UN environment

Technology for Environment

SINGLE-USE PLASTICS

A Roadmap for Sustainability

Fact-sheet for Policymakers

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(rev. 1)

The plastic context

Since the 1950s, the production of plastic has outpaced that of almost every other material.

World plastic production in 2015: 400 million tonnes,

36%

of which is **plastic packaging**.

Much of the plastic we produce is designed to be thrown away after being used only once (single-use or disposable).

Total **Plastic packaging waste** in 2015 : 141 million tonnes.

What happens to plastic waste?

Disposal of all plastic waste ever produced as of 2015

9% recycled

12% incinerated

79% landfills, dumps or in the environment

Problematic single-use plastics

The **most common single-use plastics** found **on beaches** are in order of magnitude, cigarette butts, plastic beverage bottles, plastic bottle caps, food wrappers, plastic grocery bags, plastic lids, straws and stirrers, and foam take-away containers.

Although there are some successful initiatives that aim to tackle other types of single-use plastics the recent drive for action by governments largely focuses on **plastic bags** and, to a certain extent, **foamed plastic products**.

Why plastic bags and Styrofoam products?

Plastic bags and foamed plastic products seem to be perceived by governments as the **most problematic single-use plastics**, given their **easily observable presence (as an eyesore) in the environment**, such as windblown bags clinging onto fences or trees or floating in rivers.

Foamed plastic is used to produce food containers as it is rigid, lightweight, and has good insulation properties

1-5 trillion
plastics bags are used worldwide each year.

Some of the characteristics that make them **commercially successful** – price, durability and resistance - also contribute to making them **environmentally unsound** (when mismanaged) and difficult to recycle.

Impacts of mismanaged single-use plastics

Cost of inaction: If we don't improve our **consumption patterns** and **waste management practices**, **by 2050** there will be around **12 million metric tonnes of plastic litter** in landfills and in the environment.

Environmental Impacts

- Contaminates **soil** and **water**
- Choke waterways and exacerbate **natural disasters**
- By 2050, an estimated 99% of **seabirds** will have **ingested plastic**

Economic Impacts

- Cause **economic loss** in tourism, fishing and shipping industries
- High **cost of transport** to centralized plant of lightweight foamed plastics due to difficulty in recycling at local plants
- **Future costs of removal** of accumulated plastic litter in the environment

Health Impacts

- Block **sewage systems** and provide breeding grounds for mosquitoes, raising the risk of **malaria** transmission
- Release **toxic chemicals** and **emissions** if burned Welfare losses (visual pollution)
- **Food chain** contamination

Priority actions to minimize single-use plastics

1 IMPROVE WASTE MANAGEMENT SYSTEMS

Segregation of waste at sources: plastics, organic, metals, paper, etc. ▶ Effective collection of the segregated waste, transport and safe storage ▶ Cost-effective recycling of materials (including plastics) ▶ Less landfilling and dumping in the environment

2 PROMOTE ECO-FRIENDLY ALTERNATIVES TO PHASE OUT SINGLE-USE PLASTICS

Introduce Economic Incentives including tax rebates, research and development funds, technology incubation support, public-private partnerships

Support projects to upscale or recycle single-use items transforming potential wastes into a resource

Stimulate creation of micro-enterprises to drive job creation and economic growth

3 EDUCATE CONSUMERS TO MAKE ENVIRONMENTALLY FRIENDLY CHOICES

School education incorporated in curriculums

Awareness campaigns

Public pressure to drive public and private sector decisions

4 ENABLE VOLUNTARY REDUCTION STRATEGIES

Reduction strategies can lead to fostering the understandings of people, without the forced sudden change.

