Prosecution of health care risk waste offenders in terms of South African law

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ABSTRACT

The proper management of Health Care Risk Waste (HCRW) is essential in order to protect the natural environment and the wellbeing of humans and animals. This study was undertaken to determine the extent to which the South African legal framework regulates HCRW management. The study focuses on the definition of HCRW in line with its various categories and various treatment methods. The current study explores the serious impact that the improper management of HCRW causes to the environment and the resulting health impacts attached to the illegal disposal of HCRW. In addition, the study discusses section 24 of *the Constitution of the Republic of South Africa,*1996, the provisions of the *National Environmental Management Act* 107 of 1998 (NEMA) and the *National Environmental Management: Waste Act* 59 of 2008 (NEMWA) in relation to HCRW.

The HCRW management procedures namely segregation, classification, labelling, packaging, storage, collection and treatment are also considered, and findings reveal that presently, some provinces have promulgated legislation specifically relating to HCRW while some provinces remain guided by SANS. A discussion of the various challenges faced by the criminal justice system and reveals that training of law enforcement officers is one of the main issues that causes these underlying challenges.

Key words: *Prosecution, waste offenders, health care risk waste, South African law.*

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To Buckles, thank you for all the long nights you spent with me.

DEDICATION

Written and dedicated to my furry baby, Buckles.

LIST OF ABBREVIATIONS

CPA	Criminal Procedure Act
DEAFF	Department of Environmental Affairs, Forestry and Fisheries
DFFE	Department of Forestry, Fisheries and the Environment
DPP	Director of Public Prosecutions
EIA	Environmental Impact Assessment
EMI	Environmental Management Inspectorate
HCRW	Health Care Risk Waste
HIV	Human Immunodeficiency Virus
HPCSA	Health Professions Council of South Africa
MEC	Member of the Executive Council
NECER	National Environmental Compliance and Enforcement Report
NEMA	National Environmental Management Act
NEMAQA	National Environmental Management: Air Quality Act
NEMWA	National Environmental Management: Waste Act
NPA	National Prosecuting Authority
NWMS	National Waste Management Strategy
PPE	Personal Protective Equipment
SACJ	South African Journal of Criminal Justice
SAJELP	South African Journal of Environmental Law and Policy

SANS	South African National Standards
SAPS	South African Police Services
SEMA	Specific Environmental Management Acts
WHO	World Health Organisation
WMP	Waste Management Plan

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Chapter 1
Introduction

1.1 Problem statement

The *Constitution of the Republic of South Africa*, 1996 (Constitution) provides that everyone has the right to an environment that is not harmful to their health and well-being.[1] The illegal disposal of health care risk waste (hereafter HCRW) does not only pose danger to the natural environment but also endangers the health of human beings.[2]

HCRW is defined as:

> Any waste which is produced in the diagnosis, treatment or immunisation of human beings or animals or waste that has been in contact with blood, bodily fluids or tissues from humans or infected animals from veterinary practices and includes but is not limited to infectious waste, pathological waste, laboratory waste, genotoxic waste, sharps waste, chemical waste, pharmaceutical waste and radioactive waste.[3]

HCRW contains harmful micro-organisms known as pathogens amongst other.[4] The public sector, consisting of public hospitals and clinics as well as the private sector comprising private hospitals, private clinics and doctors' surgeries, laboratories, mortuaries, animal research, testing laboratories, blood banks and old age homes mainly generate HCRW.[5] Healthcare facilities protect and save lives, but they also generate HCRW that might harm others and the environment. This waste must be disposed of in a specific and safe manner. [6]

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[1] Section 24(a).
[2] Van Rugge 2018 *Medical Chronicle* 44.
[3] Reg 1 of Proposed National Health Care Risk Waste Management Regulations GN R463 in GG 41601 of 30 April 2018 issued in terms of section 69 read with section 72 and 73 of the *National Environmental Management: Waste Act* 59 of 2008 (NEMWA).
[4] Environment News South Africa 2018 https://www.environment.co.za/environmental-issues-news/human-tissue-old-bandages.
[5] World Health organisation Health-Care Waste2018 https://www.who.int/news-room/fact-sheets/detail/health-care-waste.
[6] Du Toit and Bodestein 2014 *South African Medical Journal* 14.

The risk of illegal disposal of HCRW bears various environmental dangers such as the transfer of bacterial infections, transfer of diseases through needle pricks and exposure to diseases such as HIV, to mention a few.[7] There is also a risk of water pollution which is mainly caused by HCRW being dumped in rivers or the ocean or transferred via rivers to the ocean.[8]

Presently, South Africa is facing a crisis of illegal disposal of HCRW at waste sites earmarked for household waste or in the veld, where a variety of hospital waste ranging from body parts tissue to surgical equipment can be found.[9] The reasons presented for this conduct include a lack of awareness about the health hazards and the absence of waste management and disposal systems.[10] There is also a perception that there is insufficient capacity to treat the amount of HCRW produced[11] and also that the costs involved in incineration and transport are too steep, which leads to illegal disposal.[12] The Covid-19 pandemic also highlighted the importance to ensure that the generators of HCRW dispose it of as prescribed by law.[13]

A waste generator is defined as "any person whose actions, production processes or activities including waste management activities results in the generation of waste".[14] HCRW generators have a duty of care to handle, store, transport and dispose of waste in an environmentally sound and legally compliant manner.[15] This obligation is also known as the life cycle responsibility.[16] Private sector service providers mostly carry

