


**AUTHORS:**

Lorren de Kock¹ 
Zaynab Sadan¹
Reinhardt Arp¹
Prabhat Upadhyaya¹

AFFILIATION:

¹WWF South Africa, Cape Town, South Africa

CORRESPONDENCE TO:

Lorren de Kock

EMAIL:

ldekock@wwf.org.za

HOW TO CITE:

De Kock L, Sadan Z, Arp R, Upadhyaya P. A circular economy response to plastic pollution: Current policy landscape and consumer perception. *S Afr J Sci.* 2020;116(5/6), Art. #8097, 2 pages. <https://doi.org/10.17159/sajs.2020/8097>

ARTICLE INCLUDES:

- Peer review
- Supplementary material

KEYWORDS:

plastics value chain, extended producer responsibility, accountability

PUBLISHED:

27 May 2020

A circular economy response to plastic pollution: Current policy landscape and consumer perception

The increasing volume of plastic pollution in South Africa clogs our waterways and litters our landscapes, placing an increasing strain on our land, freshwater and marine environments that provide goods and services vital for sustaining life, human well-being, and economic development. Globally, as of 2015, approximately 6300 million metric tons (MT) of plastic waste had been generated, and of that around 9% had been recycled, 12% incinerated and 79% accumulated in landfills or in the natural environment.¹ Research shows that approximately 8 MT of plastic leaks into the ocean every year.²

The ever-increasing demand for plastic has seen production grow from 5 MT in 1950 to over 380 MT in 2015, at a compound annual growth rate of 8.4%. It is predicted that production will increase by 40% between 2015 and 2030 under a business-as-usual scenario.³ This deluge of plastic exceeds the current waste collection capacity and hence the natural environment becomes the final sink for plastic pollution. The largest volume of global plastic production is used in packaging applications. It is this plastic that is leaking into the environment at an unprecedented scale.³ One of the main reasons for this is the increasing consumption of on-the-go snack products and ready-made meals which, by virtue of their application, require lightweight, smaller and durable packaging materials. Until recently, the focus has been on end-of-pipe solutions which include downstream processing of waste, such as environmental clean-ups and waste collection. This requires huge resources to be dedicated to environmental clean-ups, as well as to scaling up collection and management systems to tackle plastic waste. Whilst such interventions are important, they do not go to the root of the problem – the production and consumption systems that promote unnecessary and avoidable plastics. Owing to the complex and systemic nature of the plastic pollution, multiple interventions are needed across all stages of the plastics life cycle and value chain if we are to have meaningful impact on reducing plastic pollution.

Derived from fossil fuels, plastics contribute to climate change by releasing greenhouse gas (GHG) emissions during their production, processing and disposal.⁴ Global life-cycle GHG emissions from plastic are expected to increase by 382%, from 1.7 to 6.5 gigatons of carbon dioxide equivalent⁵ (GtCO₂e), between 2015 and 2050. This is primarily due to the push from petrochemical companies and plastic manufacturers to increase plastics production to meet the forecasted demand, with subsequent emissions from incineration.⁶

The circular economy is a 'framework for an economy that is restorative and regenerative by design'⁷ and mimics the functioning of nature. The circular economy concept provides a solution to the plastic pollution quandary by providing a way forward to decouple material consumption from economic growth, and increase the value of secondary material, ultimately decreasing waste and pollution. Transitioning to a circular economy is critical for achieving deep emissions reductions and transitioning to a low-carbon economy.⁸ In addition, reusing or recycling materials after use into a secondary resource, reduces the need for virgin resources and thus can also lower the carbon intensity of the system.

In addition to environmental benefits, the circular economy model could provide socio-economic benefits as it is expected to create approximately 45–50 million jobs globally in both the waste management and service sectors.⁹ The plastics sector is ideally poised to capture some of these employment benefits by creating new opportunities in redesigning products for circularity (ensuring they are reusable, recyclable and repairable); redesigning and implementing circular delivery models; developing infrastructure for secondary resource material recovery; and reskilling workers in the current system to take advantage of these new opportunities.