Promotion and adoption of **reusable bags**, as alternatives to plastic bags

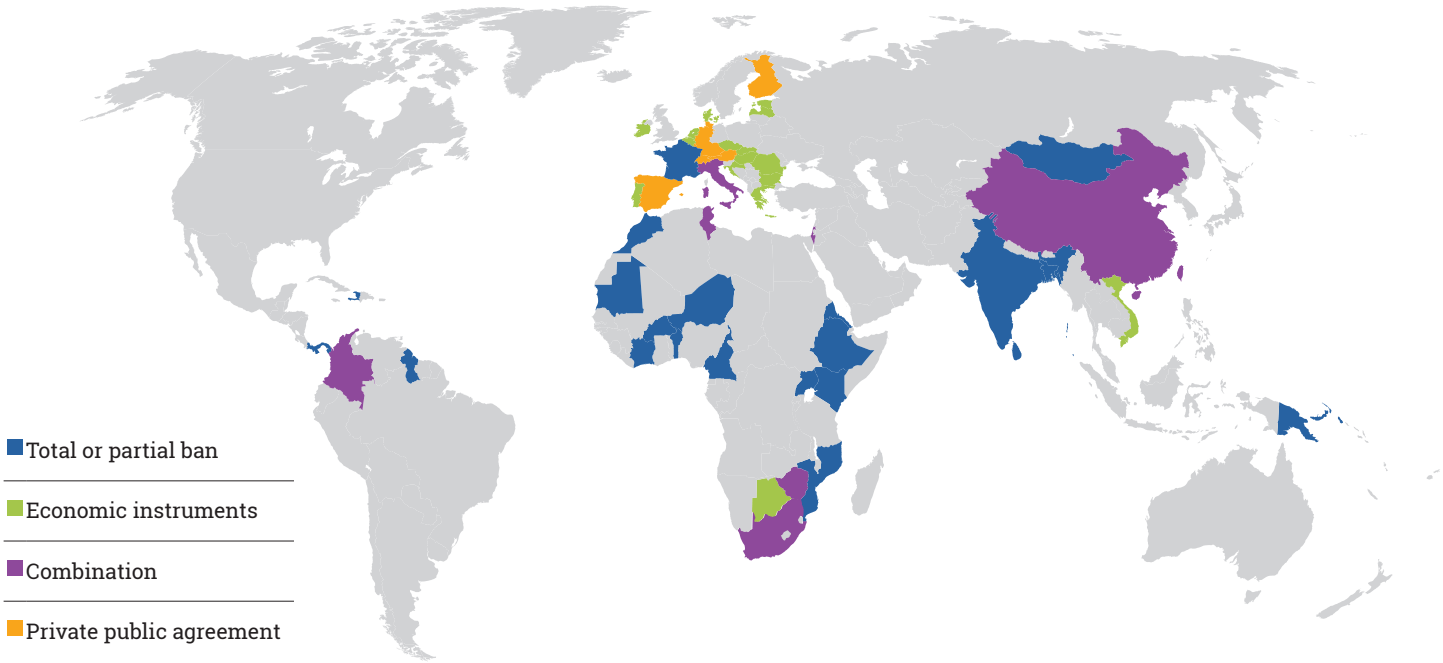
Voluntary agreements between government and retailers/producers

Existence of the raised social awareness and the public pressure would be a pre-condition for the effective reduction strategies.

5 BAN OR INTRODUCE LEVIES ON THE USE AND SALE OF SINGLE-USE PLASTIC ITEMS

Example of policy tools			
Regulatory instruments	Ban		
Economic instruments	Levy on suppliers	Levy on retailers	Levy on consumers
Combination of Regulatory and Economic instruments	Ban and levy	Extended Producer Responsibility	

National level plastic bag bans and Styrofoam regulations



Estimated number of new regulations on single-use plastics entering into force at the national level worldwide

Number of regulations on plastic bags, Styrofoam and other plastic utensils that entered into force

No to little impact
20%

Reduced consumption or less pollution
30%

No data on impact
50%

Impact of national bans and levies on plastic bags
(based on more than 60 countries experience)

What about biodegradable plastic items?

Many governments outlawed conventional plastic bags, **allowing** only the use and production of **"biodegradable" bags**.

Better waste management systems to limit leakage and damage to the environment is as relevant for fossil-fuel based plastics than for biodegradable plastics.

"Biodegradable" plastic items often **do not degrade automatically in the environment** and especially not in the ocean. They **require exposure to prolonged high temperatures**, above 50°C. Such conditions are met in incineration plants, but very rarely in the environment.

