

ACCEL Year in Review Conference

Designing an International Agreement on Marine Plastic Pollution

Tim Stephens



The Marine Plastic Problem

- Between 5 and 12 million tonnes of plastic added to oceans annually (Jambeck et al, 2015)
- Most from land-based sources; also significant contribution from shipping and fishing (e.g. discarded nets)
- Plastic pollution takes many forms from industrial waste to litter to discarded fishing gear
- A growing problem globally and in Australia (see Senate Standing Committee on Environment and Communications, Toxic Tide: The Threat of Marine Plastic, April 2016)

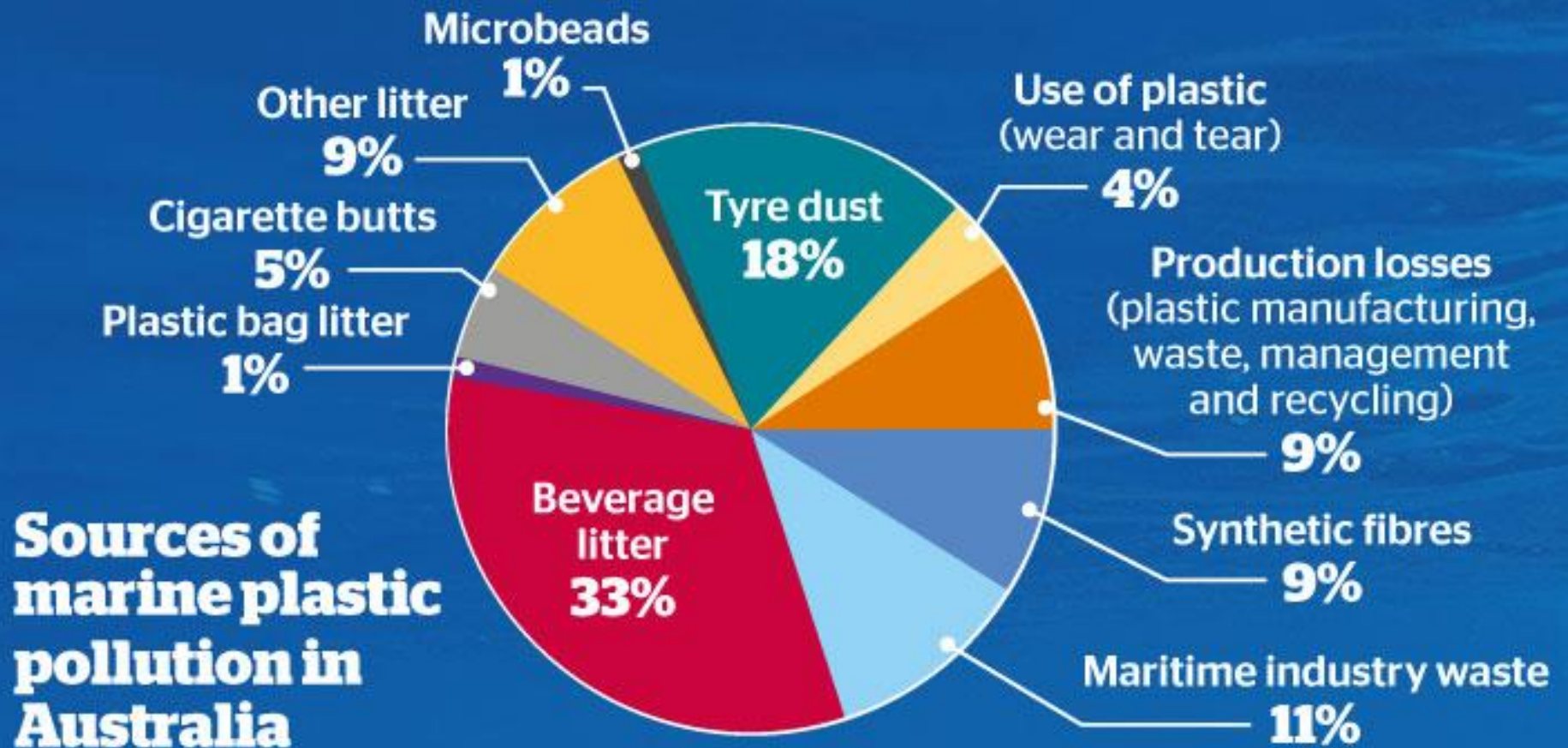


The Marine Plastic Problem



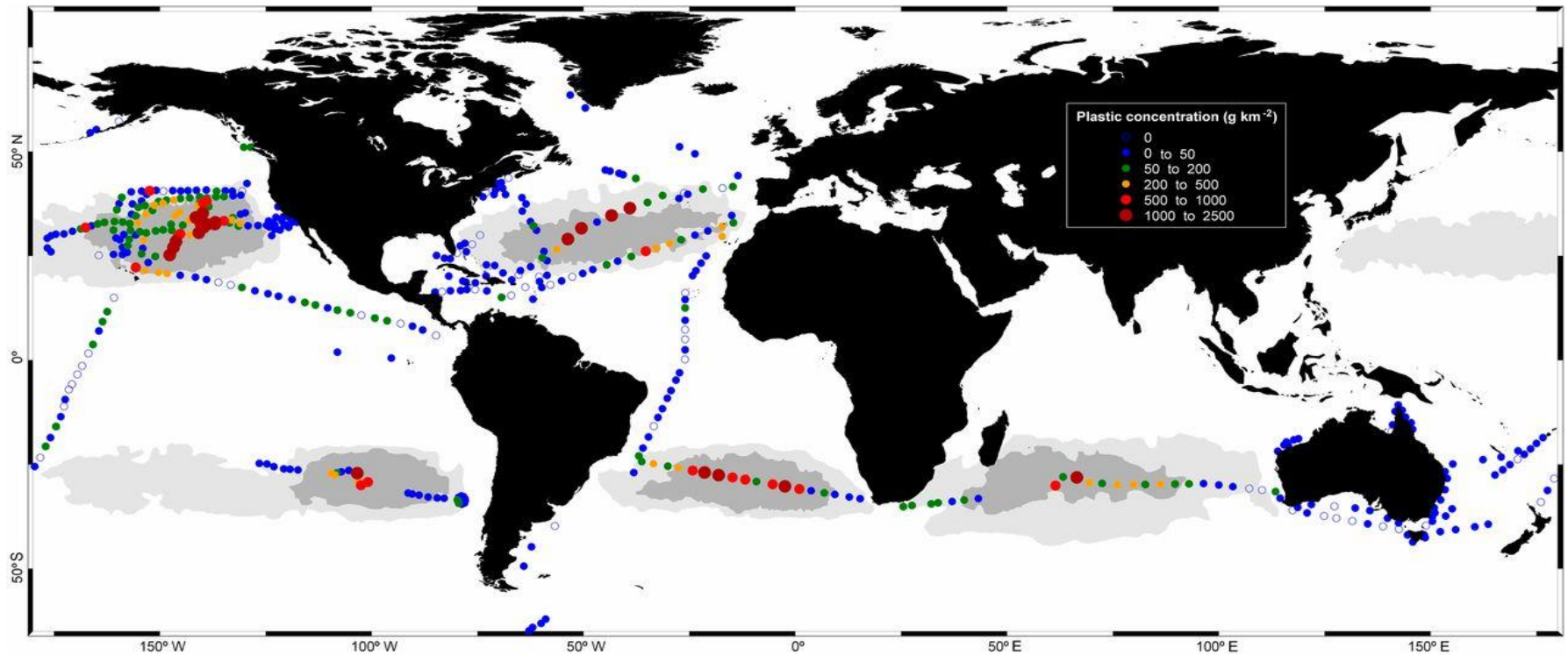
- Marine plastics sink, float, or remain in suspension, can break down into micro-plastics, can be transported significant distances and can accumulate in 'garbage patches' in ocean gyres (Cózar et al, 2014)
- Marine species impacts include entanglement and ingestion
- Microplastics and the chemicals they contain can impair biological function and affect reproduction and development (Borelle et al, 2017)
- Regional, national and subnational solutions are inadequate (Borelle et al, 2017; Haward, 2018)





