

The governance role of local government in the recycling of domestic waste

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ABSTRACT

Research has shown that South African households produce on average 54.2 million tons of waste per year. This means that each South African produces just under one ton of waste each year. There has been an ever-growing concern about waste due to overconsumption and about what the effects of waste are on the natural environment all over the world. It is therefore of the utmost importance that the entire human population involve themselves in developing and upholding sustainable methods of controlling domestic waste. A major waste concern is the mismanagement of plastic, especially how plastic particles have entrenched themselves into each and every aspect of the earth. Research has shown that pieces of plastic have been found in the anatomy of marine life, in large gyres and in 93% of bottled water. Almost the entire international community have accepted that waste control is essential to protect the environment, and effective waste management (such as recycling) has become an international concern, which further reiterates how important recycling is. Although many developed and some developing countries have been highly successful in waste management through waste prevention, minimisation and recycling, South Africa is said to be approximately 30 years behind these countries when it comes to recycling initiatives and managing waste.

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LIST OF ABBREVIATIONS

CE	Circular Economy
Collection Standards	National Domestic Waste Collection Standards
Constitution	Constitution of the Republic of South Africa, 1996
DEA	Department of Environmental Affairs
DFFE	Department of Forests, Fisheries and the Environment
EPR	Extended producer responsibility
IDP	Integrated development plan
IWMP	Integrated waste management plan
MEC	Minister of Executive Council
Minister	Minister of Environmental Affairs / Minister of Forests, Fisheries and the Environment
MSA	Local Government: Municipal Systems Act
NEMA	National Environmental Management Act
NEMWA	National Environmental Management: Waste Act
NWMS	National Waste Management Strategy
WPIG	Waste Picker Integrated Guideline

Chapter 1 Introduction

1.1 Problem statement

Domestic waste is not always discarded in waste disposal sites. Such waste may pollute soil, fresh water, as well as the ocean.¹ Waste pollution has the potential to endanger the lives of animals and humans. Recent studies have shown how plastic pollution on land and in the sea has led to the endangerment of almost all species on earth.² One solution that is proposed as a means to get rid of waste is recycling. Research has shown that only 10% of South Africa's waste is currently being recycled.³ The implementation and regulation of domestic recycling and sustainable waste management are therefore growing concerns, not only in South Africa, but all over the world.⁴

This study focuses on domestic waste and its recycling initiatives with specific focus on the governance role that local government plays in the recycling of domestic waste. Legislation provides that if waste cannot be minimised, it is the duty of the local government, amongst others, to reuse, reduce or recycle waste.⁵ However, the low rate of successful recycling initiatives indicates that there is a problem with regard to the enforcement of the legislation concerning recycling.⁶

Domestic waste is not defined in South Africa's national legislation; however, the *National Domestic Waste Collection Standards*⁷ (hereafter Collection Standards) defines "domestic waste" as:

waste, excluding hazardous waste, that emanates from premises that are wholly or mainly for residential, educational, health care, sport or recreational purposes. Domestic waste can be classified into recyclable and reusable, compostable and also non-recyclable or non-usable waste. Domestic waste for the purposes of the

¹ Ramos and Rouboa 2020 *Environmental Impact Assessment Review* 7.

² Sigler 2014 *Water Air Soil Pollution* 2.

³ Department of Statistics 2018
http://www.statssa.gov.za/?p=11527&gclid=CjwKCAjw3_KIBhA2EiwAaAAIirL4dwu5etIc3TeMG8EWJHbAsOHJmJaR8jrnoyDhASu9YJTt9TYPihoCYSQAvD_BwE.

⁴ Singh *et al* 2014 *Waste Management & Research* 800; Bosman "Integrated Waste Management" 699.

⁵ S 2(4)(a)(iv) of the NEMA; s 2(a)(iii) of the NEMWA.

⁶ Godfrey and Oelofse 2017 *Resources* 1.

⁷ GN 11 in GG 33935 of 21 January 2011.

standards does not include commercial and industrial waste, building rubble and 'hard' or non-compostable garden waste.⁸

Some domestic waste such as paper, cardboard, glass, metal, plastic, and electronic waste (which makes up the largest proportion of waste, besides natural waste), can be recycled.⁹ The *National Environmental Management: Waste Act*¹⁰ (hereafter NEMWA) defines "recycling" as:

a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.¹¹

The *Constitution of the Republic of South Africa*, 1996 (hereafter Constitution),¹² the *National Environmental Management Act*¹³ (hereafter NEMA), and the NEMWA, bestow the duty of recycling on the South African government (i.e., the local government through the *Local Government: Municipal Systems Act*¹⁴ (hereafter MSA)) and service delivery providers.¹⁵ Section 2(4)(a)(iv) of the NEMA states clearly that waste should be avoided and where avoidance is not possible, then the waste should be reused or recycled. The NEMWA mentions recycling in section 7 and prohibits waste treatment that could lead to a reduction of opportunities for reusing or recycling waste. Section 3(2) of the NEMWA states that this prohibition is not applicable to "generators of domestic waste that is collected by a municipality".

The management of domestic waste is a municipal function¹⁶ and section 74 of the MSA states that a municipal council must establish a tariff policy which must provide principles concerning "the economical, efficient and effective use of resources" for the recycling of waste.¹⁷ Norms and standards pertaining to waste management

⁸ Definitions in Collection Standards - Definitions.

⁹ Western Cape Government date unknown <https://www.westerncape.gov.za/service/household-recycling>.

¹⁰ 2008.

¹¹ S 1 of the NEMWA.

¹² S 156 read with Schedules 4B and 5B of the Constitution.

¹³ 107 of 1998.

¹⁴ 32 of 2000.

¹⁵ See s 2(4)(a)(iv) of the NEMA; s 3 of the NEMWA.

¹⁶ Item 4 of the Collection Standards; Glazewski *Environmental Law in South Africa* 20:31.

¹⁷ S 74(2)(h) of the MSA; see in this regard Du Plessis (ed) *Environmental Law and Local Government in South Africa* Chapter 13.

have been issued in terms of NEMWA, such as the Collection Standards (to improve waste service delivery through waste sorting and the facilitation of recycling)¹⁸ and the *Regulations regarding Extended Producer Responsibility*¹⁹ that were published in 2020. The extended producer responsibility (hereafter EPR) policy currently applies to persons or brands that generate waste through product development only.²⁰

Several municipalities have also adopted their own waste management by-laws such as the *Waste Management By-laws of the City of Johannesburg*,²¹ the *Solid Waste By-Laws of the Ekurhuleni Metropolitan Municipality*,²² the *Integrated Waste Management By-law of Cape Town*²³ and the *eThekweni Municipality Waste Removal By-law*.²⁴ In addition to these by-laws, each Municipality's Integrated Waste Management Plan (hereafter IWMP) has to be analysed and compared to the standards of the NEMWA regarding recycling. Chapter 3 of the *Waste Management By-laws of the City of Johannesburg* includes, for example, extensive provisions in relation to waste, which, amongst others, obliges the municipality to separate recyclables from non-recyclables.²⁵ Any generator or holder of waste must first aim to minimize, recover, reuse, or recycle waste in a manner that is not detrimental to the environment before resorting to landfill disposal.²⁶

The introduction of effective domestic recycling in developing countries such as South Africa could yield economic, developmental and environmental benefits.²⁷ These opportunities include, for example, job creation, poverty alleviation,

¹⁸ Kidd *Environmental law* 178.

¹⁹ GN 1184 in GG 43879 of 9 November 2020.

²⁰ Reg 1 of the GN 1184 in GG 43879 of 9 November 2020.

²¹ LAN 1012 Gauteng PG 216 of 30 July 2013.

²² LAN 275 in Gauteng PG 51 of 6 March 2002.

²³ PG 6651 of 21 August 2009.

²⁴ MN 117 in GP 1722 of 25 August 2016.

²⁵ Reg 22 of LAN 1012 Gauteng PG 216 of 30 July 2013.

²⁶ Reg 20(1) of LAN 1012 Gauteng PG 216 of 30 July 2013.

²⁷ Recycling is part of the concept of the circular economy. The circular economy entails, amongst others, an approach that integrates sustainable development into a country's economic growth and development - Korhonen, Honkasalo and Seppälä 2016 *Ecological Economics* 37. The lifecycle of waste includes generation, on-site storage, collection, transfer stations/systems, incineration, and recycling – Department of Housing *Guidelines for Human Settlement Planning and Design* (2000).

improving the quality of life of persons, and may ultimately, aid towards fulfilling everyone's right to an environment that is not detrimental to their health and well-being.²⁸

Recycling is not always a formalised activity. Informal waste pickers are said to be the "backbone" of South African recycling initiatives and are responsible for up to 90% of the recycling of domestic waste.²⁹ Some of the problems pertaining to waste pickers include not only a minimum wage issue, but also relates to the health and safety concerns that come with this "occupation" as well as government intervention to evict waste pickers from land without providing them with suitable housing.³⁰ Such concerns include, for example, health and safety hazards on the street³¹ (waste pickers usually travel the roads with a trolley and there have been recorded incidents of fatal injuries to these workers).³² These informal workers need to be considered in new recycling initiatives since the possibility of active participation by households in recycling management will impact on the work opportunities and income of these waste pickers.³³ New initiatives may, on the other hand, provide job opportunities as well as provide these workers with a healthier and safer work environment. However, the duty to recycle rests first upon the generator or holder of recyclable waste, and NEMWA provides that the duty to recycle (when possible) rests upon the state.³⁴ Involving waste pickers in the municipality could benefit both parties in the sense of job opportunities for the waste pickers and efficient service delivery for the local government.

It seems therefore that local government has a role to play in recycling, however, their mandate and execution of the mandate are not that well-articulated in the

²⁸ Item 1 of the Collection Standards.

²⁹ ENCA 2019 <https://www.enca.com/news/waste-pickers-key-recycling-industry-experts>.

³⁰ Mutandiro *GroundUp* 1.

³¹ Schenck et al 2019 *International Journal of Environmental Research and Public Health* 2.

³² Khanyile 2019 <https://www.news24.com/news24/SouthAfrica/Local/Maritzburg-Fever/another-waste-picker-killed-in-compactor-truck-accident-at-landfill-20190716-2>.

³³ Samson 2021 <https://www.wits.ac.za/news/latest-news/opinion/2021/2021-05/johannesburg-is-threatening-to-sideline-informal-waste-pickers-why-its-a-bad-idea.html>.

³⁴ S 3 of the NEMWA.

legislation. There is therefore a need to determine the role of local government in waste management and specifically recycling.

The research question of this study is accordingly to what extent does current national, provincial and local legislation place a governance role and duty on local government to recycle domestic waste?

1.2 Aim of study

The aim of the study is to analyse current national, provincial and local legislation to determine the governance role of local government in ensuring recycling. In order to support the main aim of this dissertation, the following additional objectives are set: i) to provide a background on recycling in South Africa by identifying recycling actors and to address the challenges with current recycling, ii) to discuss the relevant South African legislation that regulates waste management in general and recycling in particular, iii) to establish the governance role of local government in recycling, and iv) to analyse four different local governments' by-laws in order to establish whether these municipalities exercise their governance role relating to recycling.

1.3 Research methodology

The study is a literature review of primary and secondary sources in order to determine local government's governance role in relation to recycling. Primary sources for this dissertation include national, provincial and local legislation in relation to waste management and secondary sources include academic articles, textbooks, and applicable electronic sources. The study will refer to non-legal materials such as recycling case studies and research into the private and public recycling actors to provide a background to the study and to identify the actors in recycling as well as to indicate the challenges that may arise from recycling.³⁵ The national legislation will be used to determine what local government's governance role is with regard to the duty to follow the waste hierarchy and to recycle the waste

³⁵ See Chapter 2.

that could not be avoided.³⁶ The by-laws of Johannesburg, Ekurhuleni, Cape Town and eThekweni will be analysed to determine how or if local government executes a role in recycling.³⁷ The by-laws of these cities were chosen, because of their economic strength and the population of the city, as well as the fact that they have promulgated recent by-laws on waste management.