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[7] World Health Organisation 2018 https://www.who.int/news-room/fact-sheets/detail/health-care-waste, see also Retief 2010 *Occupational Risk* 21 and Van Rugge 2018 *Medical Chronicle* 44.
[8] Nkwana 2017 *Servamus* 34.
[9]Environment News South Africa 2018 https://www.environment.co.za/environmental-issues-news/human-tissue-old-bandages.
[10] World Health organisation 2018 https://www.who.int/news-room/fact-sheets/detail/health-care-waste.
[11] Olaniyi, Ogola and Tshitsangano 2018 *Open Environmental Science* 34.
[12] Van Schalkwyk 2013 *Resource* 41.
[13]ISWA "Covid-19: A Letter Concerning Hazardous Waste Management" 2020. https://www.iswa.org/iswa/covid-19/covid-19-news/covid-19-news-detail/article/covid-19-and-hazardous-waste-management/1628/.
[14] Reg 1 in GN R634 in GG 36784 23 August 2013 issued in terms of section 69 read with section 73 of the NEMWA.
[15] Section 16(1) of NEMWA read with section 28 of *National Environmental Management Act* 107 of 2008 (NEMA).
[16] Section 2(4)(e) of NEMA.

out the removal, transportation and treatment or disposals. The various medical and care institutions, mentioned above, appoint them, and in the case of the public sector, they are appointed following a tender process.[17]

In order to curb the dangers of illegal disposal of HCRW, the *National Environmental Management Waste Act*[18] (NEMWA) requires that a generator of waste takes all reasonable measures to avoid the generation of waste, and where such generation cannot be avoided to minimise the toxicity and amount of waste that is generated.[19] A waste generator is expected to ensure that waste is handled by authorised service providers; disposal must be handled by a waste disposal facility licenced and authorised in terms of the NEMWA.[20]

The disposal of waste must therefore be done in a manner that is not harmful to the well-being of human beings and the environment in accordance with the 1996 Constitution of the Republic of South Africa and the NEMWA. Section 16 of the NEMWA specifically places a general duty of care[21] in respect of waste management and section 26 prohibits the disposal of waste in a manner that is likely to cause pollution or harm to human health.[22]

Waste generators and waste managers are required to enter into agreements regarding collection, storage and disposal as set out in the South African National Standards 10248-1:2008.[23] These agreements describe the type of waste generated and treated or disposed, the conduct of all contributors and possible exclusion of liability. It is however, unclear whether a generator can in terms of the agreement be exonerated from criminal liability for HCRW disposed of improperly by other role players.

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[17] Eleftheriades 2010 *Resource* 34, see para 3.9 below for a discussion on the *Preferential Procurement Policy Framework Act* 5 of 2000.
[18] 59 of 2008.
[19] Section 16 of NEMWA, read with section 2(4)(a)(iv) of NEMA. See also Nkwana 2017 *Servamus* 34.
[20] Reg 9 GN R463 in GG 41601 30 April 2018.
[21] See also BN 129 in GG 27112 17 December 2004.
[22] Section 28 of NEMA has similar provision in general to prevent pollution and section 19 of the *National Water Act* 36 of 1998 in relation to the pollution of water.
[23] Management of healthcare waste - Part 1: Management of healthcare risk waste from a healthcare facility. Hereafter referred to as SANS 10248-1:2008.

In order to give effect to the 1996 Constitution of the Republic of South Africa, the Department of Forestry, Fisheries and the Environment (DFFE)[24] appoints environmental management inspectors (EMIs) in terms of the *National Environmental Management Act* (NEMA)[25] to ensure that environmental legislation (including the NEMWA) is followed and enforced.[26] Amongst other duties, the EMIs are tasked to investigate conducts that are inconsistent with the principles of the NEMA,[27] to inspect premises in order to ascertain whether legislation is being followed, to enforce legislation directives and to administrate relevant procedure with the assistance of the South African Police Services (SAPS).[28] Following this, the EMIs are expected to hand over matters involving contravention of the provisions to the National Prosecuting Authority (NPA) for prosecution of offenders.[29]

Sections 67 and 68 of the NEMWA create offences for the contravention of the NEMWA provisions and penalties for persons found guilty of doing so. To supplement the NEMWA provisions, the Minister of Health published proposed regulations relating to Health Care Waste Management in health establishments in 2014[30], and in 2018 the Minister of Environmental Affairs also published a set of proposed National Health Care Risk Waste regulations[31] which create offences for contravention of regulations and penalties. Both proposed regulations have not been promulgated yet.[32]

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[24] An MEC responsible for environmental affairs may also appoint EMIs provincially – section 31C of NEMA. The DFFE was previously known as the Department of Environmental Affairs, Forestry and Fisheries (DEAFF), Department of Environmental Affairs and the Department of Water and Environmental Affairs. In this study the most recent name DFFE will be referred to except in instances where it makes historical sense to mention one of the former names.

[25] 107 of 1998.

[26] Section 31B of NEMA.

[27] Section 2 of NEMA.

[28] Section 31G of NEMA. See also section 31O of NEMA.

[29] Department of Environment, Forestry and Fisheries https://www.environment.gov.za/strategicissues/fightingcrime.

[30] GN R375 in GG 37654 of 23 May 2014 issued in terms of section 90 of the *National Health Act* 61 of 2003.

[31] GN R463 in GG 41601 of 30 April 2018, section 69 read with section 71 of NEMWA empowers ministers to make regulations and to prohibit certain conduct.

[32] The research reflects the position as it was at the time of the completion of the research for the mini dissertation November 2021.

Since inception of the Environmental Management Inspectorate, compliance monitoring and enforcement work has increased.[33] The *National Environmental Compliance and Enforcement Report 2019/2020* reflects an increase from 1028 case dockets registered in 2018/2019 to 1364 registered in 2019/2020 and a total of 47 convictions secured,[34] yet the results of their efforts remain questioned.[35] Criminal law processes have limited ability to achieve the environmental law aims of preventing illegal dumping of waste, cleaning up pollution and rehabilitating degraded environments.[36] It seems that issues raised particularly in relation to the enforcement of environmental law rules relate to fault attached to disposers of waste only, as opposed to fault attached to all parties involved in the generation, storage, transportation and ultimately the disposal of HCRW.[37]

Poor investigations, lack of expertise among criminal justice officials,[38] are further reasons that the system struggles to achieve the objectives of environmental law and specifically to prosecute crimes related to the illegal disposal of HCRW. A further concern is the ever-increasing fraud and corruption in the tender processes which also lead to compliance setbacks, as at times, service providers are appointed based on political affiliations[39] or without accurate verifications of qualifications and experience.[40] It therefore seems that there is a need to determine to what extent the law provides for the investigation of HCRW offences and the prosecution of HCRW offenders. Such an exposition could inform the National Prosecuting Authority and its prosecutors and pave way for more prosecution of HCRW offenders.

