

A critique of the legal and policy framework for plastic waste management in South Africa

SE Langa



orcid.org/0000-0002-5097-2102

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DEDICATION

I DEDICATE THIS TO MY CHILDREN, XOLANI, NJABULO AND LEATILE.

**"DON'T LIMIT YOURSELF TO SOMEONE ELSE'S OPINION OF YOUR
CAPABILITIES. BE YOU. DREAM, PLAN, EXECUTE!"**

DR. STEVE MARABOLI

The information used and presented in this thesis was correct and up to date on 10 December 2020 when research for this study was concluded. Any later political, social and/or legal developments have not been considered.

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ABSTRACT

Plastic has become a global scourge, with the United Nations Environment Assembly declaring plastic a “hazardous substance” in 2019. On a local level, the South African public also seems to have an unhealthy and unsustainable reliance on plastic products, particularly “single use” plastic products. With a history that shows attempts at regulating plastic bags for example, it is unclear if the state of plastic waste in South Africa is a result of the country’s not having sufficient laws and policies in place, or whether the plastic waste scourge is caused by other reasons, like regulatory gaps, for example.

The study proceeds from the premise that because of the direct link between plastic waste generation and human activity, there is more than just a legal obligation to deal with the problematic aspects of plastic waste, but one could even argue that there is a moral duty. As such, if government and industry are to meet section 24 of the Constitution’s lofty ideals of securing an environment not harmful to health and well-being, then there is a need to evaluate the extent to which the legal and policy framework on plastic waste management qualifies as “reasonable legislative and other measures” sufficient to “secure ecologically sustainable development and use of natural resources” in the country. Consequently, in an attempt to reconcile these issues, this thesis offers a critique of the national laws and policies applicable to plastic waste management

Keywords: plastic waste; plastic waste pollution; sustainable waste management; waste management

LIST OF ABBREVIATIONS AND ACCRONYMS

AU	African Union
EPR	Extended producer responsibility
IMO	International Maritime Organisation
IP & WM	Integrated pollution and waste management
NEMA	National Environmental Management Act.
NEM:ICMA	National Environmental Management: Integrated Coastal Management Act
NEM:WA	National Environmental Management: Waste Act
NWMS	National Waste Management Strategy
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern African Development Community
UNCLOS	United Nations Convention of the Law of the Sea
UNEP	United Nations Environment Programme

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CHAPTER 1

INTRODUCTION

1.1 The plastic waste context

Plastic in various forms has been found almost everywhere, including in even the unlikelyst of places. For example, marine plastic waste has been found “on the remotest of beaches; afloat in the middle of the ocean; frozen within polar ice; building up on the sea floor; and inside marine animals and sea birds.”¹ Marine waste itself is caused by both land-based and marine-related activities. On the one hand, when land-based waste management infrastructures are not functional or they are even missing, plastic waste can find its way into rivers, which then flow into oceans.² On the other hand, marine-based activities like fishing and aquaculture are themselves sources of marine pollution.³ This can be seen through dumped or disposed of fishing gear or polystyrene buoys which are employed in the aquaculture, all of which result in debris in the sea.⁴

Waste is thus everywhere, as it could be liquid, solid, gaseous or a combination of these.⁵ Because of this, the list of what possibly counts as waste is endless, with packaging materials, garden rubbish, plastic etc., all counting for waste. Given this widespread nature of waste, it is no surprise that global plastic waste statistics are alarming. Between the years 1950 and 2018 a total of six billion tonnes of plastic waste were produced, while only less than 10% and 15% of this quantity was recycled or incinerated respectively.⁶ Of the remainder of this plastic waste, the bulk has to be sent to landfill facilities, which in developing countries are few.⁷ On the marine side of the statistics, it is estimated that around eight million tonnes of plastic are discarded in the oceans

¹ Nhamo 2008 *Urban Forum* 84; Jambeck *et al.* 2018 *Marine Policy* 256; Vince and Hardesty 2017 *Restoration Ecology* 123.

² Jambeck *et al.* 2018 *Marine Policy* 257; Nhamo 2008 *Urban Forum* 84.

³ Jambeck *et al.* 2018 *Marine Policy* 257.

⁴ Disposed of or lost fishing gear is thought to account for a global estimation of around 640 000 tonnes of marine debris. See Jambeck *et al.* 2018 *Marine Policy* 257.

⁵ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26; Agyeman *et al.* 2019 *Case Studies in Construction Materials* 1.

⁶ Ayeleru *et al.* 2020 *Waste Management* 25; Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 1.

⁷ Ayeleru *et al.* 2020 *Waste Management* 25.

annually.⁸ Some statistics show an alarming figure as to the status of plastic waste and its projected impacts on the environment. For example, in 2020 it was projected that at the current rate of marine plastic pollution, there will be more plastic in the ocean than fish by the year 2050.⁹

The worst part about plastic waste is that it is deliberately manufactured to ease human life in various ways.¹⁰ We need plastic to preserve food and even for use in medical spaces, such that plastic's value to humanity is clearly evident because of its significantly low production costs.¹¹ In fact, one could even reasonably project that plastic production has significantly increased as a result of the COVID 19 crisis, simply because this crisis has required the use of plastic products like gloves and masks, all of which have plastic components and are required in almost every single nation on the planet.

COVID 19 notwithstanding, waste is generated daily: "[i]t is difficult to find human activities that do not result in the generation of waste."¹² This is certainly true of plastic waste in particular, as it is produced on a daily basis owing to its utility in daily human life. On the domestic side of the waste issue, this creates an obvious problem, as waste management must run sufficiently enough to meet the daily accumulation of waste. Consequently, if one factors in the worrisome statistic showing that more than 50% of all plastic production globally is meant for single use,¹³ and that the industry process that produces the most plastic waste is packaging,¹⁴ the plastic waste problem becomes worrisome. This is particularly so because single use plastic generally becomes waste almost immediately after use and it constitutes a significant percentage of packaging. It is because of this direct relation to human activity that there is more than just a legal

⁸ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 1.

⁹ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 1; EngineeringNews 2020 <https://www.engineeringnews.co.za/article/litter4tokens-calls-for-assistance-following-resurgence-of-plastic-nurdle-pollution-on-sa-beaches-2020-11-04>.

¹⁰ Seigné-Itoiz *et al.* 2015 *Waste Management* 557; Jambeck *et al.* 2018 *Marine Policy* 256; Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 1.

¹¹ Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 4; Masterson 2020 <https://www.weforum.org/agenda/2020/10/canada-bans-single-use-plastics/>; Mwanza and Mbohwa 2017 *Procedia Manufacturing* 649; Seigné-Itoiz *et al.* 2015 *Waste Management* 557; *Declaration of the Global Plastics Associations for Solutions on Marine Litter*, 2011.

¹² Sentime 2014 *African Geographical Review* 84.

¹³ Ayeleru *et al.* 2020 *Waste Management* 27; Nhamo 2008 *Urban Forum* 84.

¹⁴ Thornton 2020 <https://www.weforum.org/agenda/2020/12/sustainable-packaging-reduce-plastic-waste/>; UN Environment Programme 2019 <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint>.

obligation to deal with the problematic aspects of plastic waste, but one could even argue that there is a moral duty.

1.2 Waste management in South Africa

For the purposes of this study, the focus will be on municipal solid waste, a term which describes waste which is "collected by, or on behalf of municipalities, originating from households, commerce and trade, small businesses, office buildings and institutions such as schools, hospitals and government buildings."¹⁵ Municipal solid waste by itself is not an inherent problem, because when disposed of properly, it does not result in pollution.¹⁶ Consequently, waste management is an essential and crucial aspect of preventing or at least minimising the harmful effects of waste pollution. If not managed, such solid waste can be a significant contributor to global and national pollution, which, in the context of the *National Environmental Management Act* (hereafter NEMA),¹⁷ is understood to mean:¹⁸

any change in the environment caused by-

(i) substances;

(ii) radioactive or other waves; or

(iii) noise, odours, dust or heat,

emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future...

Considering this definition as well as the statistics noted above, one could argue that on a global scale, plastic waste has become a significant source of pollution. Needless to say, it will be almost impossible to eradicate waste generally,¹⁹ and this is precisely why waste should be managed prudently and with due consideration of its potential to harm the environment and human health. This is why South Africa follows an integrated pollution and waste management approach to waste management.²⁰ This approach

¹⁵ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

¹⁶ Kidd *Environmental Law* 143.

¹⁷ 107 of 1998.

¹⁸ Section 1 of the NEMA.

¹⁹ Kidd *Environmental Law* 142.

²⁰ For the meaning of an integrated pollution and waste management approach, see the discussion in Chapter 3 under heading 3.2.2.

generally considers municipal waste management in general and does not single out plastic waste management for instance. However, given the global nature of plastic waste, and the fact that plastic waste is becoming the subject of separate international deliberations (as opposed to being deliberated as part of waste in general),²¹ it is necessary to particularly focus on plastic waste and how it is managed in South Africa.

1.3 Plastic waste in South Africa

Plastic generally has an established space in South African society. In 2012 it was estimated that South Africa produced over eight billion tonnes of plastic bags annually.²² In 2014 South Africa was estimated to produce annual waste to about 1.4 million tonnes, while the recycled amount was just under 0.32 million tonnes and plastic waste sent to landfills totalled just 1.08 million tonnes. This clearly shows the extent to which South Africa has an “unhealthy” connection with plastic. This connection, however, also has economic and socio-economic implications. For example, in 2016 alone plastic products were estimated to have contributed up to R76 billion to the economy and employed around 60 000 people.²³ Statistics suggest that each South African uses between 30 and 40 kilograms of plastic annually.²⁴ That is an alarming quantity, such that in 2019 the Minister of Forestry, Fisheries and the Environment, Barbara Creecy, is reported to have stated that “[o]ur ancestors left us Mapungubwe, Great Zimbabwe and the Acropolis. But what are we leaving our children? Plastic straws!”²⁵ That the Minister would say this in 2019, when in 2003 the country tried a plastic bag ban, for example,²⁶ shows that there might be issues related to the management of plastic waste in South Africa. Worse still, in 2017 there was the Kwa-Zulu Natal coastline nurdle disaster, which saw 49 tonnes of nurdles spilling into the sea. The full consequences of this spillage are not fully known.²⁷

²¹ See the discussion in Chapter 2 under heading 2.3.2.

²² Ayeleru *et al.* 2020 *Waste Management* 30.

²³ de Lange 2019 <https://www.news24.com/citypress/sponsored/plastic-the-worlds-silent-killer-20191202>.

²⁴ Alfreds 2018 <https://www.news24.com/amp/news24/green/news/heres-how-much-plastic-every-south-african-uses-and-the-number-is-shocking-20181004>.

²⁵ de Lange 2019 <https://www.news24.com/citypress/sponsored/plastic-the-worlds-silent-killer-20191202>.

²⁶ See the discussion in Chapter 4 under section 4.1.

²⁷ Nurdles are plastic pellets which are used to manufacture and produce a variety of plastic products.

There is thus a link between improper waste management on the one hand and detrimental impacts to the environment and human health on the other.²⁸ Globally it is already known that plastic waste is a menace on both land and marine resources. Scholarship has shown, however, that despite the known menace of plastic waste, municipal solid waste, of which plastic waste forms a part, is one of the most neglected areas pertaining to urban development.²⁹ This much is true when the rate of population growth and urbanisation is taken into context.³⁰ Consequently, with the projections that Africa is going to be the biggest contributor to population growth through to 2050,³¹ and with plastic use continuously on the rise, there is merit in analysing and critiquing the law and policy³² of plastic waste management in South Africa. This endeavour certainly falls within the ambit of reviewing the extent to which the state and industry are meeting the dictates of section 24 of the Constitution of the Republic of South Africa, 1996 (the Constitution):

Everyone has the right-

- a) to an environment that is not harmful to their health or well-being; and
- b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
 - i. *prevent pollution and ecological degradation;*
 - ii. *promote conservation; and*
 - iii. *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*³³

If government and industry are to meet section 24's lofty ideals of securing an environment not harmful to health and well-being, then there is a need to evaluate the extent to which the law and policy framework on plastic waste management qualifies as

²⁸ Bosman, Alberts and Roos "Integrated Waste Management" 1055.

²⁹ Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 1; Mwanza and Mbohwa 2017 *Procedia Manufacturing* 649.

³⁰ Jambeck *et al.* 2018 *Marine Policy* 257; Mwanza and Mbohwa 2017 *Procedia Manufacturing* 654; Ayeleru *et al.* 2020 *Waste Management* 26; *Khanyisa Community Development Organisation and Others v Director: Development Management: Region 2, Western Cape Department of Local Government, Environmental Affairs and Development and Another* [2020] 2 All SA 485 (WCC) (5 March 2020), para 91.

³¹ Sentime 2014 *African Geographical Review* 81; Ayeleru *et al.* 2020 *Waste Management* 29.

³² Jambeck *et al.* 2018 *Marine Policy* 257.

³³ Section 85(2)(b) of the Constitution states that the "[t]he President exercises the executive authority, together with the other members of the Cabinet, by - . . . (b) developing and implementing national policy." See also the case of *Electronic Media Network Limited v e.tv (Pty) Limited* 017 (9) BCLR 1108 (CC), where policy is considered to at times binding force of law.

³³ Own emphasis.