Case studies in the publication

EUROPE:

Ireland (levy on consumers)

Austria (voluntary public-private agreement)

AFRICA:

Rwanda (total plastic bag ban)

South Africa (combined ban and levy on retailers)

Kenya (punitive total ban)

ASIA:

China (national and provincial bans and levies)

Bangladesh (how social pressure and disaster management can lead to banning)

India (public action as driver of change)

AMERICAS:

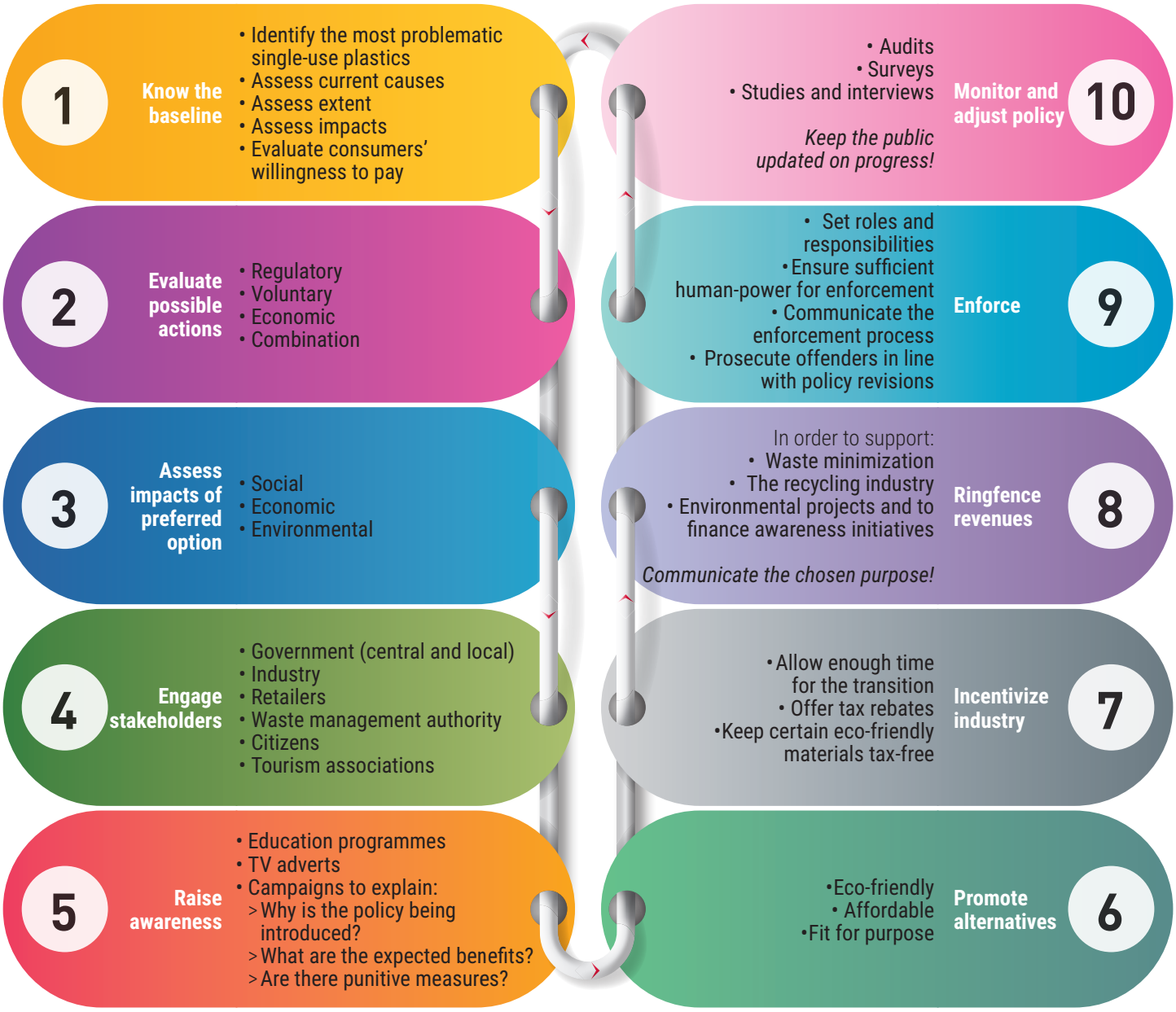
New York City (Styrofoam ban)

Costa Rica (total single-use plastic ban)

Bans in the **Caribbean Region** (Antigua and Barbuda, Aruba, Bay Islands Honduras)

Roadmap for policymakers

The 10 steps to consider when introducing bans or levies on single-use plastics



Transitioning to more eco-friendly alternatives can be a lengthy process. In the meantime, strengthening circular thinking and waste management systems can successfully help in reducing plastics pollution

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