In this study Chapter 2 discusses the background of recycling and waste management and the challenges that recycling faces in South Africa. This chapter will also identify the actors in recycling efforts, which include public and private actors. Chapter 3 will be an assessment of the national legislation pertaining to waste management and recycling methods. Reference is made to *inter alia* the Constitution, the NEMA, the NEMWA and the MSA. Chapter 4 focuses on the by-laws of specific local governments (i.e., Johannesburg, Cape Town, eThekweni and Ekurhuleni) that deal with waste management and recycling. Chapter 5 concludes the study and makes recommendations.

³⁶ See Chapter 3.

³⁷ See Chapter 4.

Chapter 2 Background

2.1 Introduction

The aim of this chapter is to achieve a deeper understanding about the current status of recycling in South Africa and to address the different principles that recycling is based on. In this chapter these components will be discussed, including what and how domestic waste is recycled in South Africa, why recycling is necessary and the importance of maintaining and improving environmental sustainability, the different actors who are involved in the recycling industry, the waste management hierarchy and the challenges that South Africa faces regarding recycling. This chapter forms the background for the rest of the study.

2.2 Recycling

The statutory definition of "recycling" is set out in the NEMWA,³⁸ however, there are multiple descriptions of this complicated process. Put plainly, recycling is the "process of using recovered material to manufacture a new product".³⁹ Each type of domestic waste, amongst others, paper, plastic, metal, glass, textiles, food and harmful waste, is recycled in a different manner.⁴⁰

In order to explain what recycling entails, plastic is used as an example. The spread of plastic waste, the quantity thereof and the potential harm to the environment are at the forefront of discussions worldwide.⁴¹ Plastic takes the longest to biodegrade and has an adverse effect on the environment.⁴² The recycling of thermoplastic polymers (which is largely represented in plastic materials) has three different recycling options, namely primary recycling, secondary or mechanical recycling, and feedstock or chemical recycling. Primary recycling is preferred because it is the most cost efficient and simplistic; this process is the reuse of the waste in its primary

³⁸ See Chapter 1.1.

³⁹ Hopewell et al 2009 *Philosophical Transactions of the Royal Society* 2116.

⁴⁰ Peng and Zhou 2019 *IOP Conf. Series: Earth and Environmental Science* 5-6.

⁴¹ Chae and An 2018 *Environmental Pollution* 387; Joyner and Frew 1991 *Ocean Development and International Law* 33.

⁴² Plastic can take up to more than 600 years to biodegrade and there has been a huge mortality rate amongst ocean life as a result of plastic, see Reddy *The PEW Charitable Trusts* 1.

form (such as a plastic Coke bottle which is reused as another Coke bottle).⁴³ However, these types of products have only a limited capacity to be used, for example an expiry date is stamped onto these bottles. The secondary or mechanical recycling method is more invasive and needs more intervention. This process forms useable plastic through the cutting, washing or shredding of flakes, granulates or pellets of plastic and then melting the plastic waste into a new product.⁴⁴ It seems to be environmentally preferable when one considers energy consumption, material consumption, global warming potential and emissions into the environment.⁴⁵ Based on the analysis of recycling of plastic it appears that recycling is an eco-friendly method of waste management,⁴⁶ and it is therefore crucial to further explore the need for recycling initiatives.

2.3 Need for domestic waste recycling initiatives and the circular economy

Research has shown that South African households produce on average 54.2 million tons of waste per year.⁴⁷ That means that each South African produces just under one ton of waste each year. There has been an ever-growing concern about waste due to overconsumption and about what the effects of waste are on the natural environment all over the world.⁴⁸ It is therefore of the utmost importance that the entire human population involves themselves in developing and upholding sustainable methods of controlling domestic waste. A major waste concern is the mismanagement of plastic, especially how plastic particles have entrenched themselves into each and every aspect of the earth. Research has shown that pieces of plastic have been found in the anatomy of marine life, in large gyres and in 93% of bottled water.⁴⁹ Almost the entire international community have accepted that

⁴³ Grigore *Recycling* 3.

⁴⁴ Grigore *Recycling* 3.

⁴⁵ Perugini 2004 *Progress in Rubber, Plastics and Recycling Technology* 76-82.

⁴⁶ Nahman 2009 *Resources, Conservation and Recycling* 155.

⁴⁷ Association of Water and Rural Development 2019 <http://award.org.za/index.php/2019/02/01/south-africa-is-drowning-in-its-own-waste-are-our-regulators-taking-this-crisis-seriously/>.

⁴⁸ Issok et al 2021 *Sustainable Production and Consumption* 1286.

⁴⁹ Rumble 2019 *SAJELP* 102; Chatterjee and Sharma 2019 *Field Actions Science Reports* 60.

waste control is essential to protect the environment, and effective waste management (such as recycling) has become an international concern,⁵⁰ which further reiterates how important recycling is. Although many developed and some developing countries have been highly successful in waste management through waste prevention, minimisation and recycling,⁵¹ South Africa is said to be approximately 30 years behind these countries when it comes to recycling initiatives and managing waste.⁵² Using plastic again as an example: it is regarded as the most detrimental type of waste to the environment and human health.⁵³ An object as simple as a plastic toothbrush or a disposable diaper can take up to 500 years to decompose.⁵⁴

The need for a circular economy is essential for effective waste management to address plastic waste, amongst others.⁵⁵ The objectives of a circular economy (hereafter CE) is an emerging trend when it comes to waste solutions, and the main intention of the CE is to close the loop "in which materials are continually reused and recycled".⁵⁶ Not all material can be recycled, and using plastic again as an example, one should note that several plastic products cannot be recycled.⁵⁷ It is therefore not only critical for a government to prevent, reduce and recycle waste but to enforce the production of only recyclable waste.

⁵⁰ See the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal* (1989); Allan 2021 *International Institute of Sustainable Development* 5.

⁵¹ Such as Germany and South Korea, see Parker 2020 <https://www.nspackaging.com/analysis/best-recycling-countries/>.

⁵² Godfrey and Oelofse 2017 *Resources* 1.

⁵³ Zalasiewicz *et al* 2016 *Anthropocene* 3.

⁵⁴ WWF Australia 2021 <https://www.wwf.org.au/news/blogs/the-lifecycle-of-plastics>.

⁵⁵ Foreword in Department of Forestry, Fisheries, and the *Environment National Waste Management Strategy* 2020.

⁵⁶ Nielsen *et al* 2019 *WIREs Energy and Environment* 9.

⁵⁷ Such as bioplastics, composite plastic, polycarbonate and plastic coated wrapping paper, see SL Recycling date unknown <https://www.slrecyclingltd.co.uk/what-plastics-can-and-cannot-be-recycled/>.

2.4 Actors in domestic waste recycling

Similar to every essential service provided, there are different actors who contribute to the realisation (or the lack) of meeting basic service needs. The actors include public and private actors.⁵⁸

2.4.1 Public actors

Public actors in the recycling industry,⁵⁹ include, amongst others, the i) national/provincial government and ii) local government. The national or provincial government drives policy, devises principles and states how public service providers such as local governments should undertake waste management.⁶⁰ Environmental and waste-related legislation places the obligation on the state to manage waste and introduce recycling initiatives. Domestic waste cannot be managed at a national or provincial level; this is why waste management is a municipal function in terms of the Constitution, and each municipality has the duty to manage waste effectively and sustainably within its jurisdiction.⁶¹ The local government is not only tasked to collect and transport waste, but also has several other duties pertaining to waste management, such as the active encouragement of waste separation at source and to promote and encourage the "reuse, recycling and recovery of waste".⁶²

The Department of Forests, Fisheries and the Environment⁶³ (hereafter DFFE) issued national policy and strategies on waste management, and issues licences for the

⁵⁸ Schedule 5 Part A of the Constitution. The different actors can be demonstrated by using road service delivery as an example. For instance, the government is responsible to develop roads and ensure road safety (the government represents the public sector), and the private individuals or private companies who participate in road safety such as filling potholes at their own expense, Petersen *News24* 1; also see *Loots v MEC for Transport. Roads and Public Works* 2018 JOL 40384.

⁵⁹ Alberts and Van Rooyen "Solid-waste management" 486.

⁶⁰ See Schedule 4 Part A of the Constitution and s 8(3) of the NEMWA; also see Chapter 3.1 for a more detailed discussion of waste management legislation.

⁶¹ Alberts and Van Rooyen "Solid-waste management" 486.

⁶² Alberts and Van Rooyen "Solid-waste management" 489.

⁶³ The Department had different names at different periods in time, such as the Department of Environment, Forestry and Fisheries, the Department of Environmental Affairs and the Department of Water and Environmental Affairs, amongst others. Except where it makes sense in historical context to refer to the Department in terms of its historical name, for practical purposes the Department will be referred to as DFFE.

establishment of waste management facilities.⁶⁴ Local governments are responsible to establish waste facilities such as landfills and organise the orderly disposal of waste. As such, local governments therefore also have to comply with legal requirements in establishing such facilities.⁶⁵

2.4.2 Private actors

It is ordinary South Africans or organisations who are in reality the actual contributors to the South African recycling economy. The private actors include, amongst others, the i) household occupier(s) or businesses that decide voluntarily to separate waste⁶⁶ and to recycle, for example, by taking recyclable materials to containers or private recycling companies; ii) recycling companies (or buy-back centres) that collect waste from households/businesses; and iii) informal waste pickers.

2.4.2.1 Household occupiers and businesses

Unlike other countries such as Germany or Sweden,⁶⁷ there is no formal obligation on South African households or businesses to separate waste and to recycle. However, a small percentage of South African households and businesses participate in waste separation willingly and either deliver the recyclables to a recycling depot (this is where the relationship between the different actors play a role since the recycling depots are established by buy-back centres) or use a service where the buy-back centres directly pick up the client's recyclables.⁶⁸

Section 16 of the NEMWA provides a general duty of care in terms of waste management and states that any waste holder (this includes households and companies) must take reasonable measures within their power to avoid, reduce, recycle, and recover waste.⁶⁹ This general duty has not, however, been strictly

⁶⁴ See Chapters 1, 2 and 5 of the NEMWA; and in this study Chapter 3.1.

⁶⁵ See Chapter 3.1 for national regulations and policies.

⁶⁶ By lack of legal obligation, see Strydom 2018 *Recycling* 2.

⁶⁷ Dornack 2017 *Source Separation and Recycling* 6; Roust and Ekström 2013 *Sustainability* 4349.

⁶⁸ See Whole Earth at <https://wholeearth.co.za/> for an example for a private recycling company.

⁶⁹ S 16(1) of the NEMWA.

applied when it comes to separation of waste since no reports of cases could be found, where households or businesses were held accountable for their lack of waste separation, recycling efforts or waste minimisation.

2.4.2.2 Buy-back centres

Buy-back or recycling centres are middlemen, and they act as depots for informal and formal waste collectors to sell the recyclable waste that they have collected. This is done in an attempt to create their own work opportunities.⁷⁰ The middle recycling actors have not yet been fully integrated into the waste management system of South Africa, and research shows, however, that the buy-back centres are more actively providing formal and somewhat regulated job opportunities.⁷¹ In Johannesburg alone, there are approximately 84 buy-back centres,⁷² and this situation indicates that recycling has economic value with a potential to grow if recycling becomes more popular.⁷³

2.4.2.3 Informal waste pickers

The so-called "waste pickers" or "waste reclaimers"⁷⁴ earn a living by scavenging and collecting recyclable waste to sell to third-party recycling buy-back centres.⁷⁵ Unfortunately, it is also those who live in extreme poverty who participate in this informal sector.⁷⁶ Waste picking has been actively pursued in South Africa for more than three decades.⁷⁷ Informal waste pickers are responsible for 90% of the accumulated recycled waste, which means that the formal actors of waste

⁷⁰ Viljoen *et al* 2012 *Acta Commercii* 2.

⁷¹ Viljoen *et al* 2012 *Acta Commercii* 2.

⁷² See Joburg date unknown <https://joburg.co.za/recycling-101-hows-wheres-recycling/> for a few examples of buy-back centres in Johannesburg.