“reasonable legislative and other measures” sufficient to “secure ecologically sustainable development and use of natural resources” in the country.³⁴

1.4 Research question

This research consequently poses the following question: *How and to what extent does the legal and policy framework for plastic waste management assist in reducing plastic waste in South Africa?*

1.5 Objectives of the study

The primary objective of this study is to evaluate how and the extent to which the policy and legal framework for plastic waste management sufficiently assists in the reduction of plastic waste in South Africa. The secondary objectives, upon which the division of this mini-dissertation into chapters is based, include:

- Outlining the problematic nature of plastic, and from a generalised perspective, outlining the international policy and legal framework for plastic waste regulation (Chapter 2);
- In view of the structure (if any) of the international policy and legal framework for plastic waste management, to outline the legal and policy framework for plastic waste management in South Africa (Chapter 3);
- To review if the policy and legal framework for plastic waste management is sufficient to support efforts to reduce plastic waste in South Africa through an analysis of some practical government- and industry-led efforts to address plastic waste management issues (Chapter 4);

³⁴ The Constitutional Court in the case of *Government of the Republic of South Africa and Others v Irene Grootboom and Others* 2001 (1) SA 46, a connection was made between law and policy as well as what reasonable and legislative measures could mean: “[t]he state is required to take reasonable legislative *and* other measures. Legislative measures by themselves are not likely to constitute constitutional compliance. Mere legislation is not enough. The state is obliged to act to achieve the intended result, and the legislative measures will invariably have to be supported by appropriate, well-directed policies and programmes implemented by the executive. These policies and programmes must be reasonable both in their conception and their implementation. The formulation of a programme is only the first stage in meeting the state’s obligations. The programme must also be reasonably implemented. An otherwise reasonable programme that is not implemented reasonably will not constitute compliance with the state’s obligations”, para 42.

- Against the understanding of the problematic nature of plastic waste, to establish how the regulatory framework is structured, and how efforts to address plastic waste have performed in practice; to offer final thoughts on the state of plastic waste management in South Africa (Chapter 5).

1.6 Scope of study

Waste management is a complex system that is wide and varied. As a result, this mini-dissertation is limited to the framework of the regulatory aspects of plastic waste. How such regulations occur and the technical descriptions related thereto are not considered. Examples of aspects directly not covered are issues of the technicalities of landfills and recycling. Further, the discussion does not turn to the work of municipalities, as the success of the work of municipalities could arguably benefit from an elaborate and clear national framework for waste management. Lastly, the discussion does not offer any comparative perspective, as the rationale for the discussion is to evaluate the extent to which South Africa fulfils its international obligations of managing waste within its borders, much in line with a *lex lata* approach.

1.7 Research methodology

Legal measures, policy formulation and choices in relation to waste and pollution are critical to the whole waste management process.³⁵ In determining how successful laws and policies could be, such laws and policies have to be clearly spelt out, and their effectiveness tested against efforts stemming from such laws and policies. Consequently, this research will be a desktop-based study, making use of document analysis of the said laws and policies. Primary sources including South African constitutional text, legislative and policy documents as well as case law (where necessary) will be consulted. In addition, international legal frameworks on plastic waste management will be consulted with a view to establishing a possible benchmark with which to analyse the South African legal and policy framework. The study will also consult credible secondary sources including books, articles, credible website sources and any other relevant materials.

³⁵ Hasson, Leiman and Visser 2007 *South African Journal of Economics* 66.

1.8 Chapter outline

The study takes the following structure:

1. Introduction.
2. The international plastic waste legal and policy framework.
3. The South African legal and policy framework on plastic waste management.
4. A critique of plastic waste management in practice.
5. Summary, recommendations and conclusion.

CHAPTER 2

THE INTERNATIONAL PLASTIC WASTE LEGAL AND POLICY FRAMEWORK

2.1 Introduction

Statistics have shown that Africa is projected to have the biggest increase in population growth by 2050.³⁶ With population growth there is bound to be an increase in manufacturing and other activities in order to cater for the increase in population. This has obvious consequences for the natural resources of the continent. What could make that worse, however, could be continued pollution as a result of plastic waste. As it stands, it is believed that the continent generally does not have sufficient infrastructure to manage waste, yet if the continent will grow, the measures and infrastructures set to manage waste must be proportional to such population growth.³⁷ The problem, however, as is shown in the literature, is that with population growth and a consequent increase in informal settlements, the priorities of governments generally shift to the delivery of other services like sanitation and electricity in order to cater for such rapid growth.³⁸ This is why proper and clear waste management frameworks are crucial in African states.

When one considers Africa and its developing continent status, for example, the potential of plastic waste to significantly hamper economic progress is high:

Plastic waste presents not only an environmental issue for African countries but also a major socio-economic development challenge which impacts biodiversity, infrastructure, tourism and fisheries livelihoods.³⁹

Consequently, the point of departure for this chapter is that a brief overview of some of the international regulatory frameworks on waste could set the contextual background necessitating a discussion of how plastic waste is regulated or addressed in South Africa.

³⁶ Ayeleru *et al.* 2020 *Waste Management* 26; Jambeck *et al.* 2018 *Marine Policy* 257.

³⁷ *Khanyisa Community Development Organisation and Others v Director: Development Management: Region 2, Western Cape Department of Local Government, Environmental Affairs and Development and Another* [2020] 2 All SA 485 (WCC) (5 March 2020), para 91.

³⁸ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 2; Ayeleru *et al.* 2020 *Waste Management* 29.

³⁹ Mwanza and Mbohwa 2017 *Procedia Manufacturing* 654; Ayeleru *et al.* 2020 *Waste Management* 27.

³⁹ Jambeck *et al.* 2018 *Marine Policy* 257.

It is against this point of departure that this chapter seeks to answer the question: *What are the impacts of plastics waste generally and how are plastic waste concerns addressed globally?* This question is answered by a discussion of the following aspects:

- i. the impacts of plastic waste;⁴⁰
- ii. a generic overview of the international regulatory framework applicable to plastic waste;⁴¹
- iii. generic African regional level initiatives to manage and reduce plastic waste; and⁴²
- iv. an example of global industry-led initiatives in addressing plastic waste management.⁴³

2.2 The impacts of plastic waste

The plastic waste problem is a growing phenomenon which is not limited to local borders. This is particularly apparent when consideration is given to marine waste. In international waters, plastic is moved by winds or currents.⁴⁴ This is why it is important to manage waste from its source, which is usually within local borders. This necessity is accentuated, however, by a recognition that the impacts of plastic waste are widespread and that such impacts can be either direct or indirect. In view of this, the discussion that follows will briefly explain some of these impacts as they could possibly manifest on land and land-based resources, marine life and people.

2.2.1 The impacts of plastic waste on land

Poor efforts to manage waste generated by the general public could result in indirect negative impacts on the environment. Perhaps the most obvious of plastic waste consequences is that it causes air, soil and ground water pollution.⁴⁵ To be sure, when plastic is burnt, this process can release gases into the atmosphere, and when plastic is

⁴⁰ Section 2.2.

⁴¹ Section 2.3.

⁴² Section 2.4.

⁴³ Section 2.5.

⁴⁴ Eriksen *et al.* 2014 *PLoS ONE* 10; Vince and Hardesty 2017 *Restoration Ecology* 123

⁴⁵ Ayeleru *et al.* 2020 *Waste Management* 27; Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 3.

illegally disposed of on lands not designated for waste (or even designated lands like landfill sites), it then poses a risk to the general land⁴⁶ itself (chemical spillages/leaches into the soil as a result of the burning or degrading process) and animals that potentially feed on such dumpsites. In Kenya for example, a Justice of the Environment and Land Court of Kenya in 2017's *African Centre for Rights and Governance (ACRAG) & 3 others v Municipal Council of Naivasha*,⁴⁷ was scathing in describing the status of a dumpsite and the threats it could pose:

I went all round the dumpsite and also ventured inside the dumpsite. I am unable to find the proper words to express what I saw at the dumpsite. Maybe 'shocking' comes close, but does not quite express my impression of the dump-site. One has to see for themselves the deplorable state of the site to appreciate just how bad it is. The dumpsite is an open surface dump and not a landfill. Well, as one would expect of any dumpsite, there is of course lots of garbage. At the middle of the suit land is where the main dumping is done. That is not to say that there is no dumping in the rest of the land; it is only that a lot of the garbage is at the core. There is still a lot of garbage outside this core. I saw a dog at the dumpsite scavenging. You will not believe it, but there were cows having their fill both in and around the dumpsite. Need I say that these are the same cows that will tomorrow be slaughtered and their meat put on the table to be consumed by people.

It seems then that plastic waste can at times be so obvious and graphic that the internet is replete with evidence of landfills with plastic spread across large tracts of land.⁴⁸ Ultimately, the impacts of plastic pollution are vast enough to disturb the natural ecosystem and the life it supports on land. This includes animals and plant life, which at times are not even useful to humans for sustenance.

2.2.2 The impacts of plastic waste on marine life

Plastic is generally known to last longer in the process of degrading, as some have shown that plastic could last as much as up to 1500 years before it actually degrades.⁴⁹ In dark places like the seabed, the consequence is that marine life is inevitably affected by plastic waste.⁵⁰ It is believed that over 700 species of marine life interact with marine waste,

⁴⁶ Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 3; Seign -Itoiz *et al.* 2015 *Waste Management* 557; Ayeleru *et al.* 2020 *Waste Management* 29. Landfilling could specifically result in ground spillages which can in turn pollute ground water sources.

⁴⁷ Petition No 50 of 2012 [2017] eKLR, para 10

⁴⁸ Holmberg and Stripple 2019 *Waste Management* 431.

⁴⁹ Ayeleru *et al.* 2020 *Waste Management* 29; Nielsen, Holmberg and Stripple 2019 *Waste Management* 428.

⁵⁰ Seign -Itoiz *et al.* 2015 *Waste Management* 557.

often with negative results for these species.⁵¹ For example, most species that interact with marine waste will either ingest the waste or be entangled by it.⁵² In around 2008 it was estimated that up to that point more than 100 000 marine mammals and over 700 000 sea birds were dying annually as a result of marine debris-related causes.⁵³ This is because when the toxins and other related chemicals from plastic waste are ingested, they are likely to result in hormone imbalances. Needless to say, such eventuality could inevitably affect other marine animals that consume infected/affected marine life.

Perhaps the most graphic effect of plastic waste on marine life was the 2015 incident where marine biologists removed a plastic straw from a turtle. Filmed on video, one could clearly see the almost 15 centimetre long straw being removed from the turtle's nose and the turtle bleeding, while showing obvious signs of distress.⁵⁴ This was just one filmed incident, yet it is reasonable to assume that entanglements like these happen often in marine resources.⁵⁵ The simplest way to understand this issue is perhaps to admit that plastic in all its forms is foreign to marine life and waters, so that its introduction is bound to result in consequences for both marine life and the water itself.

2.2.3 The impacts of plastic waste on humans

When blown away by winds, plastic waste can become a general nuisance which affects well-being. Such blown waste can block drainage systems and affect sanitation.⁵⁶ There are also some scientific-related health consequences of plastic waste.⁵⁷ Plastic waste results in persistent organic pollutants, given that most plastic contain plasticisers and catalyst residues, products which are known to leach into the soil over time.⁵⁸

⁵¹ Vince and Hardesty 2017 *Restoration Ecology* 123.

⁵² Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 2; Eriksen *et al.* 2014 *PLoS ONE* 1; Vince and Hardesty 2017 *Restoration Ecology* 123.

⁵³ Nhamo 2008 *Urban Forum* 84.

⁵⁴ For a discussion of this and other similar recorded incidents, see Robinson and Figgner 2015 *Marine Turtle Newsletter*, available at <http://www.seaturtle.org/mtn/archives/mtn147/mtn147-3.shtml?Nocount>.

⁵⁵ The video of the plastic straw removal can be found at <https://www.youtube.com/watch?v=d2J2qdOrW44>.

⁵⁶ Holmberg and Strippel 2019 *Waste Management* 428; Eriksen *et al.* 2014 *PLoS ONE* 1; Ayeleru *et al.* 2020 *Waste Management* 25; Panda, Singh and Mishra 2010 *Renewable and Sustainable Energy Reviews* 235.

⁵⁷ A general discussion of some of these science-based health problems can be found in Ayeleru *et al.* 2020 *Waste Management* 30-31.

⁵⁸ Ayeleru *et al.* 2020 *Waste Management* 30; Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 2.

Consequently, this can have an indirect impact on human health in that such persistent organic pollutants disturb the composition of the soil, which in turn affects agricultural productivity; or they can be ingested by animals, which could then be consumed by human beings.⁵⁹ Other indirect effects are that where plastic waste accumulates, it could provide refuges for pests in the form of mosquitos, which are a natural hazard to human health.⁶⁰

Because humans and their lifestyles are tied to both land resources and marine life, the consequences of plastic waste on land and marine resources identified above inevitably affect humans in various ways.

2.3 The global efforts to address plastic waste management

It is because of the recognition of the impacts of plastic waste that efforts to manage plastic waste mushroomed internationally. This has led to a growing global consensus on the need to prevent especially marine plastic waste through proper waste management.⁶¹ In this regard, the United Nations Environment Programme (UNEP), which is the world's principal environmental organisation, observes that:⁶²

waste management requires public policy to be developed, establishing its general goals, and stipulating guiding principles and decision-making criteria to inform the process of preparing waste strategies for achieving the established goals. The general goals – or driving forces (drivers) behind the policy formulation – include the protection of public health and the environment, as well as the recovery of resource value from discarded products and waste materials.

In this context “policy” includes legally binding measures, or as UNEP itself suggests, “policy and strategies are given ‘body’ through their translation into legislation and other instruments that are to support their implementation.”⁶³ As a caveat, it should be noted that there are many frameworks that could be applicable to waste, all of which it would be unnecessary to discuss in the limited scope of this study. To this end, a key objective of this chapter is to illustrate a few relevant and applicable (where they exist) international

⁵⁹ See comments by Justice Munyao Silo in the Kenyan case of *African Centre for Rights and Governance (ACRAG) & 3 others v Municipal Council of Naivasha*, page 5; Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 2; Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 2.