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[33]DFFE https://www.environment.gov.za>GREENSCORPIONS Protecting South Africa's future-Department of Environmental Affairs.

[34]The National Environmental Compliance and Enforcement Report (NECER) 2019/2020 https://www.gov.za/sites/default/files/gcis_document/202011/environmental-compliance-2020-report.pdf.

[35] Centre for Environmental Rights: Full Disclosure; The truth about corporate environmental compliance in South Africa 2015 https://fulldisclosure.cer.org.za/2015/download/CER-Full-Disclosure.pdf.

[36] Section 28 of NEMA. See also Section 19 of the *National Water Act 36 of 1998*.

[37] See chapter 4 below.

[38] Murombo and Munyuki 2019 *PER/PELJ* 22.

[39] Foull 2011 https://mg.co.za/article/2011-05-27-limpopos-toxic-tenders-exposed/.

[40] Erasmus 2020 https://www.news24.com/citypress/business/war-over-medical-waste-controversial-tender-follows-former-kzn-health-mec-20200210.

1.2 Research question and aim of the study

To achieve the broader goal of the study, the following main research question is to be addressed:

To what extent does the law provides for the investigation of healthcare risk waste offences and prosecution of healthcare risk waste offenders?

This study aims to discuss the extent to which the law provides for the investigation of healthcare risk offences and the prosecution of healthcare risk waste offenders. In furtherance of the broader goal of the study, the following sub-aims are pursued:

- To discuss the concept of healthcare risk waste health and environmental risks as well as the reasons for contravention of the law by waste generators and incinerators.
- To analyse the legislation dealing with HCRW.
- To investigate waste management agreements entered into by HCRW generators and disposal companies.
- To determine the rules relating to the investigation and prosecution of HCRW offences.
- To make recommendations as to the investigation and prosecution of HCRW offenders.

1.3 Research methodology and outline of the study

This mini-dissertation is a desktop study; its aim is fulfilled by means of an evaluation of applicable legislation, policy case law, SANS standards, supported by textbooks, journal articles and other relevant literature. The study also refers to Annual Reports and other government documents and data in relation to the investigation and prosecution of HCRW offences. The disposal of HCRW does not only relate to legal issues only, and where necessary the study also refers to literature from other disciplines.[41]The study first provides a background to HCRW in Chapter 2 and it discusses

[41] The author acknowledges the caveat that lawyers are not experts in the field of natural science or medical science. However, lawyers need to take notice of the publications in these fields to understand the role the law plays in this regard.

the HCRW management chain followed by a discussion on the investigation and prosecution of offenders in chapters 3 and 4. Chapter 5 concludes the study with recommendations.

Chapter 2
Health care risk waste

2.1 Introduction

This chapter discusses the nature of HCRW, the various categories of HCRW, the treatment and disposal methods available to external service providers and the implications of the improper disposal to the members of the public as well as the environment. This chapter also considers the life cycle of HCRW as one of the main values of waste management.

2.2 Background

As stated above in Chapter one, in the day-to-day tasks of health care facilities, HCRW is generated. HCRW refers to any waste generated in health facilities such as hospitals, clinics, community health centres, dental facilities and others that has the potential to cause adverse effects on not only human beings but also the environment if not properly regulated.[42] Covid-19 highlighted the importance of the proper disposal of HCRW in order to avoid the spread of the virus. Challenges related to stockpiling of HCRW due to the unusual generation of HCRW from health care facilities are considered as improper waste management practices that may have escalated the spread of the virus.[43] In order to regulate the usage and disposal of HCRW, generators are required to put in place waste management procedures. Waste management is defined as all administrative and operational activities involved in the handling, treatment, storage, recovery recycling and disposal of HCRW which also includes transportation.[44] The category of waste might influence the treatment and disposal method of the waste as set out in the following paragraphs.

[42] World Health Organisation *Handling, storage and transportation of health care waste* 61.
[43] Sarkodie and Owusu 2020 *Environment, Development and Sustainability* 7952.
[44] SANS 10248-3 Management of Health Care Waste.

2.3 Categories of HCRW

HCRW is regarded as hazardous waste in terms of Schedule 3 of the NEMWA. Hazardous waste is defined as:

> Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles.

HCRW is divided into various categories, namely, chemical waste, infectious waste, pathological waste, sharps waste, pharmaceutical waste, cytotoxic waste, genotoxic waste, isolation waste, laboratory waste and radioactive waste, these are defined as follows;[45]

- Chemical waste means discarded solid, liquid and gaseous chemicals used in providing a health care service and includes but is not limited to pharmaceutical waste, hazardous waste from diagnostic and experimental work and hazardous waste used in cleaning, housekeeping and disinfecting[46]

- Infectious waste means waste which contains or may be reasonably presumed to contain infectious agents in sufficient concentrations or quantities to cause disease in susceptible hosts and includes vomit, urine or faeces from patients treated with cytostatic drugs, genotoxic substances or chemicals which have mutagenic , teratogenic or carcinogenic properties; discarded bedding contaminated with blood or any body fluid; crime or accident scene clean -up waste; laboratory waste and isolation waste but excludes pathological waste.[47]

- Pathological waste means human tissues, organs, body parts, placentas, blood and blood products, anatomical waste, non -viable foetus and deceased animals or animal body parts infected with zoonotic disease but excludes hair, nails and teeth.[48]

- Sharps waste refers to waste having acute rigid corners, edges or protuberances capable of cutting, piercing or puncturing, including but not limited to

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[45] These definitions are stated *verbatim* as they form the basis of what HCRW is – it cannot be rephrased in another manner without losing the correct meaning.