⁷³ Research has shown that the recycling industry has grown more each year see Avera <https://www.averda.com/rsa/news/south-africas-latest-recycling-figures>.

⁷⁴ For purpose of this study reference will be made to "waste pickers" as this term is more generally used in the literature.

⁷⁵ Schenck and Blaauw 2011 *Urban Forum* 412. Also see WIEGO 2021 <https://www.wiego.org/waste-integration-south-africa-wisa#:~:text=Informal%20waste%20pickers%20play%20an%20integral%20role%20in,streets%20and%20keep%20it%20out%20of%20municipal%20landfills>.

⁷⁶ Viljoen *et al* 2012 *Acta Commercii* 1.

⁷⁷ Godfrey 2021 *South African Journal of Science* 2. Waste legislation, municipal obligations and standards will be discussed in Chapter 3 and 4 of this dissertation.

management (the local government) only account for less than 10%.⁷⁸ The labour practices of informal waste pickers are highly unregulated, and research shows that their earnings are based on market-related prices.⁷⁹ It is quite an unstable industry, especially during the COVID-19 pandemic, where these workers could not travel freely to acquire recyclable waste.⁸⁰ The waste pickers also sell their products to private recycling businesses, who might or might not pay them the correct value for the waste.⁸¹ Research, however, shows that their earnings are based on market-related prices.⁸²

The DFFE has estimated that between 60 000 and 90 000 people are working as informal waste pickers and thus participate in South Africa's waste economy.⁸³ The department's Waste Picker Integrated Guideline (WPIG) recognises the important role waste pickers play in the industry and the "diversion of valuable resources away from landfill towards reuse and recycling". This Integrated Guideline indicates a need to integrate waste pickers into municipality activities, such as separation of waste initiatives.⁸⁴

2.5 Waste management hierarchy

Waste management has a clear hierarchy, namely:⁸⁵

- Waste avoidance and reduction;
- Reuse and recycling;
- Recovery; and

⁷⁸ See Chapter 1.1.

⁷⁹ Godfrey 2021 *South African Journal of Science* 2.

⁸⁰ Department of Environment, Forestry and Fisheries and Department of Science and Innovation Waste picker integration guideline for South Africa: Building the Recycling Economy and Improving Livelihoods through Integration of the Informal Sector (2020) i.

⁸¹ Viljoen et al 2018 *Journal of Economic and Financial Sciences* 2.

⁸² Godfrey 2021 *South African Journal of Science* 2.

⁸³ Department of Environment, Forestry and Fisheries and Department of Science and Innovation Waste picker integration guideline for South Africa: Building the Recycling Economy and Improving Livelihoods through Integration of the Informal Sector (2020) i.

⁸⁴ WPIG i. Also see Chapter 3 for a more detailed discussion on recycling statutes.

⁸⁵ Wolf 1988 *Air & Waste Management Association* 681.

- Treatment and disposal, as a last resort.⁸⁶

2.5.1 Waste avoidance and reduction

The first option is waste avoidance and reduction and is considered to be the foundation of the waste hierarchy. It is also environmentally the most favoured level.⁸⁷ The *White Paper on Integrated Pollution and Waste Management for South Africa*⁸⁸ (White Paper) discusses pollution prevention and waste minimisation, while paragraphs 4 and 5 of the White Paper focus specifically on pollution (air, water, land and waste) prevention and minimisation. Paragraph 5.2.2 discusses waste minimisation and recycling. This paragraph indicates an extensive list of what measures should be pursued in terms of recycling, including the development of mechanisms to set targets for pollution minimisation at the source and to promote the development of cleaner production technologies and novel disposal and treatment of waste.⁸⁹

At this time, South Africa does not adhere to the waste management hierarchy and skips reduction and avoidance as most waste is deposited in landfills. Using plastic again as an example, South Africa's current plastic reduction initiatives include the planned plastic bag regulations which will enforce the desirable situation that 100% of these bags be made out of recycled materials by the year 2027.⁹⁰ The tax disincentive on the buying of plastic bags did not necessarily change consumer behaviour.⁹¹ However, there are currently countries in Africa who have already phased plastic bags out.⁹²

2.5.2 Reuse and recycling

⁸⁶ Alberts and Van Rooyen "Solid-waste management" 493.

⁸⁷ Muzenda 2014 *International Journal of Chemical, Environmental & Biological Sciences* 108.

⁸⁸ GN R227 in GG 20978 of 17 March 2000.

⁸⁹ Para 5.2.2 of the White Paper.

⁹⁰ Bega *Mail & Guardian* 1.

⁹¹ Muposhi et al 2021 *Acta Commercii - Independent Research Journal in the Management Sciences* 10.

⁹² Greenpeace Africa 2020 <https://www.greenpeace.org/africa/en/blogs/11156/34-plastic-bans-in-africa/>; this includes countries such as Rwanda, Kenya and Nigeria.

This paragraph will focus on the reuse of waste as the rest of the dissertation focuses on recycling specifically. The NEMWA defines "reuse" as:

to utilise the whole, a portion of or a specific part of any substance, material or object from the waste stream for a similar or different purpose without changing the form or properties of such substance, material or object.⁹³

One creative example of waste reuse in South Africa is the story of Mulalo Nego Negondeni who spent 12 years designing and building a miniature replica of Johannesburg out of cement mix and waste materials.⁹⁴ As far as can be established, there are currently no prominent municipal projects that involve the reuse of waste, such as building a shelter with bricks made out of waste, for example;⁹⁵ however, some informal settlers have built their shelters out of waste such as old wood, metal and cardboard.⁹⁶

2.5.3 Waste recovery

The NEMWA defines "recovery" as

the controlled extraction or retrieval of any substance, material or object from waste.⁹⁷

The word "recovery" is not dealt with specifically in the NEMWA and is always referred to alongside the words "reduce" and "recycle". However, Schedule 1 of the NEMWA refers to waste recovery (that meets certain criteria such as daily capacity) as a waste management activity which requires a waste management licence and a basic assessment process as required in section 24(5) of the NEMA.

2.5.4 Treatment and disposal

⁹³ S 1 of the NEMWA.

⁹⁴ Cardova date unknown <https://theinsidersa.co.za/mulalo-nego-negondeni-creates-incredible-mini-replica-of-johannesburg-in-backyard/>; also see p 52 for an image of his creation.

⁹⁵ Countries such as Kenya, Cameroon and Senegal have been part of the Othalo project who builds houses out of "100% recycled plastic" see Masterson *World Economic Forum* 1. This does not say that it does not happen in South Africa, but it is definitely not the norm. Houses have been built with filled plastic bottles, see in this regard Allison *Mail & Guardian* 15 June 2017.

⁹⁶ Harch date unknown <https://www.un.org/africarenewal/web-features/winding-path-decent-housing-south-africa%E2%80%99s-poor>.

⁹⁷ S 1 of the NEMWA.

Waste treatment can be described as an alternative waste disposal method other than disposing the solid waste directly into a landfill.⁹⁸ Treatment technologies include waste gas cleaning,⁹⁹ incineration through heat recovery, accelerated composting, stabilisation chemical fixation, solidification of waste and isolation by vitrification.¹⁰⁰ The DFFE has published compost norms and standards and has recognised that composting organic waste is an acceptable approach to achieving the objectives of the waste management hierarchy.¹⁰¹ The then Department of Environmental Affairs (hereafter DEA) determined in their norms and standards strategy that approximately 24% of the total generated waste in South Africa is made up of green/organic waste.¹⁰² It is therefore a significant percentage of the waste generated in South Africa and is worth pursuing and incorporating into waste management. Section 3 of the strategy also lists the "instruments for implementing change" and has implemented several actions to meet the target of more composting. Some of these actions include the assurance that a sufficient budget is provided to achieve these goals as well as to implement the *Standard for Disposal of Waste to Landfill*.¹⁰³

2.6 Challenges that South Africa faces with regard to domestic waste recycling

In 2020, the DEA published a *National Waste Management Strategy*¹⁰⁴ (hereafter NWMS) as a requirement set out in section 6 of the NEMWA. In the Executive Summary of the NWMS, the challenges of waste management in South Africa were listed;¹⁰⁵ among these challenges are the inactive promotion of the waste management hierarchy which limits economic potential, the increase in waste generation through a growing population and economy, and the absence of a

⁹⁸ Hamer 2003 *Biotechnology Advances* 71.

⁹⁹ Waste gas cleaning is the process where waste gases are incinerated in a decomposition zone, see DAS Environmental Expert date unknown <https://www.das-ee.com/en-us/waste-gas-treatment/waste-gas-treatment-systems/>.

¹⁰⁰ Hamer 2003 *Biotechnology Advances* 71; Bosman *et al* "Integrated Waste Management" 1079.

¹⁰¹ Background in GN 1135 in GG 42681 of 4 September 2019.

¹⁰² Executive Summary in DEA *National Organic Waste Composting Strategy* (2013).

¹⁰³ GN R615 of GG 35572 of 10 August 2012.

¹⁰⁴ GN 56 in GG 44116 of January 2021.

¹⁰⁵ Executive summary of GN 56 in GG 44116 of January 2021.

recycling infrastructure.¹⁰⁶ The waste management hierarchy and the lack of waste generation standards were briefly discussed above. One should, however, consider the third challenge mentioned as the challenge most pertinent to this study, namely an absence of recycling infrastructure which provides for waste separation and waste stream diversions to entities such as the buy-back centres.

Other factors that one can also consider are the lack of regulation of industry, ineffective municipal waste management and lack of public education regarding waste, waste disposal and recycling. Buy-back centres do not have a guideline as to how much they need to remunerate informal workers (such as the waste pickers), and therefore can take advantage of these workers who are reliant on them.¹⁰⁷ Although buy-back centres have some support from several local governments, the estimated budget for developing a buy-back site will cost approximately R1,9 million.¹⁰⁸ The service delivery of municipality is also in question and research has shown that 66% of household waste collected by the municipality will end up in landfill sites.¹⁰⁹ It is predicted that the landfills in South Africa will be full and unusable by the year 2050. Scholars have also recognised the fragmentation of waste management frameworks, especially the institutional responsibility for waste-related aspects.¹¹⁰

2.7 Chapter Conclusion

This chapter discussed what recycling entails and why recycling is crucial for sustainable development.¹¹¹ There are various actors that participate in recycling activities, and these include the municipality, buy-back centres and waste pickers. Considering the statistics about the amount of waste recycled per year, the private

¹⁰⁶ Foreword of GN 56 in GG 44116 of January 2021.

¹⁰⁷ Department of Environment, Forestry and Fisheries and Department of Science and Innovation (2020) Waste picker integration guideline for South Africa: Building the Recycling Economy and Improving Livelihoods through Integration of the Informal Sector.

¹⁰⁸ Buyisa-e-bag date unknown <https://pmg.org.za/files/docs/080617buyisa.doc>.

¹⁰⁹ Kings *Mail & Guardian* 1.

¹¹⁰ For example, the DFFE is responsible for the control over waste disposal sites whereas the local authority is responsible for the collection of domestic waste and disposal services, see Bosman *et al* "Integrated Waste Management" 1094.

¹¹¹ See Chapter 2.1 and 2.2.

actors seem to contribute more than government.¹¹² Upon reflection, evidence shows that the South African government has struggled to adhere to the waste management hierarchy in the past, and as discussed in Chapter 2.2.2, it is the private/informal sector of South Africa that addresses plastic concerns. For example, Woolworths has completely phased out plastic shopping bags.¹¹³ Municipalities seem to favour the last resort of the waste management hierarchy, namely treatment and disposal of waste to landfill.¹¹⁴ The government cannot solely rely on the private actors in the recycling industry to process all the recyclable waste generated by South Africans; therefore it is crucial that the private and public actors of recycling must act as partners to address waste management according to the waste management hierarchy; as well as help each other solve and avoid the current challenges that come with recycling.¹¹⁵

¹¹² Godfrey 2021 *South African Journal of Science* 1.

¹¹³ Woolworths Holdings Limited 2020 <https://www.woolworthsholdings.co.za/145-woolworths-stores-are-now-plastic-bag-free/>.

¹¹⁴ See Chapter 2.4.