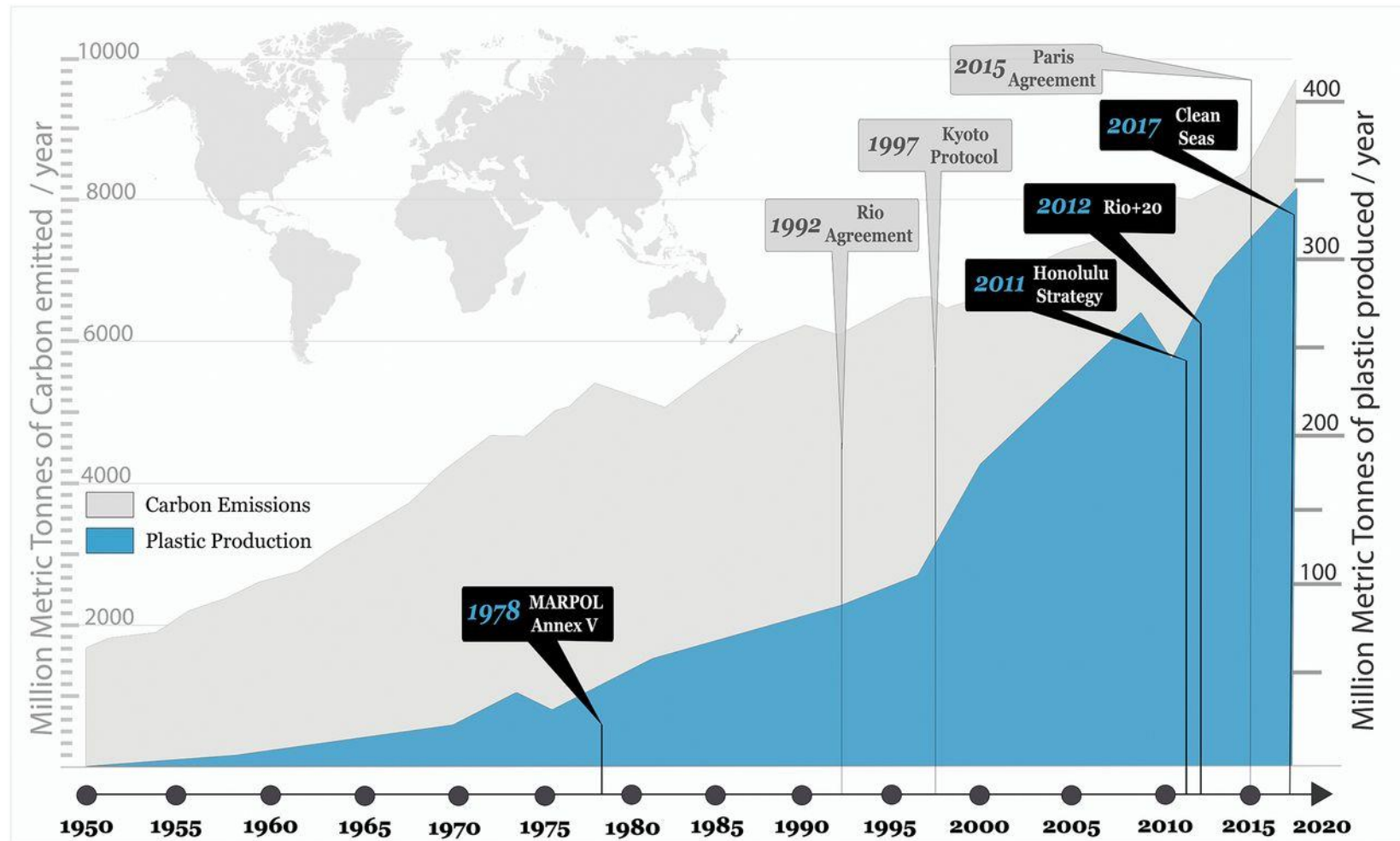
Source: Sydney Morning Herald, 17 February 2016

Concentrations of plastic debris in surface waters of the global ocean.



Andrés Cózar et al. PNAS 2014;111:10239-10244

The graph compares global carbon emissions (data from ref. 20) with plastic production (21); ratification of international policy interventions are also noted.



Stephanie B. Borrelle et al. PNAS 2017;114:9994-9997

Existing International Legal Framework

- 1982 United Nations Convention on the Law of the Sea (UNCLOS)
 - Arts 192, 194, 207, 210, 213 and 216
- 1973/1978 International Convention for the Prevention of Pollution from Ships (MARPOL)
 - Pollution from vessel operations
 - Annex V, Regs for the Prevention of Pollution by Garbage from Ships prohibits disposal of plastics at sea (150 states)
 - 2017 Guidelines for Implementation of Annex V



Existing International Legal Framework



- 1972 Protocol on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and the 1996 Protocol (London Convention/Protocol)
 - Prohibits dumping of plastics at sea
- Regional Seas Programme (e.g. Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) and its Protocols)

The Existing International Legal Framework

Focus of Current Regime

- Prohibition on disposal of plastics anywhere at sea from merchant, fishing and leisure vessels
- Prohibition of sea dumping of plastics
- Soft-law instruments for plastic waste management (e.g. UNEP Clean Seas campaign)