⁶⁰ Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 2.

⁶¹ Jambeck *et al.* 2018 *Marine Policy* 256.

⁶² Global Waste Management Outlook, UNEP 2015, 27.

⁶³ Global Waste Management Outlook, UNEP 2015, 28.

frameworks and efforts which create a mandate for states to frame national laws and policies regulating plastic waste.

2.3.1 Marine-related plastic pollution measures

2.3.1.1 Early conventions

The *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* (London Dumping Convention),⁶⁴ is one of the first conventions dealing with marine pollution. A mention of some of its provisions is not necessary at this point, since the *International Convention for the Prevention of Pollution from Ships* (MARPOL)⁶⁵ and the Protocol to the *International Convention for the Prevention of Pollution from Ships*⁶⁶ were later on adopted to modernise the London Dumping Convention. What is interesting about these international instruments is that they do not specifically name plastic waste as a source of pollution to be regulated. It was only recently, in 2013, when the International Maritime Organisation's⁶⁷ (IMO) Marine Environmental Protection Committee adopted Annex V of MARPOL, that plastic was explicitly mentioned.⁶⁸ Under a section titled "*Regulations for the Prevention of Pollution by Garbage from Ships*", Annex V states that:⁶⁹

Except as provided in regulation 7 of this Annex, discharge into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products is prohibited.

While South Africa is party to these frameworks, as with most international conventions and laws, this legal framework needs to be domesticated before it can become applicable within a national system.⁷⁰ As a guideline it is significant, however, to the extent that there is an explicit reference to plastic. This goes to confirm that on a global level, and when it comes to marine life, plastic waste is being recognised globally as a threat to

⁶⁴ 1972.

⁶⁵ 1973.

⁶⁶ 1978.

⁶⁷ This is the main international body dealing with the use and conservation of international waters.

⁶⁸ *Amendments to the Annex of the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships*, 1973, MEPC 62/24, 2013.

⁶⁹ Regulation 3(2) of the *MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships*, MEPC 62/24

⁷⁰ Vince and Hardesty 2017 *Restoration Ecology* 124.

environmental conservation and sustainability (especially marine conservation and sustainability in this regard).

2.3.1.2 United Nations Convention on the Law of the Sea (UNCLOS)

Under the auspices of the IMO, the *United Nations Convention on the Law of the Sea*⁷¹ (UNCLOS) was signed. UNCLOS is an extensive document. Starting with definitions, UNCLOS overtly links pollution of the marine environment to human activities:

'Pollution of the marine environment' means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.⁷²

This is a wide-ranging definition which acknowledges that human activities, even when based on land, are a direct cause of marine pollution. In fact, the literature, including that of the United Nations, has noted that over 80% of marine pollution is caused by land-based activities, and plastic waste is one of the top pollutants.⁷³

UNCLOS goes on to state that marine-related activities should "be carried out in such a manner as to foster healthy development of the world economy and balanced growth of international trade", yet also notes that such activities must be conducted in a way that is in line with "sound principles of conservation" which are premised on "the avoidance of unnecessary waste".⁷⁴ Finally, UNCLOS states that laws adopted in accordance with the convention for the purposes of the "prevention, reduction and control of pollution of the marine environment" shall be enforced "by any State with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals."⁷⁵

⁷¹ 1994.

⁷² Article 1(4) of UNCLOS.

⁷³ Jambeck *et al.* 2018 *Marine Policy* 256; UN 2017 <https://www.un.org/en/chronicle/article/conference-saveourocean>.

⁷⁴ Article 150(b) of UNCLOS.

⁷⁵ Article 216(1)(c) of UNCLOS.

It seems clear that even though plastic waste is not mentioned, the need for the regulation of waste and the need for states to proactively work towards waste avoidance is a legal obligation under UNCLOS.⁷⁶

2.3.2 Land-based plastic waste-related measures

As noted earlier, land-based pollution is considered as a main source of marine pollution, but it is not explained further under UNCLOS. Surprisingly, there is no international convention that exists for the regulation of waste in general. What exists are conventions that deal with hazardous waste, the main one being the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*⁷⁷ (Basel Convention). It seems, however, that there might be a change in future in relation to how plastic is conceived of as a form of waste. Under the auspices of the UNEP, in March 2019, over 4700 delegates, ministers of environment and environmental experts from 170 UN member states, met at the Fourth UN Environment Assembly in Nairobi.⁷⁸ While they failed to reach a binding agreement on the phasing out of single use plastic by 2025 after five days of talks, the UN Environment Assembly adopted non-binding resolutions, one of which was to classify plastic as hazardous waste.⁷⁹ Till that point, plastic was not covered under the Basel Convention. Plastic has always been considered municipal solid waste. While how this resolution will fit within the Basel Convention is not yet certain, it is clear enough that the problem of plastic waste is increasingly becoming a global concern, warranting changes in the manner in which plastic waste is managed and even classified within waste systems.

2.4 Waste management in Africa

In developing countries, studies have shown that there is a correlation between waste generation and poverty: “there is a connection between standard of living and waste generation since higher income earners generate more recyclables and inorganic waste

⁷⁶ UNCLOS also finds support from in Sustainable Development Goal 14, which centres on oceans: “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”, <https://sdgs.un.org/goals/goal14>.

⁷⁷ 28 ILM 657 (1989).

⁷⁸ UN Environment Programme 2019 <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint>.

⁷⁹ UN Environment Programme 2019 <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint>.

while the low-income earners generate more organics”.⁸⁰ As a developing continent, it is therefore necessary to briefly review if at the continental level, the African Union (hereafter AU), which sits at the helm of regional regulation, has any measures in place that are dedicated to waste management in general and plastic waste management in particular. This will be followed by a brief evaluation of whether the Southern African Development Community (hereafter SADC, to which South Africa is a party) also has any frameworks in place.

2.4.1 African Union

A scan of the AU website reveals that there is not much to work with when it comes to issues of waste management.⁸¹ The mention of waste is primarily through reports that have been made in line with 2014’s *Agenda 2063: The Africa We Want*⁸² (Agenda 2063), which was adopted by the AU as the continent’s broad development vision. These official progress reports show two issues: that there are lofty goals which states should proactively pursue in order to meet the aspirations of Agenda 2063, and the envisioned goals might not be met within the stated timeframes when it comes to implementation. Concerning the first issue, in the 2015 report on the implementation of Agenda 2063 titled *First Ten-Year Implementation Plan 2014-2023*,⁸³ (hereafter First Ten-Year Implementation Plan), plastic waste is not mentioned at all. The First Ten-Year Implementation Plan, however, states that one of the aspirations to be attained by 2023 is “a prosperous Africa based on inclusive growth and sustainable development”, which aspiration is envisioned to result in improvements in standards of living.⁸⁴ As to how this could be done, the report notes that this aspiration will be partly achieved by a goal stated as follows: “Cities will be recycling at least 50% of the waste they generate.”⁸⁵ According to the report, a key indicator of how this goal can be achieved would be the development and implementation of “policies” supporting the urban waste recycling

⁸⁰ Ayeleru *et al.* 2020 *Waste Management* 26.

⁸¹ <https://au.int/en/resources/filter>.

⁸² African Union Commission, *Agenda 2063: The Africa We Want* (Addis Ababa: African Union, 2015), <https://au.int/en/agenda2063/overview>.

⁸³ The African Union Commission: *First Ten-Year Implementation Plan 2014-2023, AGENDA 2063, The Africa We Want, A Shared Strategic Framework for Inclusive Growth and Sustainable Development*, September 2015.

⁸⁴ First Ten-Year Implementation Plan, 43.

⁸⁵ First Ten-Year Implementation Plan, 43.

industry.⁸⁶ As the document itself notes, states will need to be proactive if this goal is to be met:

National Level: It is a fundamental source of the ideas for Agenda 2063 and responsible for the implementation of Agenda 2063 within its national context and also responsible for the monitoring and evaluation of both the processes and outcomes of the implementation. It is also responsible for the mobilization of the resources for the execution of the national agenda.

Accordingly, a key aspect to be considered in the next chapter would be to determine if South Africa at least has enough policies that could assist in the attainment of this goal.

On the second issue, a progress report was recently launched in February 2020, the *First Continental Report on the Implementation of Agenda 2063*,⁸⁷ and there is no mention of waste or progress in waste-related aspects at all in that document, despite the fact that waste management was projected to be increased by up to 50% in 2023, three years from the present.⁸⁸

Consequently, apart from the very ambitious goal set to be achieved by 2023, there is not much in the way of information of how this is being done. States are, however, expected to at least have sufficient policies and laws in place.

2.4.2 Southern African Development Community

The SADC is disappointingly also almost silent on aspects related to waste in general. However, like the AU the SADC also has the region's blueprint for development, the 2001 *Regional Indicative Strategic Development Plan* (RISDP).⁸⁹ This policy is premised on the need to ensure regional integration in the region. For example, the RISDP sets out a number of goals that could advance the policy. One such broad goal is covered under the umbrella term "Environment and Sustainable Development",⁹⁰ where the following is stated:

⁸⁶ First Ten-Year Implementation Plan, 51.

⁸⁷ *First Continental Report on the Implementation of Agenda 2063*, available at <https://www.nepad.org/publication/first-continental-report-implementation-of-agenda-2063>.

⁸⁸ As noted above, an improvement of waste recycling by up to 50% is a goal specifically mentioned in the *First Ten-Year Implementation Plan*, 43.

⁸⁹ Southern African Development Community: *Regional Indicative Strategic Development Plan*, 2001.

⁹⁰ RISDP, 52.

The policies of Environment and Land Management are designed to assess environmental conditions for sustainable development; reduce threats to human health, ecosystems and future development; promote sustainable development; manage shared natural resources on an equitable and sustainable basis; and accelerate regional integration and capacity building.⁹¹

To be sure, one could “read in” plastic waste aspects in this statement. For example, managing plastic waste appropriately can advance sustainable development while reducing the threats to human beings and the environment which have been identified above. Further, managing marine plastic waste appropriately could help achieve the objective of “managing shared natural resources”, as water systems are some of the shared resources in the region. This notwithstanding, while waste is not mentioned at all in this overall goal, there are indicators through which the goal could be achieved. A reading of the RISDP reveals that:

To achieve these objectives, measures have been taken to monitor and guide all sectors on the implementation of environmental policies, strategies and programmes; promote sound environmental management through pollution control, *waste management* and environmental education; and to ensure effective implementation of multi-lateral environmental agreements and gender mainstreaming.⁹²

There is thus a recognition that proper waste management could assist in the pursuit of sustainable development. However, because the RISDP is a policy, there are no legal mechanisms to enforce any of its contents. There is an overt concession, however, that inadequate attention to waste management and pollution is a challenge hampering the implementation of the RISDP.⁹³ Consequently, the RISDP is useful to the extent that it acknowledges that states need to have policies which would facilitate the pursuit of sustainable development, of which waste management in general is one such measure states can follow.

2.5 Industry-led efforts to manage plastic waste

Society and non-governmental organisations have a role to play in environmental governance. They could, for instance, put pressure on companies, which could in turn affect a company’s reputation, if the companies indiscriminately pollute the

⁹¹ RISDP, 52.

⁹² RISDP, 52. Own emphasis.

⁹³ RISDP, 53.

environment.⁹⁴ There is thus a reputational risk associated with pollution, such that there is a possible financial benefit to companies' engaging in efforts to reduce and manage their plastic waste footprint. As a result, there have been global efforts aimed at this. An example of one such effort is the *Declaration of the Global Plastics Associations for Solutions on Marine Litter* which was signed in 2011.

As of 2020, around seventy-five plastics organisations from about forty states have signed this Declaration.⁹⁵ Interestingly enough, of all the African countries, only a South African organisation, the Plastics Federations of South Africa, signed the document in 2011. This notwithstanding, the Declaration recognises a number of important aspects related to the minimisation and management of marine plastic waste. For example, there is a recognition that public-private partnerships are necessary in preventing marine plastic debris⁹⁶ and that communities will need to be included in efforts to manage marine plastic waste, with the result that there is a need to spread knowledge around these issues.⁹⁷ As the discussion below will show, the Plastics Federations of South Africa led protests which eventually resulted in changes to a plastic bag ban initiated by the South African government.

2.6 Summary and conclusion

The discussion has shown that the impacts of plastic waste are wide-ranging, affecting the environment in all its forms as well as human life. As a result of this, there have been a few global efforts which speak to the need to regulate around issues of waste. For the most part, these international frameworks provide a generic structure. The frameworks act as identifiers of issues of concern which must be addressed by states if a specific outcome is to be achieved. States are then tasked with the actual implementation of rules related to waste management. In the area of plastic waste management specifically, there is no clear framework. This is certainly true of the AU and SADC set-up, which consists mainly of policies and visions. Regardless, this chapter has shown that there is a clear global appreciation of the problematic nature of waste in general and that the

⁹⁴ Soyapi 2020 *Potchefstroom Electronic Law Journal* 15.

⁹⁵ Marine Litter Solutions date unknown available at <https://www.marinelittersolutions.com/about-us/joint-declaration/>.

⁹⁶ Declaration 1.

⁹⁷ Declaration 4.

pursuit of sustainable development requires states to adopt laws and policies that regulate waste. In view of this, the next chapter considers the legal and policy framework for plastic waste management in South Africa.