¹¹⁵ See Chapter 2.4.

Chapter 3 Legal framework for waste management and recycling

The aim of this chapter is to analyse the legal framework for waste management in South Africa. The chapter will first discuss waste regulation in general and then focus specifically on those measures that address recycling. The chapter will discuss the duty of municipal domestic waste collection, recycling and the process of recycling, EPR, the principle of sustainable development, the individual duty of care regarding waste disposal and the malperformance of local government, which will all be supported by the national legislative provisions that see to these principles and duties.

3.1 Domestic waste collection

3.1.1 National Environmental Management: Waste Act

The NEMWA gives effect to section 24(b) of the Constitution in that it aims to prevent pollution and environmental degradation. Proper waste management also relates to section 24(a) in that it addresses the potential health issues that waste may cause.¹¹⁶ The NEMWA's preamble recognises the impact that poor waste management has on the environment and especially the poor, and thus admits that in order to achieve good waste management, sustainable development and the minimisation of pollution must be implemented through the workings of the government. This correlates with the Act's objectives as set out in section 2. The Act also bestows a general duty on all organs of state (including local government) to reduce the amount of waste that is produced and to reuse and recycle the waste already generated and disregarded.¹¹⁷

The Constitution obliges local government to implement waste management service delivery.¹¹⁸ The NEMWA defines "waste management services" as "waste collection,

¹¹⁶ Preamble of the NEMWA; see in this regards Martuzzi *et al* 2010 *European Journal of Public Health* 21.

¹¹⁷ S 3 of the NEMWA.

¹¹⁸ S 7(2), 24, 152(1)(b) and (d) read with Schedule 4 Part b and Schedule 5 part B of the Constitution.

treatment, recycling and disposal services".¹¹⁹ Schedule 5B of the Constitution specifically refers to "refuse removal, refuse dumps and solid waste disposal".¹²⁰ The MSA also obliges the municipality in terms of its general duty to deliver municipal services in an environmentally sustainable manner.¹²¹ Section 4 of the MSA indicates specifically that municipal services provided to communities must be delivered in a financially and environmentally sustainable¹²² manner.¹²³ The MSA also obliges the municipal manager to act responsibly as he or she is accountable for the management of service delivery for the local community in a "sustainable and equitable manner".¹²⁴ Section 9 of the NEMWA specifically lists the duties of the municipality in relation to waste management in that each municipality must:¹²⁵

- adhere to norms and standards;
- integrate waste management into their integrated development plan (hereafter IDP);
- ensure access to these services provided by the municipality;
- provide waste management services at an affordable price;
- ensure sustainable waste management services;
- keep separate financial statements.

Section 9(3) of the NEMWA allows a municipality to set local standards for "the separation, compacting and storage of solid waste" as well as for the "minimisation

¹¹⁹ S 1 of the NEMWA.

¹²⁰ If an item is listed in Schedule 5 Part B then municipalities are obliged to incorporate these services into their service delivery obligations and activities.

¹²¹ S 73(2)(d) of the MSA.

¹²² S 1 of the MSA defines "environmentally sustainable" as "the provision of a municipal service, means the provision of a municipal service in a manner aimed at ensuring that— (a) the risk of harm to the environment and to human health and safety is minimised to the extent reasonably possible under the circumstances; (b) the potential benefits to the environment and to human health and safety are maximised to the extent reasonably possible under the circumstances; and (c) legislation intended to protect the environment and human health and safety is complied with."

¹²³ S 4(2)(d) of the MSA.

¹²⁴ S 55(1)(d) of the MSA.

¹²⁵ S 9(2) of the NEMWA.

of the generation of waste and the reuse, recycling and recovery of solid waste".¹²⁶ It may further set local standards for the control of litter.¹²⁷ The municipality may also issue by-laws after a consultation process is followed as set out in the MSA.¹²⁸

The NEMWA also places several obligations on the Minister of Forestry, Fisheries and the Environment (hereafter Minister) and the Minister of an Executive Council (hereafter MEC) to execute the following:¹²⁹

- establish a NWMS;¹³⁰
- set national norms and standards in the *Government Gazette* for the classification of waste, the planning for and provision of waste management services and the storage, treatment and disposal of waste, including the planning and operation of waste treatment and waste disposal facilities;¹³¹
- designate waste management officers who co-ordinate waste management matters in that specific municipality;¹³²
- ensure that the municipality's IWMPs is aligned with those of the provincial departments;¹³³
- publish a pricing strategy for waste management charges which needs to be developed to achieve the objectives of the Act.¹³⁴

The executive authorities such as the Minister or the MEC also have discretionary powers and duties such as setting national or provincial norms and standards for

¹²⁶ Section 9(3)(a) and (b).

¹²⁷ Section 9(3)(d).

¹²⁸ Section 9(5). Also see Chapter 4 for a discussion of selected waste management by-laws.

¹²⁹ The duties and responsibilities of the national and provincial branch are necessary to explain in order to understand the multi-level functioning between the spheres of government.

¹³⁰ S 6(1) of the NEMWA. See Chapter 2.4 and 3.1.2 below for a discussion of the NWMS.

¹³¹ S 7(1) of the NEMWA.

¹³² S 10 of the NEMWA.

¹³³ S 11(1) states that the provincial department must develop an integrated waste management plan and the MEC must check these plans through s 11(6) of the NEMWA; see Chapter 3.1.3 for a further discussion on the contents of the integrated waste management strategy.

¹³⁴ S 13A(1) of the NEMWA.

recycling, waste minimisation, the EPR and remediation of contaminated land,¹³⁵ and the declaration of priority wastes in the *Gazette*.¹³⁶ The local norms and standards must adhere to the national¹³⁷ or provincial norms and standards.¹³⁸ The national and provincial government has to support and strengthen the local government's right or ability to deliver services relating to waste management.¹³⁹

As stated above,¹⁴⁰ the duty-of-care principle is one of the core principles in environmental law¹⁴¹ and is included in the NEMWA.¹⁴² "Duty of care" can be defined as the imposition:

on every entity the duty to act with due care to avoid damage to others or to the environment, or where impact on the environment is unavoidable, to mitigate harm.¹⁴³

Section 16 of the NEMWA lists "reasonable measures" that a waste holder should undertake, namely to: i) avoid the generation of waste, ii) reuse, reduce, recycle and recover waste, iii) dispose of waste in an environmentally sound manner, iv) manage waste in such a manner that it does not endanger the environment and people's health, v) prevent employees from contravening the NEMWA, and vi) prevent unauthorised use of waste.¹⁴⁴ Any person who sells a product must further inform the public of the possible impact that its hazardous waste may have on the environment or people's health.¹⁴⁵ He or she must further "investigate, assess and evaluate the impact of the waste in question on health or the environment",¹⁴⁶ and

¹³⁵ S 7(2) of the NEMWA.

¹³⁶ S 14(1) of the NEMWA.

¹³⁷ Such as the Collection Standards.

¹³⁸ S 9(2)(a) of the NEMWA.

¹³⁹ S 9(4) of the NEMWA.

¹⁴⁰ See Chapter 2.3.2.1.

¹⁴¹ This principle is also mentioned in section 28 of NEMA and section 19 of the *National Water Act* 36 of 1998. Section 28 of NEMA states that "any and every person who has or may cause environmental damage must take reasonable measures to prevent, minimise, avoid and rectify pollution and environmental degradation." Section 28 further discusses the inclusivity of this obligation and what "reasonable measures" a person should take under the duty of care.

¹⁴² Kidd *Environmental Law* 10.

¹⁴³ S 28(2) and (3) of the NEMA.

¹⁴⁴ S 16(1) of the NEMWA.

¹⁴⁵ S 16(2) of the NEMWA.

¹⁴⁶ Section 16(3)(a) of the NEMWA.

eliminate any source of environmental degradation and remedy the effects of his or her actions.¹⁴⁷

3.1.2 National Waste Management Strategy 2020

The most recent NWMS of 28 January 2021¹⁴⁸ includes additional strategies that the 2011 NWMS did not focus upon, such as, addressing the role of disadvantaged groups (such as waste pickers), investigating participatory interventions for source separation, investing in the recyclables and waste facility economies and addressing the skills gap for the youth, women and people with disabilities.¹⁴⁹ The 2020 NWMS specifically discusses the role that local government plays to meet the objectives set out in the foreword and describes their responsibilities as "planning and delivery of waste collection and disposal services and infrastructure".¹⁵⁰ It also focuses on the need to enable local governments to stay away from landfill options and first consider reusing, reducing, recovering and recycling waste.¹⁵¹ The 2020 NWMS also mentions the impact and contributions of the other actors in waste management such as the private sector and the general public.¹⁵² The DFFE notes that the previous incentives as an effort to minimise waste have not been as successful as the Department had hoped, such as the plastic bag and tyre levies.¹⁵³ The new 2020 NWMS must be incorporated into each municipality's IDP and their integrated waste management plan.¹⁵⁴ In the following paragraph the Collection Standards will be discussed.

3.1.3 Collection Standards

¹⁴⁷ S 16(3)(d) of the NEMWA.

¹⁴⁸ Foreword of the NWMS. The 2020 NWMS is an update from the 2011 strategy and the new strategy is aligned with the Sustainable Development Goals 2030 and South Africa's Development plan. See in this regard Warburton Attorneys 2021 http://warburtons.co.za/wp-content/uploads/2021/02/InfoAlert_NationalWasteManagementStrategy_29Jan2020.pdf.

¹⁴⁹ Foreword of the NWMS.

¹⁵⁰ Para 9.3 of the NWMS. Also see Chapter 4.

¹⁵¹ Para 9.3 of the NWMS.

¹⁵² See also Chapter 2.4 above.

¹⁵³ Para 10.2 of the NWMS; Sebola *et al* 2018 *Procedia CIRP* 954.

¹⁵⁴ Para 10.3.2 of the NWMS; also see Chapter 4 for an individual evaluation of different local governments' IDPs and IWMPs.

The 2011 Collection Standards recognises the importance of "acceptable, affordable and sustainable waste collection services" for all South Africans.¹⁵⁵ Accordingly, the objectives of these standards include community participation, equity, practicality, implementation of the standards with ease and clarity, and affordability and availability of resources within the local government.¹⁵⁶ One should note that the sustainability target mentioned in the introductory statement in regulation 1 is not included in the listed objectives. With regard to the municipality's duty to collect waste, different standards are included for waste separation, collection of recyclable waste, receptacles for domestic waste collection, bulk containers, communal collection points and frequency of collection.¹⁵⁷

3.2 Recycling

This paragraph specifically focuses on those measures that address recycling specifically.

3.2.1 National Environmental Management: Waste Act

Section 17(1) of the NEMWA places the obligation on actors who carry out recycling, recovering or reusing waste, to utilise waste management systems only if the activity uses fewer natural resources than the direct disposal would cause and that would also be less harmful to the environment. The NEMWA does not identify priority recyclable waste, nor does it place any further specific duties on the executive to issue norms and standards regarding the municipal process of recycling. However, the NEMWA places the duty of sustainable waste management on independent or private entities (who are responsible for the generation of waste) to prepare an industry waste management plan subject to the Minister's approval.¹⁵⁸ The Minister must publish the contents of such industry waste management plans which may include information such as "targets for waste minimisation through

¹⁵⁵ Reg 1 of the Collection Standards.

¹⁵⁶ Reg 2 of Collection Standards.

¹⁵⁷ Reg 4 of Collection Standards; chapter 3.2.3 focuses on recycling specifically.

¹⁵⁸ S 28(1) of the NEMWA.

waste reduction, reuse, recycling and recovery".¹⁵⁹ The Minister has a discretion to choose not to include waste minimisation targets into the contents of the industry waste management plan; it means that these waste generators can therefore not be forced to choose the methods prescribed for waste minimisation. However, when the waste generators decide to include reusing, recycling, and recovering waste within their surroundings, then they are bound by their decision.¹⁶⁰

3.2.2 National Waste Management Strategy 2020

The NWMS explains "waste as a resource" as follows:

This refers to beneficiating waste through re-use, recycling, treatment and recovery to reduce the amount and the toxicity of waste disposed of.¹⁶¹

The NWMS is based on three pillars namely: i) waste minimisation, ii) effective and sustainable waste services, and iii) compliance, enforcement and awareness.¹⁶²

These pillars will be discussed below.

