

TACKLING THE PLASTIC PROBLEM

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

File photo of the port of Durban swamped by tonnes of debris, mostly plastic and wood. | Photo Credit: AFP

A report released by the United Nations Environment Programme (UNEP) last year estimated that emissions of plastic waste into the aquatic ecosystems may triple by 2040 if no meaningful action is taken. Thus, the UN Environment Assembly meeting in February-March 2022 may finalise a way forward for global cooperation in this regard.

Plastic products in the form of bags, bottles, etc. are convenient, but take a very long time to decompose. Increasing global consumption and low participation in recycling programmes have led to more plastic waste. This pushes us to consider plastics as a negative externality. We need to analyse the social costs of plastic consumption, which is mainly the loss of marine life. This affects the livelihoods of a major chunk of population dependent on marine life. Marine fisheries and wildlife are mainly harmed due to plastics. Thus, the size of harm is alarming.

Plastics represent an example of a consumption externality, which involves many people, rather than a production externality, which involves one or multiple firms. Consumption externality is more challenging to address, as it is difficult to differentiate the behaviour of consumers. Imposing the cost of the harm on all consumers may not yield efficient solutions. As the number of consumers is high, the cost of controlling them is also high.

A number of regions across the world have banned plastic bags. This approach promotes a sustainable environment, intergenerational equity, saves marine and wildlife ecosystems, and restores soil quality. But it also causes inconvenience for consumers, increases substitution cost, and creates unemployment shocks as it affects the production of plastics, leading to less economic activity, less income generation and finally less employment. The replacement of plastics, which are low cost, with substitutes results in deadweight loss for the economy.

Other key aspects that may be considered for global cooperation are the options if plastics are banned, the effectiveness of imposing tax and the potential problems with both these approaches. It is difficult to identify the exact tax to be imposed, which may depend on country-specific circumstances.

The environment regulation for plastics may include a 'command and control' approach, and fiscal reforms like eco-taxes or subsidies. The efficiency of such a regulation depends on its architecture — how well it is planned, designed and executed. It should be credible, transparent and predictable. A tax rate, in particular, needs to be carefully determined and should work as a deterrent. In general, the rate of tax on plastics should be higher than the cost of compliance.

Eco-taxes may be imposed in the various stages of production, consumption or disposal of plastics. Pollution due to plastics may happen during the production stage. That is the logic for imposing tax on polluting inputs, as it forces the producer to look for cleaner substitutes. Pollution also occurs during the consumption stage, and thus an eco-tax is recommended to discourage consumption. This may require the polluters or the pollution-controlling authority to install meters for recording the emission or the effluent discharged in the process of production or consumption of plastics.

Social cost should be evaluated differently in the local/regional and global contexts. While health

and hygiene are predominant considerations in the former case, climate change is the predominant consideration in the latter. Ideally, eco-tax rates on plastics ought to be equal to the marginal social cost arising from the negative externality associated with production, consumption or disposal of goods and services. This requires evaluation of damage to the environment based on scientific assessment of the adverse impacts on health, environment, etc. The eco-tax rate on plastics may thus be fixed commensurate to the marginal social cost so evaluated.

Thus, comprehensive policy measures against plastics may generally involve three complementary activities: the removal of existing taxes and subsidies that have a negative environmental impact, taking into account the different types or grades of plastics, and restructuring existing taxes in an environmentally friendly manner. There are some other suggestions too, which may be creative as also effective policy solutions to reduce the amount of plastic consumption. Those include promoting multiple use of plastics through better waste management, educating the public on the harmful use of plastics, providing subsidy for research and development activity for substitute development, appropriate disposal mechanisms and waste management and use of waste for constructive usage like roads.

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