CHAPTER 3

THE SOUTH AFRICAN LEGAL AND POLICY FRAMEWORK ON PLASTIC WASTE MANAGEMENT

3.1 Introduction

The last chapter concluded by noting that there is a mandate for states to regulate through laws and policies that facilitate waste management. South Africa also has such a mandate stemming from its Constitution. Section 24 of the Constitution creates a mandate for the state to secure an environment not harmful to well-being and health, in addition to requiring the state to prevent pollution and environmental degradation while protecting the environment for the present and future generations through “reasonable legislative and other measures”.⁹⁸ Arguably, whereas legislative measures are clear on what is expected of the state, “other measures” could imply the creation of broad policies or the state’s co-operating with the private sector in creating measures to curb pollution, even plastic waste pollution.

In view of this, and being aware of the fact that plastic pollution in South Africa is problematic, this chapter seeks to answer this question: *How and to what extent do South Africa’s legal and policy frameworks for waste management address the issue of plastic waste?* The analysis below follows a chronological order as to how the legal and policy framework has evolved. This will allow for a proper appreciation of whether there is development or regression when it comes to regulation. As a cautionary note, where appropriate, there will be longer quotes from legislation and policy in order to capture the essence of what such laws and policies state.

3.2 Waste related law and policy development in South Africa

The South African government has at different points in time produced policies, strategies and declarations that have either informed legislative developments or guided government action towards waste management. Considering that the production of plastic waste is on the rise, and with a view to determining if South Africa has sufficient

⁹⁸ Section 24(b).

laws and policies to address this, the discussion that chronologically follows outlines some of the consequential laws and policies related to waste management.

3.2.1 National Environmental Management Act

Earlier it was noted that South Africa has a constitutional environmental framework that provides environmental rights to its citizens under section 24 of the Constitution.⁹⁹ In order to concretise this provision, South Africa adopted a framework environmental law that governs and outlines South Africa's broad environmental goals: NEMA. As a framework law, NEMA sets out to provide the main framework to which any state or private activity undertaking environmental management must adhere: "environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably."¹⁰⁰ Considering the harms which plastic waste poses on human beings and the environment as alluded to earlier,¹⁰¹ this provision clearly creates a mandate for the state to ensure that development activities are "socially, environmentally and economically sustainable",¹⁰² much in line with sustainable development. The classical definition of sustainable development is that it is "development which meets the needs of the present generation without compromising the ability of future generations to meet their own needs."¹⁰³ As such, waste management must be forward looking, having a long-term vision of today's waste-related decisions.

Importantly, although NEMA is a framework law (specific environmental management Acts must be promulgated),¹⁰⁴ it makes an overt reference to waste and links it with the pursuit of sustainable development:

Sustainable development requires the consideration of all relevant factors including the following: that waste is avoided, or where it cannot be altogether avoided, minimised

⁹⁹ See section 1.3 and 3.1

¹⁰⁰ Section 2(2) of NEMA.

¹⁰¹ See discussion under 2.2.

¹⁰² Section 2(3) of NEMA.

¹⁰³ *Brundtland Report: United Nations World Commission on Environment and Development (WCED) Report on Sustainable Development* (1987), 43.

¹⁰⁴ Section 1 of NEMA.

and re-used or recycled where possible and otherwise disposed of in a responsible manner...¹⁰⁵

This provision is likely the origin of the idea of a waste hierarchy.¹⁰⁶

The last relevant aspect one can glean from NEMA is the requirement that activities must be run through integrated environmental management,¹⁰⁷ which process NEMA states would ensure, among other objectives, "that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them."¹⁰⁸ It is in the context of integrated environmental management that waste became a focus of the government, through the 2000 *White Paper on Integrated Pollution and Waste Management for South Africa* (White Paper).¹⁰⁹

3.2.2 *White Paper on Integrated Pollution and Waste Management for South Africa*

In coming up with the White Paper, the objective was to try and streamline waste management and to move away from the fragmented system that existed prior.¹¹⁰ The approach adopted by the White Paper for managing waste was integrated pollution and waste management (hereafter IP & WM). The White Paper defines integrated pollution and waste management as:

a holistic and integrated system and process of management, aimed at pollution prevention and minimisation at source, managing the impact of pollution and waste on the receiving environment and remediating damaged environments.¹¹¹

Elsewhere, some scholars consider integrated waste management to be a

process of making decisions with regard to the most sustainable manner in which to deal with *a specific type of waste*, and starts with the most appropriate classification of all substances and wastes that could potentially impact on the environment; the prevention of

¹⁰⁵ Section 4(a)(iv). This should be linked with section 28 which provides for the duty of care on all stakeholders: "(1) Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment."

¹⁰⁶ See the brief comments on waste hierarchy in section 3.2.2.

¹⁰⁷ Section 23(1).

¹⁰⁸ Section 23(2)(c).

¹⁰⁹ Department of Environmental Affairs and Tourism *White Paper on Integrated Pollution and Waste Management*, GN 227 in GG 20978 of 17 March 2000.

¹¹⁰ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

¹¹¹ White Paper, 10.

the production of waste; the hierarchical consideration of different measures and options to manage the waste....¹¹²

There is an implicit assertion in the above description that decisions have to be made when it comes to *specific types of waste*, which could imply that plastic, for example, could warrant its own waste management process. Further, it is clear from these definitions that IP & WM as a concept is understood to encompass the whole cycle of waste; in other words, the cradle to grave approach which “covers prevention, generation, collection, transportation, recycling and re-use, treatment and final disposal” of waste while focussing on waste prevention and minimisation as an ultimate goal.¹¹³

The White Paper lists a number of objectives that inform the thinking around waste management in South Africa. Specifically, the White Paper notes the objectives of waste management as being, among others:

- To prevent, reduce and manage pollution of any part of the environment due to all forms of human activity, and in particular from radioactive, toxic and other hazardous substances.
- To set targets to minimise waste generation and pollution at source and promote a hierarchy of waste management practices, namely reduction of waste at source, reuse and recycling with safe disposal as the last resort.
- To ensure the protection and proactive management of human health problems related to the environment in all forms of economic activity.¹¹⁴

Thus, we see that there is an implicit reference to a form of waste hierarchy in terms of how to deal with waste. In fact, the White Paper goes on to note a form of hierarchy: waste must be avoided, minimised and prevented; if this is not possible, waste must be recycled or reused; after this, waste must be treated before it can be disposed of.¹¹⁵ In practice, the idea is to try to manage waste at source through reducing its generation and generally reusing it, after which recycling is considered the “most environmentally sound” strategy.¹¹⁶ From this, two aspects require further brief elaboration: how waste could be disposed of, and what reuse and recycling could mean.

¹¹² Bosman, Alberts and Roos “Integrated Waste Management” 1071. Own emphasis.

¹¹³ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

¹¹⁴ White Paper, 18.

¹¹⁵ White Paper, 29.

¹¹⁶ Mwanza and Mbohwa 2017 *Procedia Manufacturing* 650.

3.2.2.1 Landfilling

Landfilling is the cheapest and most traditional method of waste disposal in the waste management hierarchy.¹¹⁷ As recently as March 2020 the South African High Court confirmed that landfills are a necessary part of an ever-growing society:¹¹⁸

Landfill sites are a very necessary part of an ever expanding society. As we endeavour to promote growth and redevelopment we necessarily increase the solid waste imprint on our fragile planet. ... The authorities accordingly ignore the effects of failing to adequately dispose of solid waste at their peril and to the detriment of all of humanity.

However, landfilling remains unsustainable as plastic waste is known to stay up to possibly 1500 years before it actually degrades.¹¹⁹ Also, according to Bosman, Alberts and Roos, the problematic nature of waste in general is that if it is disposed of on land, it is likely to come into contact with water, whether rain or groundwater.¹²⁰ Also, a consequence of landfills is that land used for such is usually unfit for industrial and residential purposes.¹²¹ For example, because Johannesburg is densely populated, there remains a challenge of finding the best lands on which to construct landfills without their posing a threat to the circumambient human population.¹²² Recycling for reuse or direct reuse are likely the better options.¹²³

3.2.2.2 Recycling

There are different versions of recycling plastic waste. The first would be primary recycling, which involves either reusing plastic rather than discarding it after use, or the production of new plastic materials through used ones.¹²⁴ The latter is usually effected through recycling facilities, where drop-off centres or buy-back centres can be used by even normal citizens. An example of this is the established practice of waste “scavenging”,

¹¹⁷ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26; Panda, Singh and Mishra 2010 *Renewable and Sustainable Energy Reviews* 236.

¹¹⁸ *Khanyisa Community Development Organisation and Others v Director: Development Management: Region 2, Western Cape Department of Local Government, Environmental Affairs and Development and Another* [2020] 2 All SA 485 (WCC) (5 March 2020), para 91.

¹¹⁹ Ayeleru *et al.* 2020 *Waste Management* 29; Nielsen, Holmberg and Strippel 2019 *Waste Management* 428.

¹²⁰ Bosman, Alberts and Roos “Integrated Waste Management” 1060.

¹²¹ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

¹²² Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

¹²³ Mwanza and Mbohwa 2017 *Procedia Manufacturing* 650.

¹²⁴ Ayeleru *et al.* 2020 *Waste Management* 29; Mwanza and Mbohwa 2017 *Procedia Manufacturing* 650.

otherwise known as waste reclamation, where members of the public pick up plastic waste from dump sites and go on to sell it to waste recycling centres.¹²⁵ However, this process is thought to reduce waste by only less than 1%.¹²⁶

In addition to primary recycling, there is also secondary recycling. This process involves mechanical recycling, in that collected plastic waste is sorted, washed, ground and finally re-melted “via extrusion techniques to fabricate secondary products with similar properties like the original materials.”¹²⁷ This allows for the production of other usable plastic materials with the same products that were once used and discarded.¹²⁸ Related to secondary recycling is also tertiary recycling. However, unlike the former, tertiary recycling involves the process of chemically using plastic waste as feedstock for the purposes of manufacturing new products.¹²⁹ The process is scientific, but without getting into such a scientific process, it can be explained as breaking down used plastic waste into its molecular structures, grouping these structures, then using them to make the same or similar materials, which will then be used for manufacturing new plastic products.¹³⁰

Returning to the discussion on the White Paper, it is clearly evident from the above that while the White Paper does not single out plastic waste, it works as a general government policy framework on waste, while also having significant outputs important for this particular discussion:

- it sets IP & WM as the governance and management model for waste in general;
- it establishes a waste hierarchy; and
- it provides the foreground for the *National Environmental Management: Waste Act* (hereafter NEM:WA), which is discussed hereunder.¹³¹

¹²⁵ *Ubisse v Enviro-fill (Pty) Ltd.* 2010 ZAGP 165 (JHC), para 5; Matete and Trois 2008 *Waste Management* 1481; Komane 2014 “Waste Reclaimers and South African Environmental Law” 1.

¹²⁶ Matete and Trois 2008 *Waste Management* 1481.

¹²⁷ Ayeleru *et al.* 2020 *Waste Management* 29.

¹²⁸ Panda, Singh and Mishra 2010 *Renewable and Sustainable Energy Reviews* 236.

¹²⁹ Mwanza and Mbohwa 2017 *Procedia Manufacturing* 650; Panda, Singh and Mishra 2010 *Renewable and Sustainable Energy Reviews* 237; Ayeleru *et al.* 2020 *Waste Management* 29.

¹³⁰ Ayeleru *et al.* 2020 *Waste Management* 29.

¹³¹ 59 of 2008.

3.2.3 Polokwane Declaration on Waste Management

In terms of chronological development, however, what followed after the White Paper was the *Polokwane Declaration on Waste Management*¹³² (Polokwane Declaration). The Polokwane Declaration was a product of the country's first national waste summit, which had been hosted in 2001 by the then Department of Environmental Affairs and Tourism. The resulting Polokwane Declaration targeted waste management in general and no mention was made of plastic waste. It is relevant, however, to the extent that one of the outcomes of the Polokwane Declaration was the pursuit of sustainable waste management,¹³³ a goal which could potentially be achieved by the reduction of plastic waste. Further, informed by the idea that South Africa must work towards reducing, re-using and recycling waste,¹³⁴ the Polokwane Declaration's goal of sustainable waste management would be achieved partly by:¹³⁵

- the reduction of waste generation and disposal by 50% in 2012, and
- a move towards zero waste to landfills by 2022.¹³⁶

These were undoubtedly lofty ideals and needless to say, the 2012 goal was not met, while the 2022 goal will likely not be met.¹³⁷ Additionally, the Polokwane Declaration stated the need for a national waste management strategy as well as a legislative and regulatory framework for waste avoidance, prevention, reduction, reuse and recycling.¹³⁸ This led to two main pieces of law dealing with marine waste and waste in general.

¹³² Polokwane, South Africa, 26-28 September 2001.

¹³³ Preamble to the Polokwane Declaration.

¹³⁴ Preamble to the Polokwane Declaration.

¹³⁵ Subsection 2 of the Polokwane Declaration.

¹³⁶ The concept of "zero waste" is described as "a 'back end' solution that maximises recycling and minimises waste", Matete and Trois 2008 *Waste Management* 1481. Elsewhere, it is described as "waste elimination at source through product design and producer responsibility, and waste reduction strategies further down the supply chain such as cleaner production, product dismantling, recycling, re-use and composting" Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26. In this sense, the concept of "zero waste" is a result-oriented goal seeking to achieve maxim recycling.

¹³⁷ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 27.

¹³⁸ Paragraph 2, subsection 2 of the Polokwane Declaration.