3.2.2.1 Waste minimisation

Waste minimisation includes the "strategic thrust" of minimising the impact waste has on the environment, increasing reusing and recycling of waste and to adapt the waste sector in South Africa to be in line with the principle of circular economy.¹⁶³

The ultimate goal of this pillar is to move to a "Zero Waste going to Landfill" dispensation, and the 15-year target is set at 70% waste reduction going to landfills (reduction through the means of reusing and recycling waste).¹⁶⁴ The NWMS lists several focus areas which encompass and include waste minimisation such as

¹⁵⁹ S 30(1) and (2) of the NEMWA; The DFFE published such waste management plans for the waste tyre industry (GN 149 in GG of 13 February 2009). These regulations were withdrawn (GN 1063 in GG 41156 of 29 September 2017) following the court case of *Retail Motor Industry Organisation and Another v Minister of Water and Environmental Affairs and Another* 2014 (3) SA 251 (SCA). Subsequently Waste Tyre Regulations were issued – see GN 1064 in GG 41157 of 29 September 2017.

¹⁶⁰ S 33(1) of the NEMWA.

¹⁶¹ Para 3.3 of the NWMS.

¹⁶² Para 5 of the NWMS.

¹⁶³ Para 5.1.1 of the NWMS.

¹⁶⁴ The NWMS does not give a time-limit for the goal of "Zero Waste going to Landfill" which means that the incentive for achieving the goal has fallen short in terms of urgency".

creating an enabling environment through advanced recycling fees¹⁶⁵ and aligning policies, to build a sustainable relationship between public and private actors through providing oversight over local government performance, to minimise general waste streams from landfill through the recycling of tyres, paper, metals, plastics and paper, prevent food waste and advance waste as a resource through the expansion of recycling collection in secondary cities and rural towns.¹⁶⁶

3.2.2.2 Effective and sustainable waste services

This pillar aims to address all the relevant waste management challenges and to ensure that service delivery of waste management is done in light of sustainable development.¹⁶⁷ This pillar focuses on IWMPs, the provision of implementing separation-at-source initiatives and education for the public about the benefits of recycling.¹⁶⁸

3.2.2.3 Compliance, enforcement and awareness

Pillar three aims to mitigate and prevent damage due to non-compliance of waste actors and to prevent pollution.¹⁶⁹ This pillar's optimal focus and endgame is to regulate and manage activities which will result in zero tolerance in respect of waste indiscretions. These goals are set to be enforced through awareness and compliance promotion, increasing access to local government infrastructure (to discourage illegal waste activities such as illegal dumping) and community participation.¹⁷⁰

A significant key intervention of the NWMS is the intervention to increase reuse, recycling and recovery rates. This intervention had a set timeline of 2021 in which the goals must be completed, using this timeline to develop and grow tools of

¹⁶⁵ "Advanced recycling fees" is defined in the *National Pricing Standards for Waste Management* (GN R904 in GG 40200 of 11 August 2016) as "a special type of product tax that are based on the estimated costs of collection, processing and recycling; revenues from which are often used (or intended to be used) to cover the costs of recycling".

¹⁶⁶ Para 5.1.3 of the NWMS.

¹⁶⁷ Para 5.2.1 of the NWMS.

¹⁶⁸ Studies have shown that the majority of people do not recycle because they are unsure of how to recycle and where to discard recyclable waste; see in this regard Treerevolution date unknown <http://treerevolution.co.za/guide-to-recycling-in-sa/>; para 5.2.3 of the NWMS.

¹⁶⁹ Para 5.3.1 of the NWMS.

¹⁷⁰ Para 5.3.3 of the NWMS.

developing a public procurement framework, to establish recycle¹⁷¹ processing plants and to ensure that packaging in the future would be generated to maximise the materials that would contribute more to the circular economy and recycling methods.¹⁷²

Chapter 9 of the NWMS deals with the roles and responsibilities of the South African government. Since this dissertation focuses mainly on the governance role of local government, it is necessary to analyse the responsibilities of the municipality as provided in the NWMS.¹⁷³ As stated above,¹⁷⁴ local government is responsible for the "planning and delivery of waste collection and disposal services and infrastructure".¹⁷⁵ The NWMS lists three key focus points in terms of municipal efforts:¹⁷⁶

- The inclusion of drop-off or buy-back centres and storage facilities for recyclable waste in the municipality's IWMPs;
- The co-operation between the National Treasury and the DFFE to investigate and implement incentives such as a landfill tax and to help finance the local governments' compliance and monitoring duties of landfills through waste management licences;
- The municipal IWMPs should include awareness campaigns to create a culture of waste management compliance through the NEMWA and by-laws.

3.2.3 National Domestic Waste Collection Standards

¹⁷¹ The definition of "recycle" is the "raw material transported to a waste recycling facility or a material recovering plant for processing into a newly formed material or product"; see Kumar and Davin *Modern Manufacturing Processes* 189.

¹⁷² Para 8 of the NWMS. By the time of writing of this mini-dissertation (end October 2021), as far as could be ascertained, no regulations have been published for public comment.

¹⁷³ See Chapter 4 where the investigation will be made whether these roles and responsibilities are present in the different municipalities.

¹⁷⁴ See Chapter 2.2.1 above.

¹⁷⁵ Para 9.3 of the NWMS.

¹⁷⁶ Para 9.3 of the NWMS.

The Collection Standards consist of 10 regulations. The relevant part of these Standards for purpose of this study are i) separation at source for recycling, ii) collection of recyclable waste, and iii) drop-off centres for recyclables which are discussed in the following paragraphs.

3.2.3.1 Separation at source

Regulation 4.1 reads as the following:

Separation at source must be encouraged and supported in line with the relevant industry waste management plans. In addition:

- a. All domestic waste must be sorted at source (i.e., the households) in all Metropolitan and secondary cities;
- b. The service provider/municipality must provide clear guidelines to households regarding types of waste, the sorting of the waste, appropriate containers, and removal schedules for each type of waste; and
- c. Community involvement in recycling must be encouraged.

The first requirement starts not with the municipality but rather places an obligation on normal waste users in households. As outlined above, only 7% of households participate in recycling. It seems that this obligation is not enforced or poorly monitored. It may also be that there are no guidelines or by-laws issued in this regard.¹⁷⁷ A study determined that there are several factors which may contribute to why people do not recycle. Education seems to be the biggest contributing factor as most people are not informed why it is important to recycle, or how one should recycle.¹⁷⁸ The researchers found that if recycling was "less of a hassle" more households would participate.¹⁷⁹ As an example, the area of Sandton in Johannesburg does not have recycling collection services and if a household would like to dispose of their recyclables, they would have to transport their waste to a recycling depot (usually owned by private entities).

The second requirement places the onus on the local government to educate the households on recycling. This includes sorting waste (for example sorting waste between plastic, paper, glass and cans) and keeping them separate from one

¹⁷⁷ On a discussion of selected by-laws, see Chapter 4.

¹⁷⁸ De Young 1988-89 *Journal of Environmental Systems* 350.

¹⁷⁹ De Young 1988-89 *Journal of Environmental Systems* 350.

another (e.g., allocating a bin for each type of waste). The local government is also required to set out guidelines for the removal of every kind of waste; however, this provision does not necessarily require of the local government to be the service provider for the collection and removal of these separated waste sources.

Finally, regulation 4(1)(c) states that community participation must be encouraged regarding recycling but does not mention which types of community involvement would be necessary. Community involvement can range from mere recycling education (for example incorporating waste and recycling education into the school systems) to encouraging communities at large to participate in recycling initiatives. An example of the government engaging with communities is their "Clean-up and Recycle SA Week" which is held annually by the DFFE and other entities. The 2020 event was held between 14 and 19 September and activities included a circular economy dialogue, an award ceremony to acknowledge co-operatives who assisted the City of Johannesburg to divert waste, an International Coastal Clean-Up Day activity held in Durban and a clean-up campaign held in Limpopo.¹⁸⁰ However, one can argue that more can be done in this regard.

3.2.3.2 Collection of recyclable waste and drop-off centres

Regulation 4.2 of the Collection Standards bestows the duty on the municipality to provide an "enabling environment for households to recycle domestic waste" and describes an "enabling environment" as the inclusion of kerbside collection and clean drop-off centres. Currently Pikitup (the formal integrated waste management service provider for Johannesburg) in the City of Johannesburg established 12 depot site locations in a 1625 square km radius; this means that there is only one depot for every 135 square km.¹⁸¹ Converted to kilometres, there is approximately one recycling depot every 13 km in Johannesburg which is a lengthy distance, especially for the poor who do not have access to transport large amounts of waste. The regulation further quantifies that if the local government is unable to provide kerbside waste collection, then they must co-operate with the private recycling

¹⁸⁰ DFFE 2020 https://www.dffe.gov.za/event/deptactivity/cleanup_recycleweek_sactivities.

¹⁸¹ Pikitup date unknown <http://www.pikitup.co.za/find-a-facility/>.

sector.¹⁸² Upon investigation, there seems to be some co-operation between the government and the private sector such as the Glass Recycling Co that is registered as a Producer Responsibility Organisation by the DFFE.¹⁸³

With regard to the management of drop-off centres, the regulation stipulates that these centres should be accessible to the general public and must be contributory to reinforce positive recycling behaviour through cleanliness and being user-friendly.¹⁸⁴ It is also mentioned here that drive-through facilities should be considered if the resources are available.¹⁸⁵ The Collection Standards do not describe what a drive-through facility entails. One can imagine that it would be a service that collects the recyclable waste directly from your vehicle, which not all people have access to. However, there is currently no evidence of a "drive-thru" centre anywhere in South Africa. Lastly, it is to be encouraged that the recyclable waste at the drop-off centres must be collected at "regular intervals" to avoid causing a nuisance (such as the bins being overfull and spilling over).¹⁸⁶

3.2.4 Additional policies and regulations regarding recycling in the waste management sector

3.2.4.1 National Policy for the Provision of Basic Refuse Removal Services to Indigent Households

The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households¹⁸⁷ was published with the intention of providing free municipal services to poor indigent people who cannot afford to pay for these services themselves.¹⁸⁸ The foreword of this policy is encouraging in terms of recycling, and that recycling activities and education will also be extended to rural areas. It also states that this policy has taken the initiatives and objectives of the NEMWA into consideration when

¹⁸² Reg 4.2 of the Collection Standards.

¹⁸³ The Glass Recycling Company date unknown <https://theglassrecyclingcompany.co.za/>.

¹⁸⁴ Reg 5 of the Collection Standards.

¹⁸⁵ Reg 5 of the Collection Standards.

¹⁸⁶ Reg 5 of the Collection Standards.

¹⁸⁷ GN 413 in GG 34385 of 22 June 2011.

¹⁸⁸ Foreword of the GN 413 in GG 34385 of 22 June 2011.

this policy was developed.¹⁸⁹ Regulation 3.3 of the policy lists the three objectives which include education and awareness-raising within the local government to acknowledge and act out the promotion of recycling and the reason why there is a need for waste minimisation. There is furthermore provision in this regulation for the monthly/fortnightly collection of recyclable materials in urban and rural areas,¹⁹⁰ the role of recycling with separation at source will play to avoid increased volumes of waste at landfills,¹⁹¹ and the potential effect recycling initiatives will have on municipal income through the sale of recyclables.¹⁹²

3.2.4.2 Municipal Waste Sector Plan

The Municipal Waste Sector Plan¹⁹³ is essentially a schedule that addresses the challenges that South Africa has with waste service provision and deals with the serious backlogs of waste management most local governments face.¹⁹⁴ The aim of this plan is to "fast track" waste services in municipalities (which includes the recycling of waste).¹⁹⁵ The "Objectives and Priorities for the Municipal Waste Sector Plan" lists three objectives, namely waste minimisation, environmentally friendly waste disposal and provision for adequate service delivery.¹⁹⁶ One can assume that recycling is part of the objectives since the plan discusses and integrates recycling in great detail throughout the plan.