[46] Reg 1 in GN R375 in GG 37654 of 23 May 2014; also see reg 1 in GN 463 in GG 41601 of 30 April 2018. Both regulations have been published for comment but have not been finalised yet.

[47] Reg 1 in GN R375 in GG 37654 of 23 May 2014, this form of waste poses a threat of infection to humans and includes blood soaked bandages, surgical gloves, stocks and swabs for example see further Choice Med Waste 2019. https://www.choicemedwaste.com/understanding-waste-management-what-are-the-4-types-of-medical-waste/.

[48] Reg 1 in GN R375 in GG 37654 of 23 May 2014, also see reg 1 in GN 463 in GG 41601 of 30 April 2018.

human teeth, needles, surgical, scalpel and razor blades, pasteur pipettes, capillary tubes, slides and cover slips, shards of contaminated glass, and any other sharps items derived from human or animal patient care, blood banks, laboratories, mortuaries, research facilities and industrial operations, sharps used on human beings or animals for other than medical procedures, such as sharps used for cosmetic treatment, training purposes, circumcision or embalming procedures.[49]

- Pharmaceutical waste refers to expired, unused, spilt or contaminated pharmaceutical products, drugs, vaccines and sera which are no longer usable in human or animal treatment and includes items contaminated with cytotoxic drugs.[50]

- Cytotoxic waste refers to waste that may cause harm to cells and may lead to cell death.[51]

- Genotoxic waste refers to waste that is capable of interacting with living cells and causing genetic damage.[52] It entails waste that may contain mutagenic, teratogenic and carcinogenic elements that comprise of residues of drugs, vomit, urine and faeces from patients treated with cytotoxic drugs and chemicals.[53]

- Isolation waste refers to waste that contains discarded material which is contaminated with excreta, exudates or secretions from human beings or animals which are required to be isolated in order to guard against high communicable diseases.[54]

- Laboratory waste refers to human or animal specimen cultures from health care facilities, laboratories and stocks of infectious agents from research facilities, waste from the production of bacteria, viruses or the use of spores, discarded, live and attenuated vaccines.[55]

- Radioactive waste is waste that contains radioactive material, these can be generated from nuclear medicine treatments, cancer therapies, X-rays and also medical instruments that use radioactive isotopes.[56]

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[49] Reg 1 in GN R375 in GG 37654 of 23 May 2014. See also reg 1 in GN 463 in GG 41601 of 30 April 2018.
[50] Reg 1 in GN R375 in GG 37654 of 23 May 2014. See also reg 1 in GN 463 in GG 41601 of 30 April 2018.
[51] Reg 1 in GN R375 in GG 37654 of 23 May 2014.
[52] Reg 1 in GN R375 in GG 37654 of 23 May 2014.
[53] Reg 1 in GN 463 in GG 41601 of 30 April 2018 see also Ghasemi 2018 *Journal of Environmental Health Sciences and Engineering* 171.
[54] Reg 1 in GN R375 in GG 37654 of 23 May 2014.
[55] Reg 1 in GN R375 in GG 37654 of 23 May 2014.
[56] Chamberlain 2018 1.
https://www.danielshealth.com/knowledge-center/types-of-medical-waste, also see reg 1 in GN R375 in GG 37654 of 23 May 2014.

Schedule 3 of the NEMWA item 16 refers to "waste from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)" and this includes:

(a) Waste from natal care, diagnosis, treatment or prevention of disease in humans.
(b) Waste from research, diagnosis, treatment or prevention of disease involving animals.

Generally, health care waste is responsible for the bulk of urban waste, the improper disposal of which may impact both the community and the environment.[57] The waste category informs the way it should be handled, stored and treated.[58]

2.4 Treatment of HCRW

In the past, HCRW was primarily treated at the generator's site.[59] Over time this position was changed due to the costs involving treatment, which prompted health facilities to introduce the contractual practice of using external service providers to collect and dispose of this type of waste.[60] The treatment of waste is categorised mainly by factors such as the category of waste, treatment method available, disinfection efficiency, quantity of waste and disposal capacity, infrastructure requirements, location of treatment sites, operating costs and public accessibility.[61] The methods included incineration, autoclaving, chemical disinfection and microwaving.[62] They are described in the following paragraphs.

2.4.1 Incineration

This traditional treatment process entails the burning of HCRW at high temperatures of approximately 2000 degrees Fahrenheit. This treatment method is preferred to treat

[57] Dehghani 2019 *MethodsX* 727.
[58] See para 3.5 below.
[59] Anon Date unknown https://www.malsparo.com/treatment.htm. Also see Borowy 2020 *Historia, Ciencias, Saude - Manguinhos* 231.
[60] See also para 3.5 below.
[61] WHO Date unknown *Treatment and Disposal technologies for health care waste* 77.
[62] Schedule 1 of the NEMWA lists in Category A, the activities for which a waste management licence will be required. Item 6 specifically to the treatment of "biological, physical or physiochemical treatment of hazardous waste". Specific areas are defined, if this item is triggered (read with GN R984 in GG 38282 of 04 December 2014 as amended) then a scoping and environmental impact report must be prepared.

HCRW that cannot be treated through the recycling and re-use route.[63] It is regarded as advantageous due to its quick and easy processes. There are, however, serious emission concerns linked to the process as communities are often exposed to emissions including acidic gases and dioxins from these devices.[64] The incineration process is not recommended for sharps waste such as syringes.[65]

2.4.2 Autoclaving

This method is known as steam sterilisation and is an alternative to the first method known as incineration. This method involves applying heat and steam to medical equipment such as surgical knives and clamps.[66] In relation to unusable waste, this process entails sterilising and disinfecting the waste prior to disposal in a landfill. It is preferable that the method be used for microbiological waste and not for pathological waste, cytotoxic and other chemical wastes.[67]

2.4.3 Chemical disinfection

This method entails the use of chemical agents such as chlorine compounds and ammonium salts for the disinfection of wastes. This process is recommended for sharps, solid and liquid waste.[68]