3.2.4 National Environmental Management: Integrated Coastal Management Act

As noted earlier, over 80% of marine waste originates from land.¹³⁹ For this reason, while there is a litany of laws that are applicable within the marine pollution framework,¹⁴⁰ most of these were direct domestication of the international marine frameworks noted in chapter 2, and are not directly relevant for this discussion. The most recent and relevant of the laws would be the 2008 *National Environmental Management: Integrated Coastal Management Act* (hereafter NEM:ICMA).¹⁴¹ Despite all the concerns about plastic waste, and NEM:ICMA's being a relatively recent law, it does not mention plastic at all. NEM:ICMA does, however, speak to waste management. Starting with the definitions, NEM:ICMA defines one of the ways through which waste in general and plastic waste is disposed of in the ocean, which is through dumping. The concept of dumping is elaborately defined as:¹⁴²

- (a) any deliberate disposal into the sea of any waste or material other than operational waste from a vessel, aircraft, platform or other man-made structure at sea;
- (b);
- (c) any storage of any waste or other material on or in the seabed, its subsoil or substrata; or
- (d) "dumping at sea does not include"
 - i. the lawful disposal at sea through sea out-fall pipelines of any waste or other material generated on land;

The other relevant parts of NEM:ICMA speak to the prohibition of waste incineration at sea.¹⁴³ It is possible that dumping and incineration can be legally done, however, one needs to apply for a permit to that effect.¹⁴⁴ There are factors which the Minister has to consider before such dumping or incineration could be allowed. Specifically, such a permit would not be allowed if it:

- (i) is likely to cause irreversible or long-lasting adverse effects that cannot satisfactorily be mitigated; (ii) would cause a serious obstacle to fishing or navigation; (iii) would prejudice the achievement of any coastal management objective contained in a coastal management

¹³⁹ Jambeck *et al.* 2018 *Marine Policy* 256; UN 2017 <https://www.un.org/en/chronicle/article/conference-saveourocean>.

¹⁴⁰ Some of these pieces of legislation include the *Marine Pollution (Prevention of Pollution from Ships) Act* 2 of 1986; the *Marine Pollution (Intervention) Act* 64 of 1987 and the *Marine Pollution (Control and Civil Liability) Act* 6 of 1981.

¹⁴¹ 24 of 2008.

¹⁴² Section 1 of the NEM:ICMA.

¹⁴³ Section 70 of the NEM:ICMA.

¹⁴⁴ Section 71 of the NEM:ICMA.

programme; (iv) would be contrary to the obligations of the Republic under international law; or (v) would be contrary to the interests of the whole community.¹⁴⁵

Plastic waste would most likely result in the factors above. The last important provision to note concerning possible dumping at sea and the management of marine waste reverts to the White Paper and the Polokwane Declaration's reference to a waste hierarchy. Schedule 2 of NEM:ICMA sets "Waste Assessment Guidelines" which are to be considered when possible dumping at sea is imminent:

Applications to dump wastes or other material must demonstrate that appropriate consideration has been given to the following hierarchy of waste management options, which implies an order of increasing environmental impact:

- (a) re-use;
- (b) off-site recycling;
- (c) destruction of hazardous constituents;
- (d) treatment to reduce or remove the hazardous constituents; and
- (e) disposal on land, into air and in water.¹⁴⁶

This framework confirms that even though plastic waste is not mentioned, the legislative framework on marine waste pollution in general is premised on the avoidance of dumping or disposing of waste at sea, unless it is necessary. A 2020 research project, however, found that when it comes to mismanaged marine waste pollution, South Africa is ranked 11th in the world out of 192 countries.¹⁴⁷ There is it seems a long way to go in dealing with proper waste management.

3.2.5 National Environmental Management: Waste Act

National Environmental Management: Waste Act (hereafter NEM:WA) is perhaps the quintessential waste management legal framework in South Africa. The preceding policy documents from the White Paper to the Polokwane Declaration alluded to the need for a comprehensive waste management legal framework, and this was achieved through NEM:WA. To start with, the preamble of NEM:WA acknowledges that poor waste¹⁴⁸

¹⁴⁵ Section 71(4)(b) of the NEM:ICMA.

¹⁴⁶ Section 5 of Schedule 2, Guidelines for the Assessment of Wastes or Other Material that may be Considered for Dumping at Sea.

¹⁴⁷ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 2.

¹⁴⁸ As the governing framework for waste management, NEM:WA defines waste as: "(a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or (b) any other substance, material or object that is not included

management could have impacts on both a local and an international level.¹⁴⁹ Further, NEM:WA states that:

sustainable development requires that the generation of waste is avoided, or where it cannot be avoided, that it is reduced, re-used, recycled or recovered and only as a last resort treated and safely disposed of.¹⁵⁰

There is thus a clear link between sustainable development and waste management. This link is further crystallised through the objectives which the Act sets for waste management:

- a) to protect health, well-being and the environment by providing reasonable measures for-
 - (i) minimising the consumption of natural resources;
 - (ii) avoiding and minimising the generation of waste;
 - (iii) reducing, re-using, recycling and recovering waste;
 - (iv) treating and safely disposing of waste as a last resort;
 - (v) preventing pollution and ecological degradation;
 - (vi) securing ecologically sustainable development while promoting justifiable economic and social development;
 - (vii) promoting and ensuring the effective delivery of waste services;
 - (viii) remediating land where contamination presents, or may present, a significant risk of harm to health or the environment; and
 - (ix) achieving integrated waste management reporting and planning;
- b) to ensure that people are aware of the impact of waste on their health, well-being and the environment;
- c) to provide for compliance with the measures set out in paragraph (a); and
- d) generally, to give effect to section 24 of the Constitution in order to secure an environment that is not harmful to health and well-being.¹⁵¹

Important issues are captured in this provision. In no exhaustive particular order of importance: first, waste is recognised as a problem that can violate the right to a healthy environment as envisioned under section 24 of the Constitution. Second, waste has an impact on the environment itself through a depletion of or effect on natural resources and lastly, the waste hierarchy is confirmed.¹⁵² The form of the waste hierarchy is also confirmed in the Act, where a direct duty is placed on the state to ensure that there are “uniform measures that seek to reduce the amount of waste that is generated and, where waste is generated, to ensure that waste is re-used, recycled and recovered in an

in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette”. Section 1 of NEM:WA.

¹⁴⁹ The preamble to NEM:WA.

¹⁵⁰ The preamble to NEM:WA.

¹⁵¹ Section 2 of NEM:WA.

¹⁵² For a full elaboration of waste hierarchy in NEM:WA, see section 17.

environmentally sound manner before being safely treated and disposed of.”¹⁵³ As to how this can be done, there are a variety of ways. Two will suffice for the purposes of this discussion. For example, the Minister is required to set up a National Waste Management Strategy (NWMS)¹⁵⁴ which “binds all organs of state in all spheres of government, and all persons if and to the extent applicable.”¹⁵⁵ This clearly implies that apart from binding the state, the NWMS, when established, also binds natural and juristic persons that are involved in waste-related issues. Also, the Minister is required to set national norms and standards which deal with issues like waste classification and waste recycling.¹⁵⁶

An interesting provision empowers the Minister to “declare a waste to be priority waste if the Minister on reasonable grounds believes that the waste poses a threat to health, well-being or the environment because of the quantity or composition of the waste.”¹⁵⁷ Given the discussion above on the general impacts of plastic and also references to how statistics on plastic waste show how it is a threat to South Africa’s land, oceans and people, this provision stands as perhaps the one crucial provision which could be used to give plastic the status it deserves as a debilitating form of waste.

As with the NEMA, NEM:WA provides for the duty of care in relation to waste management. Section 16 of the Act requires, among other requirements, that a person who has waste in their control to avoid its further generation;¹⁵⁸ “reduce, re-use, recycle and recover waste”¹⁵⁹ as well as to warn the public of the potential of waste it if relates to a person selling a product that generates waste.¹⁶⁰ Lastly, NEM:WA also provides for the submission of an industry waste management plan (hereafter IndWMP).¹⁶¹ The Minister would require this of industries that engage in activities generating waste in more

¹⁵³ Section 3 of NEM:WA.

¹⁵⁴ See the discussion immediately below, 3.3.6.

¹⁵⁵ Section 6(3) of NEM:WA.

¹⁵⁶ See generally section 7 of NEM:WA. At present standards have been set, like the existing National Domestic Waste Collection Standards, which address aspects like waste collection and drop-off centres for recyclables, among other things. The standards can be accessed at https://www.environment.gov.za/sites/default/files/gazetted_notices/nemwa59of2008_national_waste_domesticcollection_g33935_gn21_0.pdf.

¹⁵⁷ Section 14(1) of the Act.

¹⁵⁸ Section 16(1)(a).

¹⁵⁹ Section 16(1)(b).

¹⁶⁰ Section 16(1)(2).

¹⁶¹ Section 28 of NEM:WA.

than one province or where such an industry operates from multiple provinces in the country.¹⁶²

3.2.6 National Waste Management Strategy

The last instrument to be discussed is the NWMS, which is mandated in terms of S 6(1) of NEM:WA. This is a fundamental development concerning plastic. The first NWMS was adopted in 2011. This NWMS did not include provisions for plastic waste, and it set general waste-related targets to be fulfilled by 2016.¹⁶³ One of those targets included the promotion of waste minimisation, re-use, recycling and recovery, with one of the deliverables being “25% of recyclables diverted from landfill sites for re-use, recycling or recovery”.¹⁶⁴ This and the other goals were not met by 2016, such that in 2018 the Department of Environmental Affairs, Forestry and Fisheries conceded that there was a need to go back to the drawing board in order to reformulate goals that were more realistic.¹⁶⁵ It was probably this concession that led to the development of the 2020 NWMS.¹⁶⁶

Finalised in September 2020, the update on NWMS is more in line with recent trends in realising that plastic waste is a threat to both land and marine resources.¹⁶⁷ While the 2011 NWMS does not mention plastic, the 2020 version is replete with references to plastic waste. For example, in the foreword to the strategy, the Minister of Forestry, Fisheries and the Environment notes that:

The strategy comes at a time when there is growing knowledge and awareness of the environmental consequences of human activity in relation to the climate and environmental pollution. The wide spread impact of plastic packaging in our coasts, rivers and wetlands is a cause for a great concern. The NWMS 2020 outlines a strategic approach to reduce littering and illegal dumping, and to reducing the production of single-use plastics such as

¹⁶² Section 28(1) of NEM:WA. See the further discussion of IndWMP in section 4.2.2 below.

¹⁶³ 2001 NWMS, 6.

¹⁶⁴ 2001 NWMS, 6.

¹⁶⁵ Bosman, Alberts and Roos “Integrated Waste Management” 1092.

¹⁶⁶ Available at https://www.environment.gov.za/sites/default/files/docs/2020nationalwaste_managementstrategy1.pdf. It seems the document has not yet been published through the government gazette at this point.

¹⁶⁷ Interestingly, the 2020 NWMS notes that its provisions apply to organs of state, the private sector, and civil society as well as academic institutions, 2020 NWMS, 22. This signifies a clear mandate for the co-operative governance of waste management.

food wrappers, disposable cups, and straws that are currently destroying our marine habitats.¹⁶⁸

The 2020 NWMS then observes that the recycling rate of plastic waste stands at 43%, but that:

At 43%, plastic has the lowest recycling rate and is also associated with significant environmental impacts. Plastic pollution of the terrestrial, coastal and marine environment is an issue of particular concern, with much of this derived from single-use plastic used in consumer packaging.¹⁶⁹

The 2020 NWMS further recognises how plastic waste is a threat to land, the environment and people, noting that the first goal is to thus minimise “the impact of waste and especially plastic packaging in our coasts, rivers, wetlands and our human settlement environments, by amongst others, diverting waste away from landfill.”¹⁷⁰ There is thus an overt recognition that action and strategies need to be taken to arrest the issue of plastic waste pollution. Overall, however, the implementation of the 2020 NWMS can be evaluated only over time. It stands to reason, however, that there is a marked and identifiable shift in how plastic waste is being appreciated as a significant threat to the environment.

3.3 Summary and conclusion

This chapter has sought to review the state of the South African legal and policy framework on plastic waste management. The discussion demonstrated that waste management thinking in the government started with the 1998 NEMA. Various policies were then adopted, all of which recognised the importance of having an integrated approach to waste management. Such an approach, however, requires collaboration between the state and other stakeholders. This much is clear from NEM:WA, the main governing framework for waste management. Ultimately, while plastic waste is not singled out in the framework (save for under the 2020 NWMS), an argument could be made that there are sufficient mechanisms in the existing framework which could be used to ensure plastic waste is addressed. One could thus argue that the section 24 requirement that the right to a healthy environment be fulfilled through “reasonable

¹⁶⁸ 2020 NWMS, 8.

¹⁶⁹ 2020 NWMS, 12.

¹⁷⁰ 2020 NWMS, 33.

legislative and other measures”¹⁷¹ is being progressively fulfilled, at least theoretically. In what remains of the study, and for the purposes of determining if the laws as they stand have practical effect, it is necessary to review some of the mechanisms that have been specifically used to deal with plastic waste.

¹⁷¹ Section 24(b) of the Constitution.