3.2.4.3 Waste Classification and Management Regulations

Published in 2013, the *Waste Classification and Management Regulations*¹⁹⁷ places a duty on waste generators to reuse, recycle, treat and/or dispose their waste within

¹⁸⁹ Foreword of the GN 413 in GG 34385 of 22 June 2011.

¹⁹⁰ Reg 8.3 of the GN 413 in GG 34385 of 22 June 2011.

¹⁹¹ Reg 12 of the GN 413 in GG 34385 of 22 June 2011.

¹⁹² Appendix 3 of the GN 413 in GG 34385 of 22 June 2011.

¹⁹³ GN 270 in GG 35206 of 30 March 2012.

¹⁹⁴ Executive Summary of the GN 270 in GG 35206 of 30 March 2012.

¹⁹⁵ Executive Summary of the GN 270 in GG 35206 of 30 March 2012.

¹⁹⁶ Reg 3.1 of the GG 35206 of 30 March 2012.

¹⁹⁷ GN 634 in GG 36784 of 23 August 2013 - the then DFFE published these regulations in terms of sections 69 and 73 of the NEMWA. Ss 69 and 73 provide that the Minister may make regulations pertaining to classification, environmentally sound waste management, waste management activity requirements, etc.

eighteen months of its generation.¹⁹⁸ This requirement is, however, slightly ambiguous since the waste generator essentially has a choice whether to recycle his or her waste or just dispose of it. Regulation 8 also states that the treatment or mixing of waste should be avoided if the waste is eligible to be recycled, reused or recovered.¹⁹⁹

3.3 Extended producer responsibility

The NEMWA defines "extended producer responsibility measures" 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.²⁰⁰

Section 18 of the NEMWA discusses EPR in detail. Section 18(1) allows the Minister to publish specifications in the *Gazette* to enable the objectives of the Act. These may include, amongst others, the identification of a product or class of products in respect of which EPR will apply, the EPR measures that need to be undertaken in relation to these products and identification of the person or category of persons that has to implement the EPR measures.²⁰¹ Section 18(2) provides that the Minister may publish a notice stating, amongst others, the requirements for the implementation and operation of an EPR programme (including requirements for reducing, reuse and recycling), financial arrangements needed for the programme, the percentage of products that must be recovered by the programme, the inclusion

¹⁹⁸ Reg 6(4) of the GN 634 in GG 36784 of 23 August 2013.

¹⁹⁹ Reg 7(2)(a) of the GN 634 in GG 36784 of 23 August 2013; Note that there are other policies, notices and regulations pertaining to waste management and recycling including the *White Paper*, the *National Pricing Strategy for Waste Management*, the *National Norms and Standards for the Assessment of Waste for Landfill Disposal* (GN 635 in GG 36784 of 23 August 2013), *List of Waste Management Activities that have, or are likely to have, a Detrimental Effect on the Environment* (GN 921 in GG 37083 of 29 November 2013).

²⁰⁰ S 1 of the NEMWA.

²⁰¹ S 18(1)(a)-(c) of the NEMWA.

of a life-cycle assessment and requirements for the packaging of the products.²⁰² A draft notice called *Regulations Regarding Extended Producer Responsibility*²⁰³ was published in 2020 and was re-published in March 2021 for comment.²⁰⁴ The Regulation sets out its purpose to provide the framework required by section 18 of the NEMWA, to ensure effective waste management of the "identified end-of-life products" and to encourage circular economic initiatives. A promising regulation which pertains specifically to recycling is the requirement of recycling provisions in the proposed EPR scheme.²⁰⁵

Although the EPR is not directly focused on households but on the producer of products, it is indirectly applicable to households, in that households would be able to return the product to the producer for recycling.

3.4 Malperformance in local government

Malperformance in a municipality is not a new phenomenon in South Africa, and research has shown that 64 of the 257 municipalities are dysfunctional (where 26 of these are under intervention).²⁰⁶ The constitutional provisions regulating co-operative governance²⁰⁷ require that a dispute between state organs must be settled with every reasonable effort,²⁰⁸ and the court may only be approached if all the resolution methods were exhausted.²⁰⁹ Courts are usually reluctant to interfere with government workings since the state follows a strict application of the separation of powers;²¹⁰ therefore it is the duty of other spheres of the executive level to interfere

²⁰² S 18(2) of the NEMWA.

²⁰³ GN 1184 in GG 43879 of 5 November 2020.

²⁰⁴ Since writing the dissertation the government has published the Proposed amendments to the Extended Producer Responsibility Regulations, 2020 and notices regarding extended producer responsibility published for comment (GN 1565 in GG 45572 of 2 December 2021) – due to the cut-off date for submission these regulations could not be discussed.

²⁰⁵ Reg 6(4) of the GN 1184 in GG 43879 of 5 November 2020.

²⁰⁶ Unknown 2021 <https://pmg.org.za/blog/State%20of%20Local%20Government>.

²⁰⁷ Read more about the constitutional principle of co-operative governance in de Vos *et al South African Constitutional Law in Context* 72-73 and Chapter 3 of the Constitution.

²⁰⁸ Section 41(3) of the Constitution and Chapter 3 of the *Intergovernmental Relations Framework Act* 13 of 2005.

²⁰⁹ Alberts and Van Rooyen "Solid-waste management" 524.

²¹⁰ See *Rustenburg Platinum Mines Ltd v CCMA and others (2007) 28 ILJ 417 (LC) para 13 and Bushbuck Ridge Border Committee and Another v Government of the Northern Province and Others* 1999 (2) BCLR 193 (T) page 23.

when a local government has proven to be ineffective.²¹¹ More often than not the provincial or national executive sphere is usually unwilling to intervene with local government as demonstrated in the *Kenton-on-Sea Ratepayers Association v Ndlambe Local Municipality*²¹² case. This case was considered ground-breaking because the court forced the provincial sphere to intervene through a structural interdict and placed temporary supervision on the Ndlambe Municipality, directing and compelling the municipality to take "reasonable steps" to manage the community's waste services sufficiently.²¹³ The judgement in this case inadvertently means that one can apply this judgement and judicial intervention to the matter of local governments that are failing to recycle and to the provincial government that fails to intervene. To date there are no court cases in South Africa where an entity or person with legal standing has approached the court to order any sphere of executive government to adhere to the principles of the NEMWA and first resort to reduction, reusing, recycling, recovering and treating waste before disposing the domestic waste in a landfill. As determined above,²¹⁴ the majority of domestic waste is directly disposed of in landfills and the state has yet to enforce and intervene to apply the waste hierarchy system in municipal waste management.

3.5 Chapter conclusion

Waste management has numerous statutory instruments that govern how municipalities should dispose of and manage waste. Effective waste management is an integral part of the realisation of the section 24 constitutional environmental right. The NEMA firstly recognises the importance of sustainable development, and that waste should be reused, recycled and treated²¹⁵ and through NEMA, the NEMWA regulates waste management.²¹⁶ There are also many government notices that have

²¹¹ Section 139 of the Constitution; also see Alberts and Van Rooyen "Solid-waste management" 524.

²¹² 2017 (2) SA 86 (ECG).

²¹³ *Kenton-on-Sea Ratepayers Association v Ndlambe Local Municipality* 2017 (2) SA 86 (ECG) para 115; also see *The Kgetlengrivier Concerned Citizens and Another v The Kgetlengrivier Local Municipality and Others* (JM 271/2020) [2020] ZANWHC 95 (12 January 2021) for an example where the Provincial Government failed to intervene with a failing municipality.

²¹⁴ See Chapter 2.4.

²¹⁵ See Chapter 1.1.

²¹⁶ See Chapter 3.1.1 and 3.2.1.

been issued regarding waste, such as the Collection Standards,²¹⁷ the NWMS²¹⁸ and other additional policies and regulations regarding recycling in the waste management sector.²¹⁹ One cannot argue that the legal instruments that govern municipalities' duty of waste management are extensive and frequently updated, however, it should be noted that there are currently specific regulations spelling out how the waste hierarchy should be implemented, especially recycling and the process and procedure of how a local government should separate, store, collect and recycle recyclable domestic waste, for example. Although the term and activity of "recycling" is mentioned several times in these instruments, one should consider whether these measures are successful in mandating and encouraging the local government and the local community (to an extent) to participate in source separation and the actual activity of recycling. Considering these legal instruments, the next chapter will investigate and evaluate four different municipalities as to whether their IWMPs reflect the vision that the NEMWA and other statutes which were discussed, had for the enforcement of the waste hierarchy and the principle of sustainable development.

²¹⁷ See Chapter 3.1.3 and 3.2.3.

²¹⁸ See Chapter 3.2.2.

²¹⁹ See Chapter 3.2.4.

Chapter 4 Local government case studies

Although each local government has the same duties and responsibilities to provide service delivery and to put the basic needs of the local community first, each municipality deals with its responsibilities uniquely and some municipalities handle these duties better than others.²²⁰ This chapter will investigate four separate local governments (eThekweni, Johannesburg, Ekurhuleni and Cape Town), and individually analyse and criticise their waste management by-laws in respect of recycling. The chapter will also investigate whether these municipalities have any successful recycling projects and what percentage of the domestic waste is recycled within their jurisdiction.

The following municipalities and their bylaws and IWMPs will be evaluated and criticised on the following requirements set out by the national legislation discussed in Chapter 2:

- Publication of municipal waste management bylaws;
- Provisions for source separation;
- Government investments in recycling facilities;
- Whether recycling activities within their jurisdiction are environmentally friendly;
- Provision for an industry waste management plan for waste generators;
- Encouragement of the relationship between the private and public sector;
- Whether the municipality's activities are in line with sustainable development;
- Provision for education opportunities for the local community about the importance of recycling;

²²⁰ Merten *Daily Maverick* 22 June 2021 1.

- In which way waste indiscretions are dealt with;
- Whether the community is invited to participate in recycling initiatives;
- Adherence to the waste hierarchy and avoiding landfill disposal;
- The collection of recyclable waste;
- Free municipal services for the poor who cannot afford to pay for it themselves.

4.1 *Municipal backgrounds and history*

4.1.1 eThekwini Municipality

The eThekwini Municipality is situated in Durban, KwaZulu-Natal and approximately 3.5 million people live in this metropolitan city.²²¹ eThekwini is the largest city in the province and the third largest city in South Africa. The city is known for their well-managed port and tourism.²²² The vision for the municipality is to become "Africa's most caring and liveable City, where all citizens live in harmony" by the year 2030 and their core values are listed as sustainability, caring, economically successful, smart and to reduce poverty.²²³ Concerning service delivery, this municipality is not without its failures and numerous problems were reported which include non-delivery of their recycling programme,²²⁴ water cuts as a result of shaft pump failure²²⁵ and raw sewage washed into Durban Harbour.²²⁶

4.1.2 City of Johannesburg Metropolitan Municipality

²²¹ eThekwini Municipality 2011 http://www.durban.gov.za/Discover_Durban/Pages/AboutEM.aspx.

²²² eThekwini Municipality 2011 http://www.durban.gov.za/Discover_Durban/Pages/AboutEM.aspx.

²²³ eThekwini Municipality 2011 http://www.durban.gov.za/Discover_Durban/Pages/AboutEM.aspx.

²²⁴ Magubane *IOL* 1.

²²⁵ Comis The South African 1.

²²⁶ Comis The South African 1.