2.4.4 Microwave

The process entails shredding and mixing waste with water and thereafter heated in order to neutralise all existing biologicals.[69] Upon completion, the waste is then packed into a container and forms part of the municipal waste.[70]

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[63] WHO Date unknown Treatment and Disposal technologies for health care waste 77.
[64] Cairncross and Nicol 2005 *Epidemiology* 580. See also Ringwood 2017 *Resource* 38 and Anon 2013 https://www.hazardouswasteexperts.com/regulated-medical-waste-treatment-methods/.
[65] WHO 2016 *Injection Safety* 3.
[66] WHO Date unknown Treatment and Disposal technologies for health care waste 103.
[67] Anon date unknown https://www.malsparo.com/treatment.htm.
[68] Anon date unknown https://www.malsparo.com/treatment.htm.
[69] Anon 2013 https://www.hazardouswasteexperts.com/regulated-medical-waste-treatment-methods/.
[70] WHO date unknown https://www.who.int/water_sanitation_health/medicalwaste/077to112.

There are different methods permitted for treatment and disposal of HCRW, some equipment used in health care facilities may be re-used provided that they are designed for re-use and subject to sterilisation processes. While incineration is the preferred method for disposal due to its high temperature heat that renders equipment such as needles non-usable, it appears that some waste generators and managers do not comply with the waste management regulations[71] and these practices steer health complications and environmental degradation.[72]

2.5 Health and environmental implications of the improper disposal of HCRW

Throughout the world, the improper disposal of HCRW is a concern and it appears that challenges related to HCRW are linked to inadequate training of the role players on the management of HCRW,[73] insufficient awareness among role players, insufficient financial resources and the fact that the subject is not considered as a high priority.[74] The unlawful disposal of HCRW has negative effects on the community and the natural environment and may result in adverse effects which, amongst others, include diseases such as HIV & Aids, respiratory infections, pollution and contamination of water some of which are discussed in the following paragraphs.

2.5.1 Health implications

It is estimated that 16 billion injections are administered in a year,[75] however, not all of the syringes and material are disposed of in a proper manner which creates room for infections, contamination, injury to ill-informed persons and life threatening diseases such as Covid-19 and HIV & AIDS.[76] There are various ways in which one might be exposed to diseases; for example, through injuries, ingestion and skin contact.[77] While Covid-19, HIV & Aids, and hepatitis might be the most serious diseases, there

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[71] Landie 2011 *Resource* 58.
[72] See para 3.8.7 for a discussion on the treatment of HCRW.
[73] Maseko *Medical Waste Management, Policies and Practices* 4.
[74] Padmanabhan and Brink 2019 *Woodhead Publishing Series in Energy* 111.
[75]WHO 2016 *Injection Safety* 2.
[76] Padmanabhan and Brink 2019 *Elsevier Public Health Emergency Collection* 106. Also see Sarkodie and Owusu 2020 *Environment, Development and Sustainability* 7951.
[77] Marceta 2018 *Researchers Review DGTH* 104.

are other infections that might also be transmitted through the improper disposal of HCRW including respiratory infections such as pneumonia and tuberculosis and gastrointestinal infections such as helminths and salmonella.[78]

2.5.2 Environmental implications

In line with the health risks associated with the improper disposal of HCRW, the improper management, disposal and treatment of HCRW might pose environmental risks, degradation and pollution. Through the release of pathogens and toxic pollutants such as infectious blood mixed with landfill and ruining soil, contamination of drinking water or syringes, plastic and other non-durable waste swept away into lakes and onto seashores,[79] the environment might be harmed.[80] This pollution may affect animals, birds and sea life, amongst others.[81]

2.6 Rationale behind the improper disposal of HCRW

As stated before, South Africa is currently facing an increasing challenge of the improper disposal of HCRW.[82] Despite generators of this waste being required to follow the authorised processes of disposal in order to minimise pollution and other health and environmental risks associated with HCRW.[83] There is a perception that persons involved in HCRW management such as health care personnel, lack training on the correct procedures to follow and knowledge on how to comply with the HCRW management regulations, for example, the segregation of waste.[84] Further, concerns related to the improper disposal of HCRW are linked to exorbitant costs associated with incineration procedures and the alarming reality that most incinerators are located in

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[78] Chamberlain 2018 https://www.danielshealth.com/knowledge-center/effects-dumping-medical-waste.
[79] WHO 2018 https://www.who.int/news-room/fact-sheets/detail/health-care-waste.
[80] Bosman, Alberts and Roos "Integrated Waste Management" 1055.
[81] De Yanes and Howard "Impacts of Inadequate or Negligent Waste Disposal on Wildlife and Domestic Animals: relevance for Human Health"251-281, also see Bega https://mg.co.za/environment/2021-03-26-corona-waste-is-harming-animals-everywhere/.
[82] See para 1.1 above.
[83] See para 3.4 below.
[84] Segregation is critical considering that once hazardous waste is mixed with general waste the entire waste will be deemed as hazardous which then increases the waste volume. Also see Van Schalkwyk 2013 *Resource* 41.

the main cities of the country which are often a distance away from the generator's location.[85]

It is said that approximately 45 000 tons of HCRW is generated every year in South Africa and due to these high volumes, treatment sites tend to lack the necessary capacity to treat all the HCRW.[86] With the Covid-19 pandemic that the country is facing, health facilities have experienced greater volumes of HCRW, calling for service providers to extend their working hours.[87] Associated with this was also the technological challenges related to the capacity of treatment infrastructure to dispose of the HCRW as most were operating beyond their design abilities which caused frequent repairs.[88]

Further to the challenges outlined above, is the unhealthy competition between HCRW management service providers as a result of tender adjudication irregularities,[89] where inexperienced service providers are granted tenders without the necessary equipment required to treat or dispose of waste.[90]

2.7 Role players in the life-cycle of HCRW

A life cycle can be described as the cradle to grave principle in environmental law.[91] This requires that persons who commence with activities, projects, products or services bear its responsibility throughout its existence.[92] This principle is found in section 2(4)(e) of the NEMA. This cycle begins with the generator of waste.[93] Generators carry the duty to store and dispose of waste in an environmentally sound manner. This duty requires them to keep records of the waste management chain until final

