste generation from economic growth. Other objectives may include

improving material and resource efficiency, decoupling resource use from economic growth, preventing the use of primary materials and shifting towards a circular economy. Waste prevention and minimization may also target the reduction of harmful substances as part of its overall objectives. Job creation is another possible objective.

The waste management hierarchy

The Strategic framework for the implementation of the Basel Convention, features among its guiding principles the need to recognize the waste management hierarchy, which prioritises waste prevention and minimisation. The Framework for the ESM of hazardous wastes and other wastes calls on stakeholders to promote an integrated life-cycle approach and highlights that stakeholders should respect the waste management hierarchy (Figure 1).

Figure 1: The waste hierarchy







Waste prevention and minimisation can be achieved in any phase of the plastic life cycle from sourcing of raw materials to production, use and, finally, in the waste management phase. The production phase provides the opportunity for the design of products that can be repaired, redesigned or recycled, and the choices made at the design stage can influence the sorting and recycling processes as well as the options available for recycling.

Waste prevention and minimization strategies

A wide range of waste prevention and minimization strategies are available and fall into four broad categories, as shown in the table below.

Table 1: Waste prevention and minimization strategies

| | |
|--|---|
|  Regulatory strategies | Planning measures |
| | Taxes and incentives, such as pay-as-you-throw (PAYT) schemes |
| | Extended Producer Responsibility (EPR) policies |
| | Green Public Procurement policies |
| | Eco-design requirements |
|  Information exchange strategies | Information on chemicals in products |
| | Awareness campaigns |
| | Information on waste prevention and minimization techniques |
| | Education and training programmes for involved stakeholders |
| | Eco-labelling |
|  Promotional strategies | Support for voluntary agreements |
| | Promotion of reuse, refurbishment and repair |
| | Promotion of environmental management systems |
| | Sustainable consumption and production incentives |
| | Promotion and dissemination of research and development |
|  Technology strategies | The use of cleaner production |
| | Innovative ways of resource-efficient manufacturing |
| | Industrial symbiosis models |

Source: Basel Convention 2017.



Regulatory strategies

Regulatory strategies involve enforcing limits on waste generation, expanding environmental obligations and imposing environmental criteria on public contracts. Numerous countries have undertaken national efforts to phase out single-use plastics (UNEP 2018a). So far, 127 countries, including 37 African countries, have adopted regulations for partial or full bans of plastic bags (UNEP 2018b). In 2010 Japan prohibited the distribution of drinking water in small single-use bottles in local government meetings, while in the same year installing drinking fountains and bottle filling stations to further enhance the reduction of PET bottles (FoE Japan and IGES, 2013).

The Extended Producer Responsibility (EPR) system allows producers to take financial responsibility for their products when they become waste by paying fees at different stages of waste management. Deposit return – one example of an existing EPR system – can be applied to various products. Consumers buying a bottled beverage, for example, pay a deposit that is refunded when the consumer returns the empty bottle to a collection spot. The implementation of deposit return schemes for plastic beverage bottles normally leads to high levels of collection, and provides a clean stream of secondary plastics for the recycling industry. In some European countries, deposit return systems can collect more than 90 percent of beverage bottles (Changing Markets 2020).



Information exchange strategies

Informational strategies aim at changing behaviour and enabling informed decisions. Claims made by producers about the beneficial qualities or characteristics of their goods and services could in many cases be seen as a valuable means of informing consumers about environmental issues such as plastic pollution. Internationally or nationally recognized label standards currently apply to plastic design, production, recycled content, recyclability, composability and biodegradability, and are important to ensure specific properties related to quality and the production process (e.g. ISO 83.080.01 on plastics) as well as in developing the best waste management practices (e.g. ISO 18604 on material recycling).

However, these labels often fail to address real-life conditions such as the status of local waste management systems and the availability of necessary services and/or infrastructure (UNEP 2020). Labels and claims may be unclear to consumers – the difference between “made with recycled plastic” and “recyclable”, for example (UNEP 2020) – as plastic packaging labeled “recyclable” may go

to energy recovery rather than material recycling. Moreover, labels or claims rarely provide information on the presence of additives in plastic products, information that could lead to better consumption and design decisions that reduce exposure to harmful substances.

Awareness-raising campaigns and environmental education on the impacts of plastic pollution also have important roles to play in encouraging changes in consumer behaviour. In Bali, the “Bye Bye Plastic Bags” initiative, a youth-led social campaign to mobilise people to say no to plastic bags started as a resistance effort, and four years later the local governor signed a provision phasing out plastic bags in the region (UNEP 2018a). In another innovative approach, two Dutch non-governmental organizations – the Plastic Soup Foundation and the North Sea Foundation – developed a mobile app that detects products known to contain microplastic beads and allows consumers to make informed purchasing decisions (Chang 2015).