The City of Johannesburg or "the city of gold" was established in 1886 and is to date known as the economic hub of South Africa.²²⁷ A 2021 census determined that there are approximately 5.7 million people living in Johannesburg²²⁸ (which makes Johannesburg the most populated city in South Africa) and in 2011 the government determined that 65% of people in the city have access to piped water.²²⁹ The Johannesburg Municipality's mission is to enhance levels of public participation and accountability with excellent service delivery and their vision for the city is to be responsive to the needs of the communities within their jurisdiction.²³⁰ Much like the eThekweni Municipality, the Johannesburg Municipality has had trouble with water shortages.²³¹

4.1.3 City of Ekurhuleni Metropolitan Municipality

The Ekurhuleni Municipality was officially established in 2000 and the Tsonga translation of "ekurhuleni" is "place of peace".²³² The current metro population is 3.9 million in 2021 which makes this city the third largest city in South Africa.²³³ The municipality's mission is to provide sustainable and human-centred service delivery which is of high quality, affordable and appropriate and their vision is to be a "Smart, Creative and Developmental City".²³⁴ Unfortunately this municipality has been known to struggle with failing to collect refuse waste,²³⁵ poor road management²³⁶ and sewage spills.²³⁷

²²⁷ City of Johannesburg Metropolitan Municipality date unknown https://www.joburg.org.za/work_/Pages/Work%20in%20Joburg/General%20Advice/Links/Overview.aspx

²²⁸ Macrotrends 2021 <https://www.macrotrends.net/cities/22486/johannesburg/population>

²²⁹ City of Johannesburg date unknown https://www.joburg.org.za/about_/Pages/About%20the%20City/About%20Joburg/Population-and-People.aspx - these number may not be the same in the year 2021.

²³⁰ City of Johannesburg date unknown https://www.joburg.org.za/about_/Pages/About%20the%20City/Mission-and-Vision.aspx.

²³¹ Maromo *IOL* 1.

²³² City of Ekurhuleni date unknown <https://www.ekurhuleni.gov.za/about-the-city/our-journey.html>

²³³ Macrotrends 2021 <https://www.macrotrends.net/cities/22484/ekurhuleni/population>.

²³⁴ City of Ekurhuleni date unknown <https://www.ekurhuleni.gov.za/about-the-city/corporate-statement.html>.

²³⁵ Mitchley *News24* 1.

²³⁶ Unknown *News24* 1.

²³⁷ Masungwini *City Press* 1.

4.1.4 City of Cape Town Metropolitan Municipality

Also known as the "Mother City", Cape Town is known for its luscious natural beauty and the Table Mountain world heritage site.²³⁸ Cape Town is home to 4,7 million people which makes this metropolitan the second largest and the oldest city in South Africa.²³⁹ The Municipality of Cape Town promotes five "core principles" for the Cape Townian²⁴⁰ society which are i) economic growth and jobs, ii) inclusion for all, iii) excellent service delivery and pro-active citizenship, iv) a safe city, and v) support for communities and building strong future generations. According to the 2021 Citizen Satisfaction Index, Cape Town has achieved the highest percentage of citizen satisfaction for the fifth year running, scoring 62 out of a possible 100,²⁴¹ although there have been a few reports about water delivery in informal settlements.²⁴²

4.2 **Municipal by-laws compared to the recycling standards of South African legislation**

As one can discern from chapter 4.1, each municipality has its own unique history, population statistics, mission and vision, and municipal service challenges. However, the freedom of being unique should not necessarily be experienced when it comes to waste management and what the NEMA, the NEMWA and other standards require of a municipality.²⁴³ The introduction of this chapter set out thirteen waste management requirements that a local government must adhere to in order to be in line with the legislative principles mentioned above.²⁴⁴ Below is a table which compares the chosen four municipalities to determine whether the thirteen legal requirements are provided for in their by-laws.

²³⁸ City of Cape Town date unknown
<https://www.capetown.gov.za/Explore%20and%20enjoy/Cape-towns-history-and-heritage/Understanding-our-history-and-heritage/What-is-our-history>.

²³⁹ Macrotrends 2021 <https://www.macrotrends.net/cities/22481/cape-town/population>.

²⁴⁰ City of Cape Town date unknown
<https://www.capetown.gov.za/Explore%20and%20enjoy/Cape-towns-history-and-heritage/Understanding-our-history-and-heritage/What-is-our-history>.

²⁴¹ Staff Writer *BusinessTech* 1.

²⁴² Charles *News24* 1.

²⁴³ See Chapter 3.

²⁴⁴ See Chapter 3.2.

4.2.1 Comparison

Table 1 compares the municipal waste by-laws of the four cities. The three different colours represent the degree of correspondence which the provisions have to those provided for in national legislation; i) green represents complete fulfilment, ii) orange represents partial fulfilment, and iii) red represents non-fulfilment.

Table 1: Table of municipal waste by-laws compared to recycling principles and requirements

Legal Requirements	Local Government Case Studies in South Africa			
	eThekwini Municipality Waste Removal By-law	Waste Management By-laws of the City of Johannesburg	Solid Waste By-laws of the Ekurhuleni Metropolitan Municipality	Cape Town Integrated Waste Management By-law
Publication of municipal waste management by-laws	The most recent waste removal by-law was published by the eThekwini Municipality in 2016.	The first by-law was published in 2013 and is up to date as of 26 November 2021.	The Ekurhuleni Municipality published their most recent by-law in 2021.	The first Cape Town by-law was published in 2016
Provisions for source separation	Reg 38(2)(f) states that a waste generator must stipulate in their IWMP how they intend to separate recyclable and non-recyclable material.	Reg 22 deals with the obligation to separate waste and 22(1) states that the council <i>may</i> prescribe details of source separation.	The obligation to separate waste into non-recyclables and recyclables is provided for in reg 30(1) if the municipality decides to make such obligation compulsory through a municipal notice.	Reg 4 pertains to the obligations of the waste generator and 4(1)(b) explicitly obliges the generator to separate waste into recyclable and non-recyclable waste.
Government investments in recycling facilities	There is no obligation mentioned that the municipality must invest in and/or develop recycling facilities.	There is no obligation mentioned that the municipality must invest in and/or develop recycling facilities.	Reg 25 reads that the municipality must establish appropriate waste facilities for the sorting and recycling of waste.	There is no obligation mentioned that the municipality must invest in and/or develop recycling facilities.

Legal Requirements	Local Government Case Studies in South Africa			
	eThekweni Municipality Waste Removal By-law	Waste Management By-laws of the City of Johannesburg	Solid Waste By-laws of the Ekurhuleni Metropolitan Municipality	Cape Town Integrated Waste Management By-law
Whether recycling activities within their jurisdiction is environmentally friendly	Reg 40(2)(a) provides that a person who applies for a permit must submit an environmental impact assessment which shows that the recycling will be less harmful to the environment than waste disposal.	The by-law's main objectives are listed in reg 3 and 3(a) states that waste activities (including recycling) must be done in an environmentally sound manner and Reg 14(c) and 20(1) provides that waste generators must dispose of or treat non-recyclables in a sound manner.	Reg 36(5)(b) stipulates that a waste generator must ensure that <i>non-recyclable</i> waste must be disposed of in an environmentally sound matter but does not place the environmentally sound obligation on the rest of the waste activities (such as recycling).	Reg 4(1)(d)(iii) obliges waste producers/generators to dispose of their recyclable waste by delivering the waste to a licenced facility which will dispose of it in an "environmentally sensitive manner".
Provision for an integrated waste management plan for waste generators	Chapter 8 deals with waste management plans and stipulates that certain waste generators must submit an IWMP to the municipality.	Chapter 2 deals with IWMPs and reg 6 deals with the preparation and reporting of a IWMP and reg 7 describes the content of the IWMP.	Chapter 6 provides details and requirements for an IWMP from a waste generator and reg 56(1)(f) states that the municipality must establish a waste information system for the purpose of preparing the municipality's IWMP.	The provision for an IWMP is set out in reg 10 which states that all specific waste generators must submit an IWMP and lists the required content which needs to be present in the IWMP.
Encouragement of the relationship between the private and public sector	The by-law description mentions that it will regulate "private waste removal contractors" but does not mention any initiatives that should be taken to	There is no mention of encouraging and strengthening the relationship between the private and public sector.	There is no mention of encouraging and strengthening the relationship between the private and public sector.	There is no mention of encouraging and strengthening the relationship between the private and public sector.

Legal Requirements	Local Government Case Studies in South Africa			
	eThekwini Municipality Waste Removal By-law	Waste Management By-laws of the City of Johannesburg	Solid Waste By-laws of the Ekurhuleni Metropolitan Municipality	Cape Town Integrated Waste Management By-law
	encourage the relationship.			
Whether the municipality is in line with sustainable development	There is no mention of sustainable development.	The by-law provides a definition of sustainable development in reg 1 and reg 3(b) states that the law must promote sustainable development.	The Preamble of the by-law recognises the importance of sustainable development as well as reg 13 which promotes sustainable development and environmental justice.	The Preamble only mentions that the municipality has an obligation to manage waste to ensure a sustainable environment.
Provision for education opportunities for the local community about the importance of recycling	There is no provision that places a duty on the local government to reach out to local communities to educate and encourage recycling.	There is no provision that places a duty on the local government to reach out to local communities to educate and encourage recycling.	There is no provision that places a duty on the local government to reach out to local communities to educate and encourage recycling.	There is no provision that places a duty on the local government to reach out to local communities to educate and encourage recycling; however, the by-law requires entities to provide for the education of customers regarding the importance of recycling in reg 10(4).
In which way waste indiscretions are dealt with	Chapter 13 deals with offences and penalties and reg 54(1) provides that waste indiscretions may be liable for a fine not exceeding R500 000 or maximum three	Reg 40 deals with prohibited conduct of a permit holder and chapter 8 covers waste indiscretions such as littering, illegal dumping. There is no listed punishment for	Chapter 13 covers offences and penalties and reg 76 lists the type of offences a waste actor and reg 76(2) states that a liable person is subject to a fine of R100 000 or maximum three	Reg 23 deals with offences and penalties and reg 23(5) states that an offender is subject to a fine (the by-law does not stipulate what the maximum fine is) or/and a maximum of three

Legal Requirements	Local Government Case Studies in South Africa			
	eThekweni Municipality Waste Removal By-law	Waste Management By-laws of the City of Johannesburg	Solid Waste By-laws of the Ekurhuleni Metropolitan Municipality	Cape Town Integrated Waste Management By-law
	years' imprisonment.	these indiscretions.	years' imprisonment.	years imprisonment. Reg 23(6) in addition provides that the court may order additional penalties such as damage repair, environmental rehabilitation and waste removal.
Whether the community is invited to participate in recycling initiatives	There are no provisions which invite the community to participate in sustainable waste management.	Reg 3(e) encourages and ensures that municipal residents and businesses should ensure environmentally friendly waste management practices.	Reg 14 states that the by-law seeks to "promote participation by all persons" with regard to sound waste management practices.	There are no provisions which invite the community to participate in sustainable waste management.
Adherence to the waste hierarchy and avoiding landfill disposal	There is no provision which mentions the adherence to waste hierarchy or landfill disposals.	Reg 2 describes the duty to adhere to the waste hierarchy.	Reg 19(3)(a) states that access to municipal service must take the waste hierarchy into account and this is also reflected in the Preamble, and the objectives of the by-law in regs 4(a) and 6.	There is no provision which mentions the adherence to waste hierarchy or landfill disposals
The collection of recyclable waste	Reg 3 lists the objectives of the by-law and states that the objectives are to provide for the collection and removal of waste but does not	Reg 2(1)(a) has the duty to ensure that all waste is collected but does not require the municipality to collect recyclable waste specifically.	The provision of the municipal service to collect waste is provided for in reg 20(1), however there is no obligation on the municipality to	Reg 4(1)(h) obliges a waste generator to contract with the city or a service provider to collect their waste, however there is no obligation on the municipality

Legal Requirements	Local Government Case Studies in South Africa			
	eThekwini Municipality Waste Removal By-law	Waste Management By-laws of the City of Johannesburg	Solid Waste By-laws of the Ekurhuleni Metropolitan Municipality	Cape Town Integrated Waste Management By-law
	specifically refer to the collection of recyclable waste.	There is only an obligation on the waste generator to ensure that recyclable waste is collected to an "accredited service provider".	specifically collect recyclable waste.	to specifically collect recyclable waste.
Free municipal services for the poor who cannot afford to pay for it themselves	No regulations relating to helping disadvantaged communities with free or affordable service delivery.	No regulations relating to helping disadvantaged communities with free service delivery, however reg 24(1) stipulates that the council has a duty to the community to ensure affordable municipal services and reg 24(3)(c) states that the municipality must take into account the factor of the need for affordability when ensuring service delivery.	No regulations relating to helping disadvantaged communities with free service delivery, however reg 19(1)-(2) provides that the municipality has a duty to the local community to provide affordable services and reg 19(2) states that the factor of affordability and equity should be taken into account in terms of municipal services.	No regulations relating to helping disadvantaged communities with free or affordable service delivery.