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[85] Van Schalkwyk 2013 Resource 41. Also see Roberts, Kocks and Jansen 2018 *Occupational Health Southern Africa* 105.
[86] Van Schalkwyk 2013 *Resource* 41.
[87] Manyana 2020 *Resource* 20.
[88] Lombard 2010 *Resource* 8.
[89] *Millennium Waste Management v Chairperson Tender Board* 2008 (2) SA 481 (SCA).
[90] Lombard 2010 *Resource* 9.
[91] Oothuizen, van der Linde and Basson "National Environmental Management Act 107 of 1998 (NEMA)"142. Also see Henderson 2001 *SAJELP* 166.
[92] The DFFE has published the extended producer responsibility regulations GN 1184 in GG 43879 of 05 November 2020 read with GN 239 in GG 44295 of 19 March 2021 which address the life cycle of products, the regulations do not make specific reference to HCRW.
[93] See para 1.1 above.

disposal. For example, the good pharmacy practice[94] as introduced by the provisions of section 35A of the *Pharmacy Act*[95] requires generators[96] of waste to segregate HCRW at the initial stage of generation into labelled[97] and colour coded containers.[98] Following the segregation, containers should be marked, sealed and stored in a safe environment awaiting collection by the transporters.[99]

The mandatory duty of care as stated in section 16 of the NEMWA, as alluded in Chapter one of this study, is often a challenge to generators who entrust certain duties such as collection and disposal to external service providers. In principle, the generators of waste should not excuse themselves from the responsibility when the waste is handed to the waste service providers. It is the generators obligation to ensure that they are contracted to only authorised waste collectors licensed in terms of the NEMWA.[100] For example, according to the good pharmacy practice, medicines must be disposed of in a manner that the medicine is not retrievable and is not disposed of into municipal sewage systems and onto landfills[101]

The role players in the life cycle of HCRW are waste generators who are healthcare facilities, waste transporters and waste managers. Each of them has different responsibilities and duties.[102] The HCRW life cycle and role players are illustrated in Figure 2.7, their duties and responsibilities are set out in chapter 3.

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[94] BN 129 in GG 27112 17 December 2004 as amended.
[95] 53 of 1974.
[96] BN 129 in GG 27112 17 December 2004 as amended.
[97] Reg 14 in GG R375 in GG 37654 of 23 May 2014. Packaging to be in accordance with SANS 10229-1:2010.
[98] Du Toit and Bodenstein 2014 *South African Medical Journal* 14.
[99] SANS 10248: 1-3 read with Reg 15 and 16 in GN R375 in GG 37654 of 23 May 2014.
[100] Chapter 5 of NEMWA.
[101] *Medicines and Related Substances Act* 101 of 1965: GN 859 in GG 41064 of 25 August 2017. Also see Du Toit and Bodenstein 2014 *South African Medical Journal* 14.
[102] See para 3.7 below.

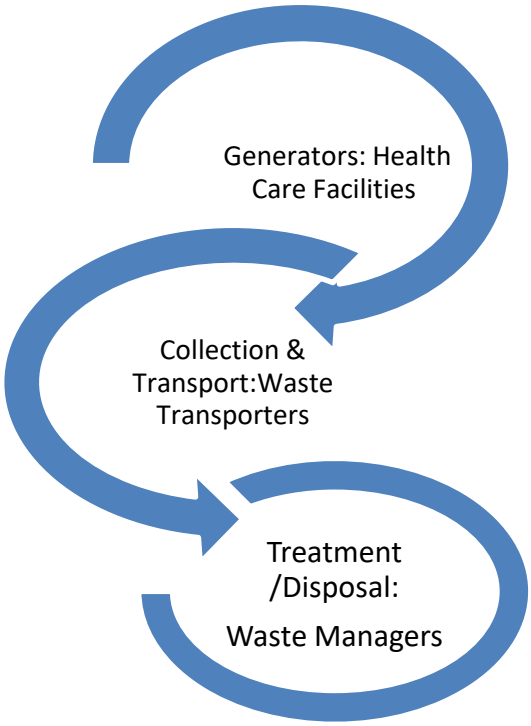

Figure 2.7: Role Players in HCRW Life Cycle

2.8 Conclusion

Health and care facilities heal patients, look after patients or infirm people and save lives but also generate hazardous waste. This chapter identified the different categories of waste, proper disposal techniques, as well as the role players in HCRW. The chapter further indicated that while health facilities are obliged to follow guidelines and regulations for HCRW management, the implementation of these guidelines and prevention of the improper disposal are sometimes interrupted by a disconnection between the segregation, handling and disposal processes of HCRW. This view point is supported by the alarming reports of improper disposal of HCRW across the country. This indicates the need for law enforcement officers to familiarise themselves with the laws governing HCRW in order to enable them to prosecute and convict offenders.

The following chapter focuses on national legislation and other government publications outlining the duties of the role players responsible for HCRW and what is expected of them. The chapter also describes the HCRW management process in an ordinary healthcare facility.

Chapter 3
Legal framework of HCRW management in South Africa

3.1 Introduction

The focus of this chapter is on the South African environmental right as found in the 1996 Constitution of the Republic of South Africa and the environmental principles as set out in section 2 of the NEMA and how they are linked to HCRW management. The chapter then proceeds to discuss the HCRW management process, particularly its role players and duties.