Promotional strategies

Promotional strategies involve providing incentives for behavioural change as well as providing financial and logistical support for beneficial initiatives. For instance, business could set voluntary recycling targets, governments and the business could enter public-private partnerships to advance research non-plastic alternatives etc. For example, the ‘Plastic Free Campaign’ run by the Jamaican government used social media to engage people to support a ban on single-use plastics in Jamaica, use reusable bags, and imagine a Jamaica free of expanded polystyrene foam (styrofoam). The campaign used incentives such as giveaways to get people engaged and statistics about how styrofoam is toxic for human health.

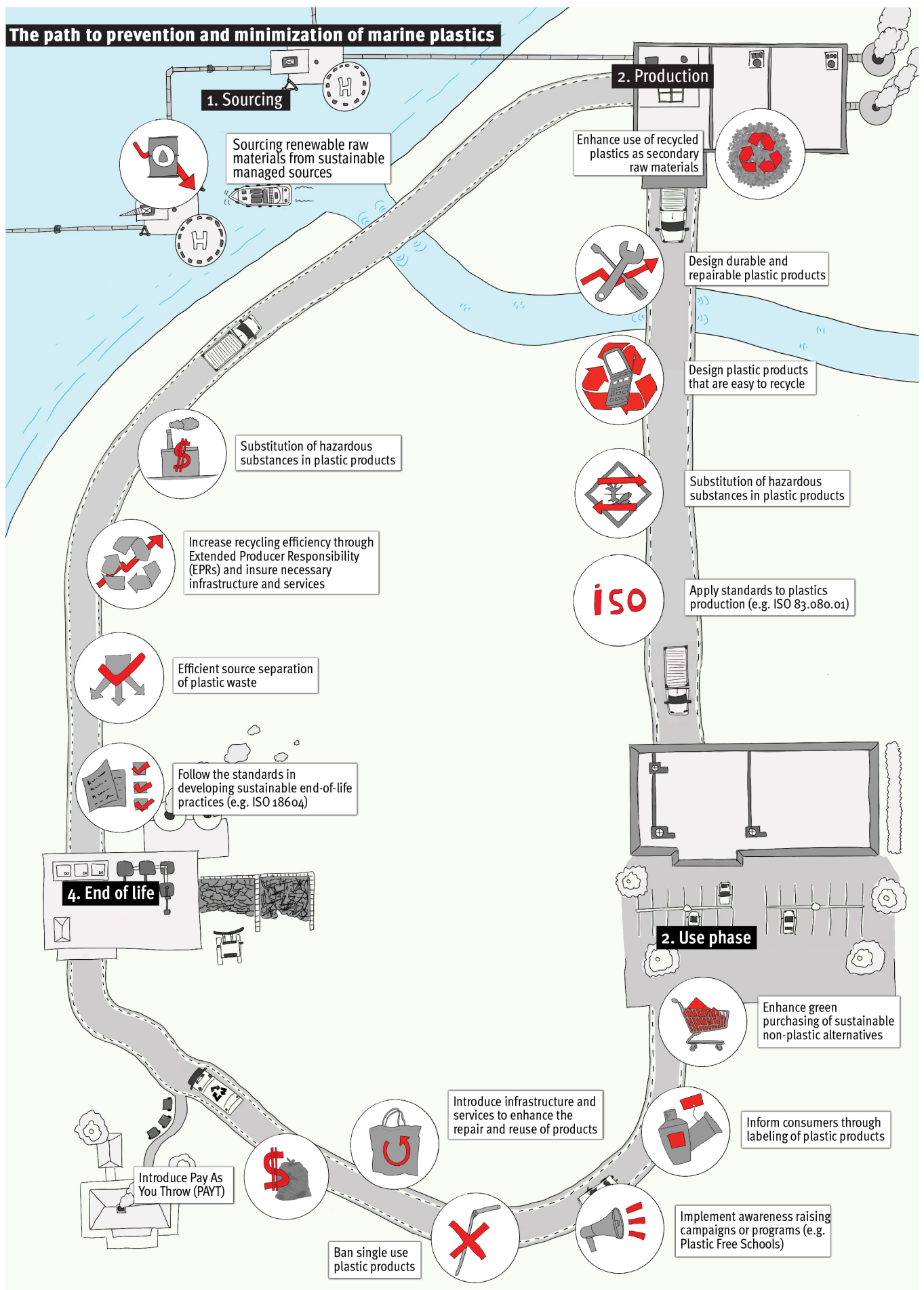


Technology strategies

Technology strategies involve the development and use of specific technologies that aim at preventing and minimizing waste generation, e.g. when manufacturing new products or when providing services to consumers. Product design heavily influences a product’s life cycle impacts and is crucial for connecting different stages along the life cycle to reduce plastic waste. According to the Ellen MacArthur Foundation, in the absence of redesign, about 30 percent of plastic packaging waste will never be reused or recovered (Ellen MacArthur Foundation 2017). Product designers need to explore innovative practices and approaches to the design of plastic materials for circular use, and manufacturers of plastic products need to envision the whole lifespan of plastics. They can achieve this by using practices for better recyclability and recoverability, extending product lifetimes and allowing for reuse and repair by enhancing product durability, modularity and repairability (ECOS 2019).

For more information, please visit: <http://www.basel.int/>

Figure 2: Prevention & minimization of plastic across the life cycle





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