CHAPTER 4

A CRITIQUE OF PLASTIC WASTE MANAGEMENT IN PRACTICE

4.1 Introduction

Laws need to have a practical effect, which can be evaluated only through examples of where such laws have been used. Following on from finding in the previous chapter that there are seemingly sufficient laws through which regulation for the purposes of addressing plastic waste pollution could be addressed, this chapter seeks to evaluate some of the instances where interventions to address plastic waste associated concerns were made. As such, the chapter discusses three examples which have been implemented to try to regulate plastic waste. Thereafter the chapter will illustrate some challenges related to plastic waste management. The question guiding the discussion in the chapter is: *Does the legal and policy framework applicable to plastic waste management have a practical effect and what are the challenges hindering effective plastic waste management?* The discussion unfolds as follows:

- i. a discussion of a plastic ban;¹⁷²
- ii. a discussion of the paper and packaging industry waste management plan;¹⁷³
- iii. a discussion of the extended producer responsibility;¹⁷⁴
- iv. challenges hindering effective plastic waste management.¹⁷⁵

4.2 Examples of plastic waste management regulations and programmes

According to Nhamo,¹⁷⁶ the approaches to regulating plastic waste usually fall within two policy instrument schemes: command and control measures and self-regulation through economic incentives. The discussion below will show that for the most part, most of the action has adopted the command and control approach.

¹⁷² Section 4.2.1.

¹⁷³ Section 4.2.2.

¹⁷⁴ Section 4.2.3.

¹⁷⁵ Section 4.3.

¹⁷⁶ Nhamo 2008 *Urban Forum* 84.

4.2.1 Plastic Bag Agreement

By 2003 plastic waste in the form of non-reusable carrier bags had become a widespread problem that it was ironically labelled the “national flower”.¹⁷⁷ Owing to the increased pollution caused by these single-use plastic carrier bags, the then Minister of Forestry, Fisheries and the Environment promulgated regulations on plastic bags through section 24(d) of the *Environmental Conservation Act*.¹⁷⁸ At the time, NEM:WA had not yet been promulgated, but the White Paper had been set.

The Minister’s regulations were passed in the Government Gazette on the 9th of May 2002, with 8 May 2003 set as the date at which the regulations would come into effect. Details of these Regulations are described as follows:¹⁷⁹

The draft regulations proposed to prohibit the manufacture of plastic shopping bags of less than 30 µm in thickness by the first of January 2001 and 80 µm wall thickness respectively by the first of June 2001. Any person who contravened the provisions of the regulations would be guilty of an offence and liable, on a first conviction, to a fine not exceeding R10,000 or imprisonment for a period not exceeding 1 year or to both. In the case of a second or subsequent conviction, the offender would be liable to a fine not exceeding R100,000 or to imprisonment not exceeding 10 years or to both.

The regulations required of manufacturers to produce thicker plastics which could last longer. The reasoning behind this was that longer lasting bags could be reused and that if they were indeed thicker, the plastic would be valuable for recycle.¹⁸⁰ This measure was likely to have ripple effects, as such measures had elsewhere. For example, in the United States of America, it is believed that the manufacture of plastic bags was worth USD 1.2 billion to a plastic industry that overall is worth around USD 374 billion.¹⁸¹ It was thought that the effect of a ban of this kind on plastic producers in the United States would be minimal, as compared with the effect on the plastics industry in South Africa, which undoubtedly employs a number of people. Sure enough, the 2002 plastic ban regulations were met with resistance from industry and unions even before they came into effect, as

¹⁷⁷ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 27; Holmberg and Stripple 2019 *Waste Management* 430.

¹⁷⁸ 73 of 1989. The section states that the “Minister may make regulations with regard to waste management”, then goes on to list a number of aspects which the Minister’s actions could address.

¹⁷⁹ Nhamo 2008 *Urban Forum* 88.

¹⁸⁰ Nhamo 2008 *Urban Forum* 92; Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 27.

¹⁸¹ Nielsen, Holmberg and Stripple 2019 *Waste Management* 434.

the ban was projected to result in job losses.¹⁸² In fact, the Plastics Federations of South Africa, the same organisation that was the first African-based organisation to sign the *Declaration of the Global Plastics Associations for Solutions on Marine Litter*, led the protests.¹⁸³ Part of the arguments made in protest was that rather than a ban, other measures like citizen education, awareness and a plastic bag levy would achieve better results across the board.¹⁸⁴

Collaborative consultation efforts between industry and government were undertaken, and the idea of a levy on point of sale seemed to be the most acceptable route to take. This levy would then be used to “stimulate the collection and recycling of plastic shopping bags.”¹⁸⁵ This significant joint partnership and collaboration between government and industry resulted in the abandonment of the initial 2002 regulations in favour of a Plastic Bag Agreement. Among other issues, part of the agreement included aspects to the effect that a mandatory fee was to be levied on plastic bags; that before any purchase, customers were to be told that plastic bags were no longer free, but that there was now a cost to them and that product prices would have to be adjusted, since such prices had included the supposedly “free” plastic bags.¹⁸⁶ An important point to note is that the primary purpose of pricing mechanisms like taxes and levies is to shift the burden, as it were, to the customer, such that the price would discourage customers from buying plastic bags: “[t]he underlying assumption is that actors respond to costs and benefits by maximising their self-interests; changing the cost will change behaviour.”¹⁸⁷ Whether this practice actually works is always subject to time and review.¹⁸⁸

¹⁸² Hasson, Leiman and Visser 2007 *South African Journal of Economics* 67; Nhamo 2008 *Urban Forum* 88; Nielsen, Holmberg and Strippel 2019 *Waste Management* 434.

¹⁸³ Nhamo 2008 *Urban Forum* 88.

¹⁸⁴ Nhamo 2008 *Urban Forum* 88.

¹⁸⁵ Nhamo 2008 *Urban Forum* 94. During the 2020 budget speech, it was noted that the plastic bag level will be raised to 25 cents. See De Kock 2020 <https://www.bizcommunity.com/Article/196/703/201095.html>.

¹⁸⁶ Hasson, Leiman and Visser 2007 *South African Journal of Economics* 67; Nhamo 2008 *Urban Forum* 94.

¹⁸⁷ Holmberg and Strippel 2019 *Waste Management* 431; Hasson, Leiman and Visser 2007 *South African Journal of Economics* 68.

¹⁸⁸ In the South African case, the plastic prices were actually factored into the overall price of goods, Hasson, Leiman and Visser 2007 *South African Journal of Economics* 67.

The eventual promulgated regulations were titled *Plastic Carrier Bags And Plastic Flat Bags Regulations* (Regulations),¹⁸⁹ and they prohibited the manufacture of plastic shopping bags that were less than 24 µm in thickness:

The manufacture, trade and commercial distribution of domestically produced and imported plastic carrier bags and plastic flat bags, for use within the Republic of South Africa, other than those which comply with paragraphs 4 and 5 of the Compulsory Specification, is hereby prohibited.¹⁹⁰

Contravening the above provision would result in a fine, imprisonment, or both of the punishments.¹⁹¹ If there were to be a continued violation of the ban even after conviction, then the accused would be guilty of a continuing offence and would be liable on conviction to another fine or having to serve time in prison for not more than 20 days.¹⁹²

Reports in the following year were that there had been a reduction by over 70% in store-to-consumer plastic, and that there were fewer plastic-related drain blockages in the streets and less plastic litter on the beaches.¹⁹³ This held only in the short term,¹⁹⁴ however, as current statistics, as noted earlier, show that plastic waste pollution is still a problem.

4.2.2 Paper and Packaging Industry Waste Management Plan

As noted earlier, section 28 of NEM:WA contemplates that industries produce waste management plans (IndWMP). This implies that an IndWMP is a government managed plan which requires of the government to consistently monitor performance. Owing to the continued problematic nature of plastic waste, the Minister of Forestry, Fisheries and the Environment published a *Notice to the Paper and Packaging Industry, Electrical and*

¹⁸⁹ GNR.625 of 9 May 2003.

¹⁹⁰ Section 2 of the Regulations. This measurement was made in line with the Compulsory Specification for Plastic Carrier Bags and Flat Bags under the *Standards Act* 29 of 1993.

¹⁹¹ Section 2(1) of the Regulations.

¹⁹² Section 3(2) of the Regulations.

¹⁹³ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 27; Nhamo 2008 *Urban Forum* 98; Hasson, Leiman and Visser 2007 *South African Journal of Economics* 67.

¹⁹⁴ Hasson, Leiman and Visser 2007 *South African Journal of Economics* 78.

Electronic Industry and Lighting Industry to Prepare and Submit to the Minister Industry Waste Management Plans For Approval,¹⁹⁵ (hereafter Paper and Packaging IndWMP).

The Paper and Packaging IndWMP required of producers¹⁹⁶ to register with the Minister for the purposes of being known as a producer.¹⁹⁷ Thereafter, the producers were required to either submit their own IndWMP or subscribe to an already existing IndWMP.¹⁹⁸ In some ways, this was a collaborative governance effort, in that industry was tasked with developing what they deemed to be appropriate waste management plan for the industry, while the Minister had the capacity to determine if such a plan was appropriate. As to the actual content of the IndWMP, a number of aspects needed to be addressed, including:

- providing a five year plan of indicating how much waste was anticipated to be generated, reused, recycled, recovered and disposed of;¹⁹⁹
- how a waste hierarchy would be structured within the industry;²⁰⁰
- what incentives would be provided to ensure end-users practise good waste management.²⁰¹

Surprisingly, since 2016 seven Paper and Packaging IndWMPs have been submitted to the Minister and all seven have been rejected for not being good enough.²⁰² It is for this reason that the Minister has now in 2020 revoked section 28 of NEM:WA's Paper and Packaging IndWMP in favour of what is termed extended producer responsibility (hereafter EPR).²⁰³

¹⁹⁵ *Notice to the Paper and Packaging Industry, Electrical and Electronic Industry and Lighting Industry to Prepare and Submit to the Minister Industry Waste Management Plans for Approval*, GN 915 in GG 40207 of 12 August 2016.

¹⁹⁶ These are defined under section 1 of Schedule 1 of the Paper and Packaging IndWMP as "any person or category of persons engaged in the commercial manufacture, conversion, refurbishment or import of new and/or used: paper and packaging materials ... which are intended for distribution in the Republic of South Africa."

¹⁹⁷ Section 2 of Schedule 1 of the Paper and Packaging IndWMP.

¹⁹⁸ Section 3 of Schedule 1 of the Paper and Packaging IndWMP

¹⁹⁹ Section 4(d) of Schedule 1 of the Paper and Packaging IndWMP.

²⁰⁰ Section 4(e) of Schedule 1 of the Paper and Packaging IndWMP.

²⁰¹ Section 4(i) of Schedule 1 of the Paper and Packaging IndWMP.

²⁰² PackagingSA 2020 <https://www.packagingsa.co.za/2020/01/21/sa-packaging-and-plastics-industries-applaud-ministers-decision-to-develop-industry-managed-waste-management-plan/>.

²⁰³ Hanekom 2020 *South African Journal of Science* 2.

4.2.3 Extended producer responsibility

EPR are measures that are undertaken to boost recycling. It is argued that through EPR “the recycling rate will increase when manufacturers of products are mandated to take responsibility for their products beginning from the take-back to the recycling and ultimately to the disposal.”²⁰⁴ For some, EPR is an external cost which is factored into the production value of a product, such that the selling price includes it.²⁰⁵ This puts the responsibility on industry to manage their waste beyond, for example, having distributed their plastic products to wholesalers. In terms of NEM:WA, EPR measures are defined as

measures that extend a person’s financial or physical responsibility for a product to the post-consumer stage of the product, and includes-

- a) waste minimisation programmes;
- b) financial arrangements for any fund that has been established to promote the reduction, re-use, recycling and recovery of waste;
- c) awareness programmes to inform the public of the impacts of waste emanating from the product on health and the environment; and
- d) any other measures to reduce the potential impact of the product on health and the environment.²⁰⁶

NEM:WA mandates, where necessary, the Minister of Forestry, Fisheries and the Environment to engage in consultations with the Minister of Trade and Industry in order to determine which products for the EPR could be sanctioned.²⁰⁷ Pursuant to this, on the 5th of November 2020 the Minister of Forestry, Fisheries and the Environment published the *Regulations Regarding Extended Producer Responsibility* (Regulations)²⁰⁸ as well as the *Extended Producer Responsibility Scheme for Paper, Packaging and Some Single Use Products* (Scheme).²⁰⁹ Given that this framework has just recently been proposed, there is no evidence as to whether it will work or not. It is important to note a few aspects which are captured in the Regulations, however. For example, there is a requirement for the plastic and packaging industry to have as a “minimum requirement” cleaner production measures,²¹⁰ reuse, recycling, recovery for beneficial use, treatment and

²⁰⁴ Ayeleru *et al.* 2020 *Waste Management* 32.

²⁰⁵ Nielsen, Holmberg and Stripple 2019 *Waste Management* 432.

²⁰⁶ Section 1 of NEM:WA.

²⁰⁷ Section 18 of NEM:WA.

²⁰⁸ GN 1184 in GG 43879 of 5 November 2020.

²⁰⁹ GN 1187 in GG 43882 of 5 November 2020.

²¹⁰ Section 6(1) of the Regulations.

disposal.²¹¹ Once this is in place, the producers are required to then submit annual external audit reports which will then be measured against the EPR plan.²¹² If there is non-compliance with the EPR plan, then penalties range from imprisonment not exceeding 15 years to fines or even a revocation of an operating licence.²¹³

It remains to be seen how this framework will contribute to addressing the plastic waste scourge.

4.3 Challenges to plastic waste management in South Africa

If plastic waste pollution is on the rise (which it is, going by the statistics), and if South Africa has mechanisms to ensure that plastic waste could be regulated or at least mitigated, a reasonable presumption is that there are challenges to the management of plastic waste. Based on the discussion from the three previous chapters, the four broad and intertwined observations hereunder could be the possible reasons why there are challenges to plastic waste management.