3.2 Constitution

The Bill of Rights[103] in the Constitution provides for the right to an environment that is not harmful to the health and wellbeing of all.[104]This basic human right is interconnected to the international environmental law principles as set out in various international law agreements.[105] It is aimed at securing a basic quality life for all members of the society in order to uphold all other constitutional rights.[106]

Section 24(b) also compels the state to protect the environment to the advantage of all generations.[107] This provision further requires the state as the custodian of the nation's resources to take all reasonable and legislative measures to ensure that this principle is upheld.[108] In envisaging the spirit and purport of the 1996 Constitution of the Republic of South Africa, section 2 of the NEMWA, read with the Health Care Risk Waste Management in Health Establishments Regulations[109] and the Proposed National Health Care Risk Waste Management Regulations,[110] call for appropriate waste management practices in the health sector in order to[111] prevent pollution and ecological

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[103] Chapter 2 of the Constitution.
[104] Section 24(a) of the Constitution.
[105] *United Nations Convention on the Rio Declaration of Environment and Development* (1992)
[106] Du Plessis 2015 *PER/PELJ* 1847.
[107] Section 24(b) of the Constitution.
[108] Davids *Compliance and Enforcement: The Legal Sustainability of the Utilisation of Criminal Sanctions in South African Environmental Law* 15.
[109]GN 375 in GG 37654 of 23 May 2014.
[110] GN 463 in GG 41601 of 30 April 2018.
[111] Zhakata "A Critic of NEMA: Waste Act 59 of 2008, so many promises, little implementation and enforcement" 228.

degradation, in order to give effect to section 24(a) and section 24(b) of the Constitution and to strengthen the principle of sustainable development as discussed in the next paragraph.

3.3 Environmental law principles

The NEMA is the principal legal framework, supported by the specific environmental management acts (SEMAs)[112] such as the NEMWA. The NEMWA regulates waste management practices in order to guard against pollution and environmental degradation have been developed. The section 2 principles of the NEMA ought to be adhered to in relation to matters concerning any activities that may impact on the environment, which will include any activities under the NEMWA.[113] In addition to the life cycle principle referred to above,[114] several other principles are applicable to waste management activities. Section 2 principles are referred to as sustainable development principles.

The NEMA defines sustainable development as "the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves the present and future generations".[115] This principle calls for the engagement of the basic needs of all persons and widening all opportunities to fulfil their goals for a better life. In the South African environmental legal landscape, this principle is rooted in the provisions of section 24 of the Constitution,[116] which echoes that development should meet the needs of the present without compromising the ability of future generations in order to meet their own needs.[117] Section 2(4)(a) of the NEMA reaffirms the state's commitment to sustainable development.

Sustainable development as one of the main principles of the South African environmental law was unpacked in the Constitutional Court decision of *Fuel Retailers Asso-*

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[112] Listed in section 1 of the NEMA.
[113] Section 2(1) of the NEMA.
[114] See para 2.7 above.
[115] Section 1 of NEMA.
[116] Section 24 (b)(iii) of the Constitution.
[117] See also United Nations *Report of the World Commission on Environment and Development: Our Common Future* 16 https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf.

ciation of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others[118] where the court stressed that this principle enables the environmental authorities to balance the developmental needs of the society with environmental concerns. As it stands the principle of sustainable development holds the general framework for all environmental issues.[119]

Section 2 identifies factors relevant for sustainable development, amongst others, it highlights that matters such as the disturbance of ecosystems,[120] pollution and environmental degradation[121] should be avoided and moreover, waste must be avoided and where it cannot altogether be avoided it, must be minimised and re-used or recycled and in possible circumstances be disposed of in a responsible manner as set out in chapter 2[122]

The National Waste Management Strategy (NWMS)[123] underlines environmental development and sustainability.[124] Waste management practices are expected to be driven by the goal of environmentally sustainable economic development; this goal calls for a healthy environment and a stable economy by controlling and preventing pollution and environmental degradation.[125] In relation to HCRW, the NWMS emphasises the overall responsibility of the Department of Health for the handling of HCRW and set out the functions of environmental health practitioners.

Taking into consideration the 1996 Constitution of the Republic of South Africa, the NEMA and the NEMWA, the sustainable development principle applied to HCRW management demands that HCRW be treated and disposed of safely according to the law.

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[118] 2007 (6) SA 4 (CC).
[119] Gebregiorgs 2016 *SAJELP* 12. For several discussions on the *Fuel Retailers* case, see 2008 *SAJELP* 15(1).
[120] Section 2(4)(a)(i) of NEMA.
[121] Section 2(4)(a)(ii) of NEMA.
[122] Section 2(4)(a)(iv) of NEMA. Also see para 2.4 above.
[123] GN 56 in GG 44116 of 28 January 2021.
[124] Karani and Jewasikiewitz 2007 *Environment, Development and Sustainability* 164.
[125] Karani and Jewasikiewitz 2007 *Environment, Development and Sustainability* 169.

The best practicable environmental option[126] should be applied.[127] In the case of HCRW, the disposal of such waste should be the best environmental option. Methods used for the disposal of HCRW such as incineration, autoclaving or microwaving should therefore comply with the environmental requirements and the choice of treatment methods should be based on the technology that will cause the least damage to the environment and at an appropriate cost to the society.[128]

The polluter pays principle, also recognised in Principle 16 of the *Rio Declaration on Environment and Development*, 1992, which states that:

> National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interest and without distorting international trade and investment.

In South African environmental law, this principle is enacted in section 2(4)(p) of the NEMA and it requires that polluters bear the costs of remedying the pollution and environmental degradation in order to prevent further harm to the environment and human health.[129] The polluter pays principle is an economic mechanism to internalise pollution and not to allow the community to bear the brunt of the pollution.[130] In relation to HCRW this will mean that waste generators as well as those transporting waste and waste managers are required to take the financial liability for the management of the waste created and disposed of.

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[126] Section 1 of the NEMA defines the best practicable environmental option as "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term."
[127] Section 2(4)(b) of the NEMA.
[128] See para 2.4 above for an exposition of these disposal methods.
[129] In line with the provisions of section 28 of the NEMA all role players in the life cycle of HCRW are financially responsible for waste created, also see Sweet and Kourie 2019 *Without Prejudice* 76.
[130] Kotze and Bosman 2006 *Obiter* 132.