Gaps in Current Regime

- Enforcement
- Port-reception facilities
- Aquaculture industry poorly regulated
- No regulation of land-based sources of marine plastics (i.e. 80% of the problem)
- No regulation or limits on plastic production
- Limited regulation of harmful chemicals in plastics

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Plastics in the Marine Environment: Legal Approaches for International Action

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Serious problems caused by the presence of plastics and other synthetic materials in the marine environment are well demonstrated. Legal regimes exist to address those problems internationally and regionally through the Law of the Sea Convention, the London Dumping Convention, an international agreement on vessel-source pollution, and regional conventions. This paper describes and compares those legal regimes. All provide appropriate forums for implementing specific mitigation measures and all should be fully utilized to regulate plastic pollution of the ocean.

Problems caused by plastics and other persistent synthetic materials in the marine environment have raised growing public concern (International Maritime Organization 1985a). Mounting evidence demonstrates that large numbers of marine mammals (Fowler 1985; Henderson 1985; Shaughnessy, 1980), birds (Day *et al.*, 1984), turtles (Balazs, 1984) and commercially important fish are lost as a result of entanglement in and ingestion of plastic materials. Lost or discarded fishing nets (Degange & Newby, 1980; Eisenbud, 1984; Greenpeace, 1985; High, 1985), plastic bags, plastic spherules (Carpenter *et al.*, 1972), and plastic packing straps and rings all contribute to the problem.

The marine debris problem is attributed not only to dumping of municipal waste and ship-generated garbage, but also to the discharge of materials "via inland waterways and outfalls from plants that manufacture plastic" (Wehle & Coleman, 1983). These land-based sources are more appropriately regulated by domestic or regional agreements, whereas at-sea activities can and should be regulated internationally, and complemented by stronger domestic laws. Formal guidelines for the regulation of land-based sources of marine pollution were formulated by an ad-hoc working group of experts meeting in Montreal, Canada, in April, 1985 (United Nations Environment Programme, 1985).

This paper analyses existing international legal regimes and explores ways in which the legal norms embodied in those regimes may be implemented. The paper excludes consideration of domestic laws addressing the problem. US law is discussed in detail elsewhere (Bean, 1984, 1987).

Three global international conventions are detailed below, beginning with a discussion of Law of the Sea Convention (United Nations, 1982) provisions relevant to the plastics problem. Two conventions, implemented under the auspices of the International Maritime Organization and directly addressing the problem of plastics and marine debris, are the 1978 Protocol to the International Convention for the Prevention of Pollution from Ships (1973) (MARPOL), and the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter (1972), (London Dumping Convention or LDC). Pertinent regional agreements are discussed after the global conventions.

The Law of the Sea Convention

The Law of the Sea Convention (hereinafter LOS Convention) contains several provisions prohibiting pollution of the marine environment. It deals with synthetic waste materials in general prohibitions against dumping, vessel source pollution, and land-based sources, and in those provisions that promote conservation and wise management of living resources. Although the LOS Convention does not specifically acknowledge the plastics problem (except regarding entanglement of nets in submarine cables or pipelines), it does provide encouragement for states to develop domestic laws and to address marine pollution problems internationally.

'Marine pollution' is defined under Article 5(1) as including the discharge of substances or energy which results, or is likely to result, in "such deleterious effects as harm to living resources and marine life...". A general obligation of states to protect and preserve the marine environment is set out in Article 192. Further, states are required, under Article 194(1) to take all necessary measures, individually or jointly, to prevent pollution of the marine environment from any source, using the best practicable means at their disposal and in accordance with their capabilities.

Article 207(1) requires states to account for internationally agreed upon rules, and for certain matters—including seabed activities, dumping, and vessel-source pollution—domestic laws are expressly required to be no less effective than international standards. Article 197 of the LOS Convention requires states to cooperate on a regional and global basis to establish international

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- Long history of proposals to improve the international regulation of marine debris (e.g. Lentz, 1987)
- Renewed attention to the issue as a result of scientific knowledge (e.g. GESAMP) and public awareness (e.g. ABC's *War on Waste*)
- Key to Sustainable Development Goals (SDG14 'Conserve and Sustainably Use the Oceans', SDG12 'Sustainable Consumption and Production')
- United Nations Environment Assembly, 2017 Ministerial Declaration, 'Towards a Pollution-Free Planet'

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More of the Same

- Amending/strengthening existing treaties
- New binding agreement on marine plastic pollution from land-based sources

New Treaty for Global Plastic Lifecycle (Raubenheimer and McIlgorm, 2017)