4.3.1 Urbanisation and service delivery

One of the biggest problems facing South Africa is the migration of people between provinces and even across borders. This migration is being partly caused by urbanisation, with people moving around spaces looking for better opportunities. A characteristic of this movement is often at times the proliferation of informal settlements, which in turn make for hotspots for illegal and unsustainable dumping practices.²¹⁴ A major consequence of migration-induced urbanisation (or general urbanisation even) is that service delivery suffers, as some localities are then put under stress, with different communities in the same area possibly receiving different service coverage.²¹⁵ As noted earlier, waste management in general usually fails to keep up with the fast rate at which populations are expanding: “waste management infrastructure is developing slower than the increasing plastic waste that needs to be managed.”²¹⁶ Governments thus have to

²¹¹ Section 6(3)-(7) of the Regulations.

²¹² Section 8(3) of the Regulations

²¹³ Section 13 of the Regulations.

²¹⁴ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26; Ayeleru *et al.* 2020 *Waste Management* 30.

²¹⁵ Matete and Trois 2008 *Waste Management* 1480.

²¹⁶ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 2.

prioritise what service delivery aspects to direct while industry will not stop producing (in fact, more products will be produced to cater for the demands of a growing population). This is not even far-fetched, as scholars believe that one of the many challenges to solid waste management in South Africa is poor service delivery.²¹⁷ The increase in urbanisation coupled with the lack of extension of services to meet this growing population has meant that services like refuse collection, for example, are done in a haphazard and inconsistent way. This is perhaps part of the reason why the country is rocked by regular service delivery protests.

4.3.2 Citizen apathy and lack of awareness

Some authors have commented that plastic has become part of our lifestyles.²¹⁸ A shocking statistic is that over 50% of the global population is not aware of the harmful effects of plastic on human beings and the environment, and this number is larger in developing countries.²¹⁹ One finding by some scholars is that most citizens do not even know what happens to their waste once it is collected: “[m]ost of the members of the public do not know what happens to their wastes from the point of collection to disposal and many of them even believe that all their generated PW is recycled.”²²⁰ In a country like South Africa, this is particularly worrisome as the country already suffers from regular service delivery protests.

It also appears that the plastic bag levy has not deterred citizens from buying single use plastic products. Scholars have suggested that the initial price shock of the plastic bag levy is what ensured that in the short term, plastic bag pollution was significantly reduced.²²¹ However, after consumers were used to the pricing of plastic bags, the almost “business as usual” approach of using plastic bags resumed.²²² This goes to show that regulation alone is not enough, as those who are supposed to effect the regulation or be influenced by it need to “buy into” the rationale behind the regulation.

²¹⁷ Matete and Trois 2008 *Waste Management* 1480; Ayeleru *et al.* 2020 *Waste Management* 30.

²¹⁸ Ayeleru *et al.* 2020 *Waste Management* 30.

²¹⁹ Nxumalo *et al.* 2020 *Social Sciences & Humanities Open* 3.

²²⁰ Ayeleru *et al.* 2020 *Waste Management* 32.

²²¹ Hasson, Leiman and Visser 2007 *South African Journal of Economics* 79.

²²² Hasson, Leiman and Visser 2007 *South African Journal of Economics* 79.

4.3.3 Few recycling facilities

Matete and Trois have observed that a thriving recycling industry is usually market driven.²²³ This is evident from the fact that private entrepreneurs and companies, as opposed to government institutions, are usually involved in the recycling of general waste and plastic waste in particular.²²⁴ If plastic recycling seemed valuable enough, a reasonable assumption is that the number of recycling facilities would increase. As noted earlier, recycling is expensive because it requires facilities and infrastructure, whereas landfilling is considered cheaper.²²⁵ Worse still, landfilling is problematic, to the extent that suitable land for the placement of landfilling is not always easy to find.²²⁶

Also, plastic waste recycling could be indirectly linked to the economic factors (the economics of it) and prevailing economic practices in a state. In South Africa particularly, the total ban on single use plastic was heavily challenged by the industry, which obviously has vested economic interest in the matter.²²⁷ It was also argued that the plastic manufacturing industry employs a significant number of people, with the result that such a ban would have had dire consequences on employment. Nothing was said about how many people were employed in the recycling industry, though. The focus was thus placed on the manufacturing and production industry for various socio-economic reasons.

4.3.4 Lack of environmental accountability

As noted earlier, the plastic bag levy brings in significant revenue (over R200 million in 2018).²²⁸ How this fund is used for waste management or what the fund is even used for is not clear. The government has acknowledged this, as in the 2020 NWMS it was noted that the plastic bag levy which will now be at 25 cents has not been properly utilised: “environmental levies on waste such as the plastic bag levy yield significant revenues to the national fiscus that have not been effectively ring-fenced for waste management.”²²⁹ This is evidence of a lack of environmental accountability from a regulatory perspective.

²²³ Ayeleru *et al* 2020 *Waste Management* 27; Matete and Trois 2008 *Waste Management* 1481.

²²⁴ Matete and Trois 2008 *Waste Management* 1481.

²²⁵ See in section 3.2.2 above.

²²⁶ Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM* 26.

²²⁷ See the comments in section 4.2.1 above.

²²⁸ De Kock 2020 <https://www.bizcommunity.com/Article/196/703/201095.html>.

²²⁹ 2020 NWMS, 57.

4.4 Summary and conclusion

The chapter has sought to demonstrate the practical measures that have stemmed from the legal and policy framework for waste management. The three examples given had to do with state-led initiatives to reduce plastic waste as well as collaborative efforts through the EPR. None of the measures have contributed in any significant fashion to the mitigation of plastic waste, as waste has been on the rise. Having identified four broad challenges possibly affecting efforts to mitigate plastic waste, the last chapter will offer a few suggestions as to what could be done to improve plastic waste management.

CHAPTER 5

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Summary

5.1.1 The international plastic waste legal and policy framework.

The discussion in Chapter 2 was guided by the following question:

What are the impacts of plastic waste generally and how are plastic waste concerns addressed globally?

The analysis found that while plastic waste is one form of waste, it has specific and significant negative consequences on land based resources, marine resources, and human health and well-being.²³⁰ These consequences are why there have been international efforts, at the level of the United Nations even, to provide guidance on how plastic waste could be regulated in order to conserve the environment.²³¹ Such efforts have been continuous, such that in 2019 plastic waste is now at a level where it is classified as “hazardous” waste. While the regional frameworks were found to be silent on the legal aspects of waste, the discussion observed that there are policy directives which have broad regional objectives. These also note the need for states to have sufficient laws and policies in place for proper waste management.²³² The chapter concluded by reiterating that the state has a legal obligation to ensure that legal and policy frameworks are promulgated and enforced.

5.1.2 The South African legal and policy framework on plastic waste management.

Having established the international legal mandate on states, the discussion then sought to establish whether South Africa has laws which are appropriate and adequate to the purpose of regulating plastic waste. Chapter 3 was thus guided by the following question:

²³⁰ Section 2.2 above.

²³¹ Section 2.3 above.

²³² Section 2.4 above.

How and to what extent do South Africa's legal and policy frameworks for waste management address the issue of plastic waste?

The discussion found that while there is no explicit reference to plastic waste in most of the legal and policy frameworks, such frameworks have mechanisms which could be used to specifically regulate plastic waste. In principle, this means that South Africa satisfies the international mandate to regulate and control waste in its territory. With a Constitution that recognises the right to a healthy environment and the pursuit of sustainable development, and laws and policies framed from as early as the 2000's (the White Paper) to specific regulations promulgated as recently as in November 2020, one could argue that the government has tried to put measures in place for regulating waste.²³³ Ultimately, it would seem that NEM:WA sufficiently captures the realisation that waste is an affront to environmental rights under section 24; that waste needs an integrated approach to being managed, especially from a waste hierarchy perspective; that plastic *could* be listed as a priority waste²³⁴ if the need arises, and that collaborative work between government and industry is possible.²³⁵

5.1.3 A critique of plastic waste management in practice.

In order to try to discover why plastic waste continues to be problematic when there are laws and policies already in place, the next phase of the discussion was to review a few instances in which regulatory measures were put in place to mitigate against plastic waste pollution. Chapter 4 was thus guided by the following question:

Does the law and policy applicable to plastic waste management have a practical effect and what are the challenges hindering effective plastic waste management?

As the analyses found, the law does have a practical effect and has been used by the state. A plastic bag levy was found to have had the short-term effect of significantly reducing single use plastic waste.²³⁶ The other regulatory intervention requiring the plastic and packaging industry to produce IndWMP survived for roughly three years (2016-

²³³ See generally section 3.2 above.

²³⁴ See section 14(1) of NEM:WA.

²³⁵ See for example the EPR, discussed under section 4.2.3 above.

²³⁶ Section 4.2.1 above.

2019), but not a single IndWMP was adopted.²³⁷ This ultimately led to the latest effort, where government and industry are collaborating, with potential punitive measures if industry does not deliver. At the conclusion of the discussion, it was clear that two questions needed clarity: is the law and policy framework insufficient, or is the problem more about the enforcement of the current regulatory regime? Are there possibly other issues at play affecting the manner in which both industry and government approach regulation? Four challenges were identified as being possibly responsible for the rise in the plastic waste scourge when the laws and policies are in place. These challenges were identified as urbanisation and its impacts on service delivery; a lack of awareness on the part of citizens; a possible shortage of recycling facilities; and a lack of environmental accountability.²³⁸

5.2 Recommendations

Based on the summary above and the general discussion preceding it, a few broad and intertwined recommendations are noted hereunder as having the potential to assist in efforts to mitigate the production of plastic waste.

5.2.1 Improvements in service delivery

Urbanisation will continue to occur, as noted earlier, and service delivery will need to be improved to cater for this. In order to improve service delivery, the government will need to prioritise waste management in general. For waste management in particular, the funds that are collected from the plastic levy should clearly be diverted to what they are meant for: waste management. This could decidedly facilitate environmental accountability on the part of government.

5.2.2 Improvements in awareness campaigns

Plastic South Africa is of the view that it is the disposal of waste that is the major problem.²³⁹ As such, the public needs to be made aware of the dangers of plastic waste. After all, the public constitutes the biggest consumer of single use plastic. Such public

²³⁷ Section 4.2.2 above.

²³⁸ Section 4.3 above.

²³⁹ Plastic SA 2019 "<https://www.plasticsinfo.co.za/2019/07/19/pollution-is-the-problem-not-plastic/>.

awareness campaigns can take many forms, including media and internet campaigns, as well as school-based campaigns. If this awareness is successfully raised with children, for example, then perhaps a generation of environmentally conscious citizens could be developed.

A specific method of mounting these campaigns could also be to use modern means to communicate the dangers of plastic pollution. Such modern means could include the social media.²⁴⁰ Earlier it was noted that the graphic video posted on YouTube of a plastic straw being removed from a turtle's nose elicited a great deal of international condemnation and raised awareness.²⁴¹

5.2.3 Prioritisation of governmental and industry collaboration in waste management

There is an inescapable reality which must be accepted, that industry really does need plastic in its work, while citizens really do use plastics. It is therefore necessary to service the need. As a result, any strategies to ensure that plastic waste is reduced have to ensure that there is collaboration and cooperation between all parties (this includes ensuring proper public and industry participation). With the plastic bag ban, for example, industry rejected an outright ban and it was also industry that proposed the plastic levy,²⁴² which the government ended up adopting. If the incoming EPR works, it will show in another demonstrable way that collaboration and cooperation work. The state will need to be firm in the enforcement of its laws, however.

5.2.4 Prioritisation and enforcement of waste hierarchy standards

If the waste hierarchy is followed through, it should release the pressure waste has on landfill sites. It could guide the management of waste in a systematic way and lead to a more circular economy where reuse and recycling are maximised.²⁴³ This could work in various ways. For example, and related to the last recommendation, citizens would need to be well informed of the consequences of plastic waste, with the additional information to the effect that rather than perceiving plastic wholly as waste, plastic could be used as

²⁴⁰ Van Rensburg, Nkomo and Dube 2020 *Applied Geography* 8.

²⁴¹ See section 2.2.1 above.

²⁴² Hasson, Leiman and Visser 2007 *South African Journal of Economics* 67.

²⁴³ Nielsen, Holmberg and Stripple 2019 *Waste Management* 433.

a form of raw material for the production of other products.²⁴⁴ There would be a need to find alternatives to plastic, one of which could be paper. Government could also work towards incentives for recycling companies and even the informal waste pickers, also known as waste scavengers. Unless and until there is a tangible incentive for companies or consumers to recycle, there will always be difficulties related to recycling, not least because it is also an expensive process to undertake. Recycling is necessary as a method of waste management because it is considered to be a form of “industrial ecology”,²⁴⁵ symbolising direct efforts to address waste. Also, since waste reclamation is believed to be a source of income for some families and to form part of the informal way of waste management,²⁴⁶ more incentives for it would achieve two goals: possible waste reduction and possible poverty alleviation through income generation.

5.3 Concluding remarks

The overall question guiding the whole discussion was as follows:

How and to what extent does the legal and policy framework for plastic waste management assist in reducing plastic waste in South Africa?

In answering the question it became clear that there are sufficient legal mechanisms in place to specifically deal with plastic waste, even though it is not singled out in the laws and policies. In other words, the current legal and policy framework on waste management does count as “reasonable legislative and other measures” which could be used to “secure ecologically sustainable development and the use of natural resources”. However, more efforts on the part of the state, industry and the public are required if the state is to actualise the pursuit of sustainable development through plastic waste management. If the production of plastic waste continues to rise, there might in future be a need to use NEM:WA’s section 14 process to classify plastic as a priority waste and declare it possibly

²⁴⁴ Agyeman *et al.* 2019 *Case Studies in Construction Materials* 6; Mwanza and Mbohwa 2017 *Procedia Manufacturing* 654; Ayeleru *et al.* 2020 *Waste Management* 32.