Plastic pollution is a global challenge that calls for systemic change in the way we produce, use and dispose of plastics at national and global levels. The focus needs to move away from solely end-of-pipe solutions to include systemic interventions at the level of policy and governance, as well as actions across the plastics value chain, taking local consumer perceptions into account. Plastic is a valuable material when used and managed effectively. It continues to hold economic value even after it is thrown away and therefore should be circulated within the economy. How to get to a state of circular plastic flow is the key question.

Policy landscape

Global and regional policy on plastics

At a global level, a number of international strategies and legal frameworks exist.¹⁰ However, there are shortcomings in these existing frameworks because only a limited number of countries participate; the approach to addressing plastic pollution is fragmented; and there are no compliance mechanisms, funding systems or effective implementation support architectures. As a result, assigning accountability remains a fundamental flaw in these strategies and frameworks. WWF recognises and supports the need for an effective global response to plastic pollution through a new global legally binding agreement. Such a treaty would make reducing plastic pollution a joint global undertaking, setting clear responsibilities for states and ensuring accountability for the growing production, consumption and leakage of plastics into the environment.

The United Nations Environment Assembly (UNEA) has adopted resolutions on marine litter and microplastics from its first meeting in 2014. They call for strengthening the United Nations Environment Programme's role in taking action on marine debris and microplastics in UNEA-1; establishing the Ad-Hoc Open-Ended Expert Group on Marine Litter and Microplastics in UNEA-3; and re-emphasising the issue of marine plastic litter and microplastics and acknowledging single-use plastics in UNEA-4. The resolutions also call for greater efforts at collaboration

and coordination. These resolutions are the first steps in developing a systemic understanding of plastic pollution in order to inform collective global action going forward.

The African Ministerial Conference on the Environment (AMCEN) held in Durban, South Africa, in November 2019 was crucial in emphasising the need to address plastic pollution. All 54 member states supported a declaration calling for global action on plastic pollution and suggested the possibility of exploring a new global agreement. With Minister Creecy President of AMCEN until 2021, South Africa can be instrumental in leading other African environmental ministers to take a strong position on plastic pollution. African governments have now joined the Nordic, Caribbean, South East Asian and Pacific states in their call for strong global action on plastic pollution.

National and sub-national policy

South Africa already has some regulatory and economic instruments in place, such as the ban and levy on plastic carrier bags (2003), regulations requiring the licencing of waste facilities, and the development of waste management standards. However, other instruments such as (dis)incentives to move away from problematic and unnecessary plastic products and packaging need to be implemented to better enable the transition to a circular plastics economy. For example, the adoption of Section 18 of the *National Waste Management Act* as a mechanism for implementing extended producer responsibility. The proposed landfill taxation is commendable but constraints – such as infrastructure, capacity and accurate reporting – will need to be overcome before taking this forward. With regard to information-based instruments, a Packaging Guideline and Packaging Certification scheme is being developed through Operation Phakisa: Chemicals and Waste in consultation with industry stakeholders.

The recent emergence of global voluntary agreements, such as the national Plastic Pact network of the Ellen MacArthur Foundation, complements the policy instruments already under development in many countries. The South African Plastics Pact was launched in January 2020 and provides an appropriate platform for multi-stakeholder collaboration across the plastics value chain, while also promoting accountability in achieving 2025 targets through annual public reporting. It is to be noted that voluntary agreements on sustainability challenges, such as plastics and food waste, which are cross-sectoral in nature, need to take a multi-sector and multi-stakeholder approach in order to obtain the systemic shifts that are required to address sustainability concerns. Through the Plastics Pact, South Africa has initiated the journey to develop and implement these actions, but this will need to be complemented by policy interventions to overcome the current barriers and inertia that prevent transition to a circular plastics economy.