4.2.2 Findings of the table

Below the outcomes of the above table will be discussed for eThekwini, the City of Johannesburg, Ekurhuleni and the City of Cape Town.

4.2.2.1 Publication of municipal waste management bylaws

All municipalities have published a waste management by-law.

4.2.2.2 Provisions for source separation

Two out of the four municipalities (eThekweni and Cape Town) oblige generators to separate waste at the source.

4.2.2.3 Government investments in recycling facilities

Only one municipality (Ekurhuleni) states that municipalities should establish recycling facilities, however. one may question whether it would be more effective if a limit of minimum facilities can be prescribed based on the size of the city.

4.2.2.4 Whether recycling activities within their jurisdiction are environmentally friendly

Two municipalities (eThekweni and Johannesburg) provide that not only must the disposal or treatment of waste be environmentally friendly, but also that the recycling activities should also be environmentally sound and be sounder than treatment and disposal.

4.2.2.5 Provision for an integrated waste management plan for waste generators

This is one of the three waste management requirements that all municipalities provided for in their by-laws.

4.2.2.6 Encouragement of the relationship between the private and public sector

Not one municipality fully encourages private-public relationships, which is problematic since the private sector is more advanced and successful in terms of recycling domestic waste.²⁴⁵

4.2.2.7 Whether the municipality is in line with sustainable development

²⁴⁵ See Chapter 2.4.2.

It is problematic that only three of the by-laws (Johannesburg, Ekurhuleni and Cape Town) include sustainability since sustainability is one of the core principles in the NEMA.²⁴⁶

4.2.2.8 Provision for education opportunities for the local community about the importance of recycling

Amongst the worst performing in these factors, no municipality is obliged to educate the local community about recycling. This contributes to the notion that people don't necessarily recycle because they don't want to, but rather because they don't know how.²⁴⁷ If households were educated and encouraged to sort waste at home then the municipality would also spare resources and divert the money to the actual process of recycling.

4.2.2.9 In which way waste indiscretions are dealt with

All municipalities have a chapter or regulation which sets out the consequences of waste indiscretions or offences. Ekurhuleni Municipality has the lowest maximum fine amount and Cape Town Municipality does not prescribe a minimum amount and an offender can be both fined and imprisoned unlike the other municipalities who offer discretion regarding which penalty will be appropriate. In addition to fines and imprisonment, the Cape Town by-law also provides that an offender can be subject to additional penalties which makes Cape Town the strictest municipality with regard to waste indiscretions. One can access the maximum fine amount and compare it to the actual cost of waste indiscretions. Research has shown that the City of Cape Town alone spends between R110 million – R120 million a year to clean up illegal dumping,²⁴⁸ which makes one question whether the maximum amount of fines prescribed are sufficient enough to rehabilitate the damaged environment.

4.2.2.10 Whether the community is invited to participate in recycling initiatives

²⁴⁶ The Preamble, s 3 and 4 of the NEMA.

²⁴⁷ See footnote 168.

²⁴⁸ Ntseku *News24* 1.

Falling under the same category of waste education, community participation in terms of sustainable waste management can make a significant difference and improvement.²⁴⁹ Both Johannesburg and Ekurhuleni encourage the local communities to participate in sustainable and environmentally sound waste management.

4.2.2.11 Adherence to the waste hierarchy and avoiding landfill disposal

The strict following of the waste hierarchy is an essential cornerstone for effective waste management and arguably the most significant requirement of the NEMWA. The two municipalities' (eThekweni and Cape Town) exclusion of this principle is troublesome and makes it easier for the municipality to first resort to landfill disposal, since there is no obligation from the by-law to first resort to reducing, reusing, recycling, recovering and then disposing.

4.2.2.12 The collection of recyclable waste

The third requirement which is not included in the by-laws of all the municipalities can perhaps be the most crucial in terms of ensuring that domestic waste gets recycled. None of these municipalities provide the municipal service of collecting exclusively recyclable waste (even for a service price) and households who actively participate in waste sorting and recycling are left to their own devices with regard to responsibly dispose the recyclables. The majority collectors of recyclable waste are the private sector, i.e. informal waste pickers and independent collectors.

4.2.2.13 Free municipal services for the poor who cannot afford to pay for it themselves

Recent statistics have shown that South Africa has an unemployment rate of 35% in 2021, which is the highest recorded unemployment rate since 2008.²⁵⁰ It is therefore crucial for the national, provincial and local government to consider the current economic environment in South Africa (especially in the midst of the COVID-

²⁴⁹ Pratama et al 2020 *Advances in Social Science, Education and Humanities Research* 78.

²⁵⁰ Trading Economics 2021 <https://tradingeconomics.com/south-africa/unemployment-rate>.

19 pandemic) and to provide for the basic needs of the community. No municipality offers programmes for disadvantaged poor and only two municipalities are obliged to consider "affordability" as an influential factor.

4.2.2.14 The best and worst performing local government

Table 2 sets out the best and worst performing local government (as well as the political party in charge at the time of the research – pre-2021 local government elections) in relation to the comparison of waste management by-laws as set out in Table 1.

Table 2: The best and worst performing local government.

	City	Total requirements included	Province	Local party
1 =	City of Johannesburg Municipality	7/13	Gauteng	ANC
1 =	Ekurhuleni Municipality	7/13	Gauteng	ANC
2	eThekweni Municipality	5/13	KwaZulu-Natal	ANC
3	City of Cape Town Municipality	4/13	Western Cape	DA

4.3 Chapter conclusion

This chapter has established the most important requirements of South African waste management governance. One can agree that all of the thirteen requirements listed are essential for a local government to both ensure a sustainable and healthy environment and to meet the basic needs of the local community. Each by-law was evaluated and investigated to establish if the by-law had any provisions which provide for the listed requirements. Upon evaluation of the Table 1, not one of the

case study municipalities have met all the requirements for waste management and only two of the four met 50% of them. This means that the local legislation in South Africa is not up to standard with what the national and provincial legislation provides which needs to be included in local statutes.

Chapter 5 Conclusion and recommendations

The aim of this study was to analyse current national, provincial and local legislation to determine the governance role of local government in ensuring recycling. From the study it is clear that local government has a governance role to play in ensuring recycling. This is based on the obligations set out in the Constitution, NEMA and NEMWA.

Many countries have invested millions into the recycling industry and countries like Germany and South Korea recycle more than 80% of their waste and have almost eradicated the need for landfill dumping,²⁵¹ and has placed the duty to follow the waste hierarchy and the principle of circular economy directly on the waste producer and not entirely on the local government²⁵² to ensure that domestic waste is recycled. In South Africa a waste management hierarchy is set in legislation, and various role players participate in waste management. The public actors include all levels of the executive government, while the private actors include buy-back centres, households and informal waste pickers.²⁵³ The exclusion of one or more of these role players may have detrimental effects on recycling efforts. It is encouraging to see that the government has identified the challenges they face as a service deliverer of waste management and their challenges include the inactive consideration of the waste hierarchy and public education regarding recycling.²⁵⁴

The Constitution, the NEMA, the NEMWA, the Collection Standards and the NMWS all provide that waste must be managed in a sustainable manner and waste management should strictly be acted out in terms of the waste hierarchy.²⁵⁵ Many provisions also provide that if the local government resorts to recycling or treating waste it must be less harmful to the environment than it would be to dispose waste in a landfill.²⁵⁶ The chances of recycling being more environmentally friendly than

²⁵¹ See Chapter 2.3.

²⁵² See Chapter 3.2.

²⁵³ See Chapter 2.4.

²⁵⁴ See Chapter 2.6.

²⁵⁵ See Chapter 2.5.

²⁵⁶ See Chapter 3.2.4.2.

landfill disposal is very high and many scientific studies have proven this.²⁵⁷ Not only is reusing, reducing and recycling more eco-friendly, many countries have welcomed waste as a source of income such as Sweden that uses 52% of their waste to produce energy.²⁵⁸ Other organisations reuse plastic waste to develop housing projects in Africa.²⁵⁹

South African waste legislation recognises the importance of recycling and sustainable waste management,²⁶⁰ and has through these statutes obligated and encouraged local governments to incorporate important recycling characteristics and principles into their by-laws and municipal activities. The four case-study municipalities (eThekweni, Johannesburg, Ekurhuleni and Cape Town) and their waste management by-laws were assessed, compared and criticized based on the legislative recycling requirements identified in Chapter 3.²⁶¹ Out of the thirteen requirements, only three requirements are fully complied with by all the municipalities' by-laws. This indicated that the by-laws developed are not fully in line with South African legislation, which essentially means that the local governments are bound to amend this otherwise they will be in contravention of the national legislation. It seems there is a lack of a working relationship between the private and public sector, the provision and opportunities to educate the local community about the importance of recycling, the explicit and specific waste collection service of recyclable waste (which is separated at the source) and the provision of free municipal services to poor and disadvantaged communities.²⁶²

Based on the aforementioned, the following recommendations are made:

- i) *All* municipalities should introduce by-laws regulating waste management in their jurisdiction;

²⁵⁷ See Chapter 2.2.

²⁵⁸ Kim and Mauborgne date unknown <https://www.blueoceanstrategy.com/blog/trash-treasure-sweden-recycling-revolution/>.

²⁵⁹ See footnote 95.

²⁶⁰ See Chapter 2.3.

²⁶¹ See Chapter 4.1.

²⁶² See Chapter 4.1.2.

- ii) The by-laws should comply with the thirteen recycling requirements identified in paragraph 4 and Table 1.
- iii) Municipalities should invest in recycling incentives, facilities and technologies.²⁶³
- iv) The regulation and management of informal waste pickers with regard to minimum wage, health and occupational hazards must be addressed as a matter of urgency.²⁶⁴
- v) Extended and more strict pressure on big waste companies (such as Coca Cola, Pepsi and Nestlé) to minimise waste, produce products which are all recyclable and to encourage recycling to their customers. The introduction of the EPR regulations should be expedited.²⁶⁵
- vi) Strict enforcement of the waste hierarchy and the absolute minimisation of landfill waste disposal should be introduced.²⁶⁶
- vii) By-laws should force all households to separate waste into recyclables and non-recyclables.²⁶⁷
- viii) Government should introduce investment and encourage communal education with regard to the simplicity and importance of recycling, and also to suggest to higher spheres to incorporate sustainable waste management into child education.²⁶⁸
- viii) Municipalities should provide recyclable waste collection service delivery to further incentivise household separation participation, employment creation and further focus on recycling rather than sorting waste.²⁶⁹

²⁶³ Problem identified in Chapter 3.2.3.2.

²⁶⁴ Problem identified in Chapter 2.4.2.3.

²⁶⁵ Problem identified in Chapter 2.5.1.

²⁶⁶ Problem identified in Chapter 2.5.4.

²⁶⁷ Problem identified in Chapter 3.2.3.1 and 4.2.1.

²⁶⁸ Problem identified in Chapter 4.2.1.

²⁶⁹ Problem identified in Chapter 4.2.1.

ix) Lastly, to publish norms and standards which solely and exclusively regulate governmental recycling which is in line with the legislative requirements such as what was done with landfill disposal in the *National norms and standards for disposal of waste to landfill*

ANNEXURE 1: Recycling Collage



This Elvive Conditioner container states that the container is not recyclable.



These containers are recycling depots inside the parking lot of Pick n Pay, William Nicol Johannesburg.



Ollvoss is an informal waste picker in Johannesburg. Depending what type of waste he collects, Ollvoss makes between R200 -R250 a day. He gave permission that I may use the photo in my dissertation.



The recycling space outside my house in Johannesburg. We have 2 bins for glass and plastic and bags for tins and paper

This is Mulalo Nego Negondeni with his mini replica of Johannesburg made out of reused waste Photo provided by Mr Negondeni



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