²⁴⁵ Mwanza and Mbohwa 2017 *Procedia Manufacturing* 650.

²⁴⁶ Komane 2014 “Waste Reclaimers and South African Environmental Law” 1.

hazardous, much in line with the 2019 resolution made by the UN Environment Assembly.²⁴⁷

²⁴⁷ UN Environment Programme 2019 <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint>.

BIBLIOGRAPHY

Literature

Agyeman *et al.* 2019 *Case Studies in Construction Materials*

Agyeman S, Obeng-Ahenkora NK, Assiamah S and Twumasi G "Exploiting recycled plastic waste as an alternative binder for paving blocks production" 2019 *Case Studies in Construction Materials* 11, 1-8

Ayeleru *et al.* 2020 *Waste Management*

Ayeleru OO, Dlova S, Akinribide OJ, Ntuli F, Kupolati WK, Marina PF, Blencowe A, Olubambi PA "Challenges of plastic waste generation and management in sub-Saharan Africa: A review" 2020 *Waste Management* 110, 24-42

Bosman, Alberts and Roos "Integrated Waste Management"

Bosman, Alberts and Roos C "Integrated Waste Management" in King ND, Strydom HA and Retief FP (eds) Fuggle & *Rabie's Environmental Management in South Africa* 3rd ed (Juta Cape Town 2018)

Eriksen *et al.* 2014 *PLoS ONE*

Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borerro JC, Galgani F, Ryan PG, Reisser J "Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea" 2014 *PLoS ONE* 9:12, e111913, 1-15

Hanekom 2020 *South African Journal of Science*

Hanekom A "South African Initiative to End Plastic Pollution in the Environment" 2020 *South African Journal of Science* 116:6, 1-2

Hasson, Leiman and Visser 2007 *South African Journal of Economics*

Hasson R, Leiman A and Visser M "The Economics of Plastic Bag Legislation in South Africa" 2007 *South African Journal of Economics* 75:1, 66-83

Jambeck *et al.* 2018 *Marine Policy*

Jambeck J, Hardesty BD, Brooks AL, Friend T, Teleki K, Fabres J, Beaudoin J, Bamba A, Francis J, Ribbink AJ, Baleta T, Bouwman H, Knox J and Wilcox C
"Challenges and emerging solutions to the land-based plastic waste issue in Africa"
2018 *Marine Policy* 96, 256-263

Kidd *Environmental Law*

Kidd M *Environmental Law* 2nd ed (JUTA Cape Town 2020)

Matete and Trois 2008 *Waste Management*

Matete N and Trois C "Towards Zero Waste in emerging countries – A South African experience" 2008 *Waste Management* 28, 1480-1492

Mwanza and Mbohwa 2017 *Procedia Manufacturing*

Mwanza BG and Mbohwa C "Drivers to Sustainable Plastic Solid Waste Recycling: A Review" 2017 *Procedia Manufacturing* 8, 649-656

Nhamo 2008 *Urban Forum*

Nhamo G "Regulating Plastics Waste, Stakeholder Engagement and Sustainability Challenges in South Africa" 2008 *Urban Forum* 19, 83–101

Nielsen, Holmberg and Strippel 2019 *Waste Management*

Nielsen TD, Holmberg K and Strippel J "Need a bag? A review of public policies on plastic carrier bags – Where, how and to what effect?" 2019 *Waste Management* 87, 428-440

Nxumalo *et al.* 2020 *Social Sciences & Humanities Open*

Nxumalo SM, Mabaso SD, Mamba SF and Singwane SS "Plastic waste management practices in the rural areas of Eswatini" 2020 *Social Sciences & Humanities Open* 2: 100066, 1-11

Panda, Singh and Mishra 2010 *Renewable and Sustainable Energy Reviews*

Panda AK, Singh RK and Mishra DK "Thermolysis of waste plastics to liquid fuel: A suitable method for plastic waste management and manufacture of value added products-A world prospective" 2010 *Renewable and Sustainable Energy Reviews* 14, 233-248

Robinson and Figgner 2015 *Marine Turtle Newsletter-Online*

Robinson NJ and Figgner C "Plastic Straw Found Inside the Nostril of an Olive Ridley Sea Turtle" 2015 *Marine Turtle Newsletter* 147 available at <http://www.seaturtle.org/mtn/archives/mtn147/mtn147-3.shtml?Nocount>

Sentime 2014 *African Geographical Review*

Sentime K "The impact of legislative framework governing waste management and collection in South Africa" 2014 *African Geographical Review* 33:1, 81-93

Seigné-Itoiz *et al.* 2015 *Waste Management*

Seigné-Itoiz E, Gasol CM, Rieradevall J and Gabarrell X "Contribution of plastic waste recovery to greenhouse gas (GHG) savings in Spain" 2015 *Waste Management* 46, 557-567

Soyapi 2020 *Potchefstroom Electronic Law Journal*

Soyapi CB "A Case for Transnational Law in Contemporary Times" 2020 *Potchefstroom Electronic Law Journal* 23, 1-30.

Taiwo, Otieno and Venter 2008 *SSB/TRP/MDM*

Taiwo O, Otieno F and Venter C "Towards attaining the Polokwane waste reduction goals – where are we?" 2008 *Stads-en Streeksbeplanning = Town and Regional Planning* (SSB/TRP/MDM) 52, 25-31

Van Rensburg, Nkomo and Dube 2020 *Applied Geography*

Van Rensburg ML, Nkomo SL and Dube T "The 'plastic waste era'; social perceptions towards single-use plastic consumption and impacts on the marine environment in Durban, South Africa" 2020 *Applied Geography* 114:102132, 1-9

Vince and Hardesty 2017 *Restoration Ecology*

Vince J and Hardesty BD "Plastic pollution challenges in marine and coastal environments: from local to global governance" 2017 *Restoration Ecology* 25:1, 123-128

Reports, Research Papers and Conference Proceedings

First Continental Report on the Implementation of Agenda 2063, available at <https://www.nepad.org/publication/first-continental-report-implementation-of-agenda-2063>.

Thesis and Dissertations

Komane 2014 "Waste Reclaimers and South African Environmental Law"

Komane KA "Waste Reclaimers and South African Environmental Law" 2014 (Mini-dissertation, North-West University)

Case Law

Kenya

African Centre for Rights and Governance (ACRAG) & 3 others v Municipal Council of Naivasha Petition No 50 of 2012 [2017] eKLR.

South Africa

Electronic Media Network Limited v e.tv (Pty) Limited 017 (9) BCLR 1108 (CC)

Khanyisa Community Development Organisation and Others v Director: Development Management: Region 2, Western Cape Department of Local Government,

Environmental Affairs and Development and Another [2020] 2 All SA 485 (WCC)
(5 March 2020)

Ubisse v Enviro-fill (Pty) Ltd. 2010 ZAGP 165 (JHC)

National Legislation

South Africa

Constitution of the Republic of South Africa, 1996

Environmental Conservation Act 73 of 1989

National Environmental Management: Integrated Coastal Management Act 24 of 2008

The National Environmental Management Laws Amendment Act 25 of 2014

National Environmental Management: Waste Act 59 of 2008

National Environmental Management Act (NEMA), 107 of 1998

Government notices, policies and gazettes

Plastic Carrier Bags and Plastic Flat Bags, GNR.625 of 9 May 2003

Department of Environmental Affairs and Tourism *White Paper on Integrated Pollution and Waste Management for South Africa*, GN 227 in GG 20978 of 17 March 2000

Extended Producer Responsibility Scheme for Paper, Packaging and Some Single Use Products GN 1187 in GG 43882 of 5 November 2020

National Domestic Waste Collection Standards GN 21 in GG 33935 of 21 January 2011

National Waste Management Strategy, 2011

National Waste Management Strategy, 2020

Notice to the Paper and Packaging Industry, Electrical and Electronic Industry and Lighting Industry to Prepare and Submit to the Minister Industry Waste Management Plans for Approval, GN 915 in GG 40207 of 12 August 2016

Polokwane Declaration on Waste Management Polokwane, South Africa 26-28 September 2001

Regulations Regarding Extended Producer Responsibility, GN 1184 in GG 43879 of 5 November 2020

International, regional and sub-regional law and policy

African Union Commission: First Ten-Year Implementation Plan 2014 – 2023, AGENDA 2063 The Africa We Want, A Shared Strategic Framework for Inclusive Growth and Sustainable Development, September 2015

African Union Commission, *Agenda 2063: The Africa We Want* (Addis Ababa: African Union, 2015)

Amendments to the Annex of the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973, MEPC 62/24, 2013

Brundtland Report: United Nations World Commission on Environment and Development (WCED) Report on Sustainable Development (1987)

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention), 1972

Declaration of the Global Plastics Associations for Solutions on Marine Litter, 2011

Global Waste Management Outlook, UNEP 2015

International Convention for the Prevention of Pollution from Ships (MARPOL), 1973

Protocol to the International Convention for the Prevention of Pollution from Ships, 1978

Southern African Development Community: *Regional Indicative Strategic Development Plan*, 2001

Internet sources²⁴⁸

Alfreds 2018 <https://www.news24.com/amp/news24/green/news/heres-how-much-plastic-every-south-african-uses-and-the-number-is-shocking-20181004>

Alfreds "Here's how much plastic every South African uses - and the number is shocking" 4 October 2018 available at <https://www.news24.com/amp/news24/green/news/heres-how-much-plastic-every-south-african-uses-and-the-number-is-shocking-20181004> accessed 14 October 2020

De Kock 2020 <https://www.bizcommunity.com/Article/196/703/201095.html>

De cock L "#Budget2020: Plastic bag levy increase the new sin tax?" 28 February 2020 available at <https://www.bizcommunity.com/Article/196/703/201095.html> accessed 12 November 2020

de Lange 2019 <https://www.news24.com/citypress/sponsored/plastic-the-worlds-silent-killer-20191202>

Liesel de Lange "Plastic: The world's silent killer" 02 Dec 2019 available at <https://www.news24.com/citypress/sponsored/plastic-the-worlds-silent-killer-20191202> accessed 14 October 2020

EngineeringNews 2020 <https://www.engineeringnews.co.za/article/litter4tokens-calls-for-assistance-following-resurgence-of-plastic-nurdle-pollution-on-sa-beaches-2020-11-04>

EngineeringNews "Litter4Tokens calls for assistance following resurgence of plastic nurdle pollution on SA beaches" 4 November 2020 available at <https://www.engineeringnews.co.za/article/litter4tokens-calls-for-assistance->

²⁴⁸ Sources were accessed at different dates during the course of the study, but they are all up to date and available as of the 10th of December 2020.

following-resurgence-of-plastic-nurdle-pollution-on-sa-beaches-2020-11-04
accessed 01 November 2020

Marine Litter Solutions date unknown available at
<https://www.marinelittersolutions.com/about-us/joint-declaration/>

Marine Litter Solutions "A Global Plastics-Industry Pledge" date unknown available
at <https://www.marinelittersolutions.com/about-us/joint-declaration/> accessed 12
November 2020

Masterson 2020 <https://www.weforum.org/agenda/2020/10/canada-bans-single-use-plastics/>

Victoria Masterson "As Canada bans bags and more, this is what's happening with
single-use plastics around the world" 26 October 2020 available at
<https://www.weforum.org/agenda/2020/10/canada-bans-single-use-plastics/>
accessed 19 November 2020

PackagingSA 2020 <https://www.packagingsa.co.za/2020/01/21/sa-packaging-and-plastics-industries-applaud-ministers-decision-to-develop-industry-managed-waste-management-plan/>

PackagingSA "SA packaging and plastics industries applaud Minister's decision to
develop industry-managed waste management plan" 21 January 2020 available at
<https://www.packagingsa.co.za/2020/01/21/sa-packaging-and-plastics-industries-applaud-ministers-decision-to-develop-industry-managed-waste-management-plan/> accessed 10 August 2020

Plastic SA 2019 "<https://www.plasticsinfo.co.za/2019/07/19/pollution-is-the-problem-not-plastic/>

Plastic SA "Pollution is the problem, not plastic" 19 July 2019 available at
<https://www.plasticsinfo.co.za/2019/07/19/pollution-is-the-problem-not-plastic/>
accessed 22 November 2020

Somdyala 2019 <https://www.news24.com/news24/SouthAfrica/News/pics-durban-harbour-beaches-awash-with-plastic-pollution-after-floods-20190424>

Kamva Somdyala "PICS: Durban harbour, beaches awash with plastic pollution after floods" 24 April 2019 available at <https://www.news24.com/news24/SouthAfrica/News/pics-durban-harbour-beaches-awash-with-plastic-pollution-after-floods-20190424> accessed 14 October 2020

Thornton 2020 <https://www.weforum.org/agenda/2020/12/sustainable-packaging-reduce-plastic-waste/>

Thornton A "7 ways packaging is changing to reduce plastic waste" 2 December 2020 available at <https://www.weforum.org/agenda/2020/12/sustainable-packaging-reduce-plastic-waste/> accessed 3 December 2020

UN Environment Programme 2019 <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint>

UN Environment Programme "World pledges to protect polluted, degraded planet as it adopts blueprint for more sustainable future" 15 March 2019 available at <https://www.unenvironment.org/news-and-stories/press-release/world-pledges-protect-polluted-degraded-planet-it-adopts-blueprint> accessed 12 November 2020

UN 2017 <https://www.un.org/en/chronicle/article/conference-saveourocean>

UN "A Conference to #SaveOurOcean" 2017 available at <https://www.un.org/en/chronicle/article/conference-saveourocean> accessed 14 October 2020