- Modelled on Montreal Protocol on Ozone Depleting Substances
- Goals: (1) reduce plastic production, (2) eliminate harmful chemicals, (3) incentivize circular material flow
- Mechanism: (1) plastics regulated as controlled substance, (2) caps on production of plastics from virgin feedstock (i.e. recycling exempted), (3) trade restrictions, (4) reporting, (5) technology transfer

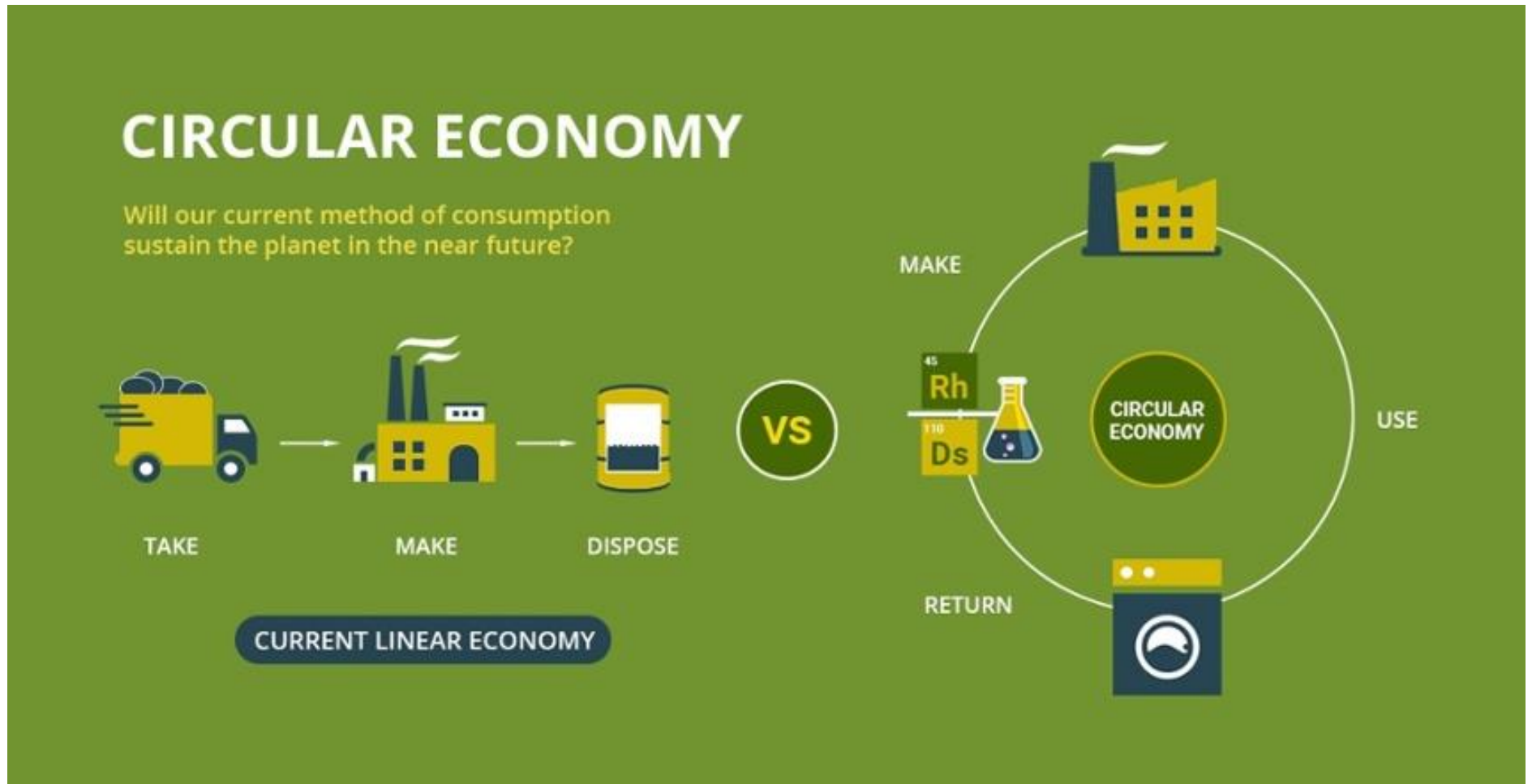
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“Applying the elements of the Montreal Protocol can shift the dominant design of policy responses from end-of-life waste management and product bans towards a circular materials flow for the plastics industry”

(Raubenheimer and McIlgorm, 2017, 327)



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Source: plasticoceans.org