Owing to the complex and systemic nature of the plastics value chain, a suite of policy interventions is required at multiple levels of influence. Taking an evidence-based policy approach is critical for the transition from the current linear model to a circular plastic material flow. Appropriate policy instruments need to be deployed across the material and product life cycle of plastics, such as potential taxes on virgin material at production, targets for recycled content in products for converters and eco-modulated extended producer responsibility, amongst others. Focusing solely on end-of-pipe solutions shifts the locus of action on consumers and addresses only the symptoms, whilst it is action at all stages and in each sector that is required.

Current consumer perceptions

In 2019, WWF-SA commissioned a study to determine consumer perceptions of plastic products and packaging in South Africa. It aimed to define different segments within the local consumer market based

on attitudes and perceptions around plastic pollution, including levels of awareness about plastic pollution and perceptions of who is responsible for the current predicament.

The findings indicated that plastic pollution is ranked relatively low compared with other issues that South Africans face, such as unemployment, crime and climate change. While there has been growing awareness of the negative impacts of plastic pollution, it has not led to consistent action, due to barriers that include misinformation, disempowerment, convenience and cost. Recycling is perceived as the only action required to clean up the environment, even though only a small proportion of plastic packaging is effectively recycled in South Africa. The main incentive for the majority of consumers to recycle plastics appears to be economic gain. Interestingly, no one in the study sample mentioned reducing the consumption of plastics in order to curb leakage into the environment and reduce the increasing volumes of plastic waste that are generated.

In terms of responsibility, most survey respondents identified littering as a problem, indicating that the current narrative from industry and government, that plastic pollution is a nuisance issue, has taken hold. This makes it difficult to appreciate the wider implications of plastic pollution. However, there is consensus that consumers can have positive impacts by taking responsibility for what they buy, and that solutions lie with manufacturers, government, retailers and brand owners.

WWF views the current idea that consumers are the only ones who can take action as a flawed one, and we encourage consumers to be more vociferous in demanding accountability higher in the plastics value chain.

References

1. Geyer R, Jambeck JR, Law KL. Production, use, and fate of all plastics ever made. *Sci Adv*. 2017;3(7):25–29. <https://doi.org/10.1126/sciadv.1700782>
2. Ellen MacArthur Foundation. New economy of plastics: Catalysing action. Geneva / Isle of Wight: World Economic Forum / Ellen MacArthur Foundation; 2017. Available from: <http://www.ellenmacarthurfoundation.org/publications>
3. Hamilton A, Scheer R, Stakes T, Allan S. Solving plastic pollution through accountability. Gland: WWF; 2019. Available from: https://c402277.ssl.cf1.rackcdn.com/publications/1212/files/original/SOLVING_PLASTIC_POLLUTION_THROUGH_ACCOUNTABILITY_ENF_SINGLE.pdf?1551798060
4. Hamilton LA, Feit S, Muffett C, Kelso M. Plastic & climate: The hidden costs of plastic planet. Washington DC: Center of International Environmental Law; 2019. Available from: <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>
5. OECD Glossary of Statistical Terms. Carbon dioxide equivalent [webpage on the Internet]. No date [cited 2020 Mar 10]. Available from: <https://stats.oecd.org/glossary/detail.asp?ID=285>
6. Zheng J, Suh S. Strategies to reduce the global carbon footprint of plastics. *Nat Clim Change*. 2019;9(5):374–378. <http://dx.doi.org/10.1038/s41558-019-0459-z>
7. Ellen MacArthur Foundation. What is the circular economy? [webpage on the Internet]. No date [cited 2020 Feb 14]. Available from: <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>
8. Ellen MacArthur Foundation. Completing the picture: How the circular economy tackles climate change [webpage on the Internet]. No date [cited 2020 Feb 14]. Available from: www.ellenmacarthurfoundation.org/publications
9. International Labour Organization (ILO). World employment and social outlook 2018: Greening with jobs. Geneva: ILO; 2018. Available from: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_628654.pdf
10. Lindebjerg E. WWF Policy paper: Tackling marine plastic pollution. Gland: WWF; 2019.