The duty of care principle is found in section 28 of the NEMA, it calls for every person who causes, has caused or could cause substantial pollution or environmental degradation to take reasonable steps to prevent the harm from occurring.[131] This duty applies to everyone[132] even if there is no victim or complainant.[133] This duty will also relate to, but is not limited to land owners, persons in control of land and persons who have the right to use the land.[134]

In harmony with section 28, section 16 of the NEMWA identifies the duties of waste holders.[135] In essence, the provision expresses that a holder of waste is expected to take reasonable measures to avoid the generation of waste and in circumstances where avoidance impracticable, to minimise the harmfulness and volume of waste created.[136] In addition, the provision calls for waste holders to ensure that waste is managed, treated and disposed of in an environmentally sound manner while giving effect to the duty of care principle.[137]

These principles also come into play during investigations when EMIs investigate and arrest wrongdoers and also during prosecution; it is important that all role players understand the principles in order to enable them to understand the offences and institute successful prosecutions.[138]

3.4 Provincial legislation and policies

Presently, two provinces, namely Gauteng and Western Cape have promulgated specific legislation relating to HCRW while other provinces are guided by the SANS and waste management policies. In order to give effect to the provisions of section 24 of

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[131] Section 28(1) of NEMA, also see Parramon *Without Prejudice 2008 54.*
[132] The principle applies retrospectively, see also *Bareki NO and another v Gencor Ltd and others* 2006 (1) SA 432 (T). Section 28 of the NEMA was amended, subsequent to the *Bareki*-decision.
[133] Henderson 2001 *SAJELP* 158, see also *Sea Harvest Corporation Pty Ltd and another v Duncan-Dock Cold Storage Pty Ltd and another* 2000 (1) SA 827 (SCA).
[134] Section 28(2) of NEMA.
[135] See para 2.7 above.
[136] Section 16(1)(a) of NEMWA.
[137] Section 16 (1)(c) and Section 16(1)(d) of NEMWA.
[138] The regulations of the NEMWA will be enforced by environmental health inspectors or municipal health inspectors, amongst others, see May and Agenbag "Environmental health and municipal health services"15-1 – 15-106 in this regard.

the Constitution, the Gauteng Health Care Waste Management Regulations,[139] *Western Cape Health Care Waste Management Act*[140] and the Western Cape Health Care Risk Waste Management Regulations[141] were promulgated. These provide a legal framework for the management of HCRW and duties of the different role players in addition to the NEMWA.[142]

3.5 National Waste Management Strategy

Founded by the provisions of section 6 of the NEMWA, the NWMS 2020 outlines the government's strategy towards waste management.[143] The 2020 NWMS[144] is grounded on three pillars, namely, (a) zero waste in landfills and cleaner communities; (b) well managed waste services; and (c) zero tolerance of pollution and illegal dumping. The Strategy draws attention to the following goals that speak to the 17 Sustainable Development Goals, namely,[145]

- To promote waste minimisation, re-use, recycle and recovery of waste.
- To ensure effective delivery of waste services.
- To expand the contribution of the waste sector to the green economy
- To ensure that the public is educated about the impacts of waste on their wealth, health and environment.
- To provide measures to remediate contaminated land.

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[139] Published in GN 372 in GG 3035 of 15 September 2004 issued in terms of section 24 of the *Environmental Conservation Act* 73 of 1989.
[140] 7 of 2007 as amended by the *Western Cape Health Care Waste Management Amendment Act* 6 of 2010.
[141] PN 73 in PG 7102 of 15 March 2013.
[142] See para 3.8 and 3.9 below where this legislation and policies will be referred to where applicable.
[143] GN 56 in GG 44116 of 28 January 2021.
[144] The NWMS 2020 revises the 2011 NWMS (GN 344 in GG 35306 of 4 May 2012) and was issued in response to the sustainable development goal that is envisaged by the Constitution as stated above.
[145] Department of Forestry, Fisheries and the Environment https://www.environment.gov.za/documents/strategicdocuments/wastemanagement.

- To launch effective compliance and enforcement of the NEMWA.

In relation to HCRW, this mean that all role players in the hierarchy of HCRW ought to be clearly identified in order to draft HCRW management strategies that will promote waste minimisation and put measures in place to uphold the aims of the NWMS.

In order to carry out the objects of the NWMS, the Department of Health is tasked with the responsibility to prepare regulations[146] on HCRW management and to oversee Environmental Health Practitioners in association with the HPCSA. The SAPS and the NPA also have the duty to work hand in hand with the DFFE on issues relating to the enforcement of the NEMWA.[147] The following paragraph discusses the health care facility waste management team.

3.6 Healthcare facility waste management team

A healthcare facility is required by SANS 10248-1:2008 to establish a waste management team which may comprise of members within the healthcare facility, where all departments are represented. These include the Head of the healthcare facility, heads of departments, Infection Control Officer, Senior Nursing Manager, Health and Safety Manager, Financial Manager, Procurement Manager, Waste Management Contractor, Maintenance Manager, Radiation Manager, Waste Management Officer and the Chief Pharmacist.[148]

The fundamental duties of the team include the day-to-day operation of the facility, monitoring and implementation of the waste management plan (WMP) that needs to be drawn up after considering the HCRW generated at the health facility and future developments. The WMP should include data on all processes taking place in the health facility, an implementation plan and emergency plan.

[146] See para 3.5 above.
[147] Reg 9 in GN 56 in GG 44116 of 28 January 2021.
[148] SANS 10248-1:2008.

The classification of the persons comprising the waste management team is also important when the prosecution decides who should be charged for the improper disposal of HCRW. The first phase is to confirm whether the generators packaged the waste according to the regulations. When this is ascertained, the next phase is to determine whether the waste collectors conveyed the waste in accordance with the regulations and ultimately whether the waste managers disposed it of in accordance with the law as set out below.

3.7 General duties

The general duties in respect of waste management are founded by the section 16 of the NEMWA which provides that holders of waste must take reasonable steps to:

- Avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated.[149]
- Reduce, reuse, recycle and recover waste. [150]
- Ensure that waste is treated and disposed of in an environmentally sound manner.[151]
- Manage waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts.[152]
- Prevent any employee or any person under their supervision from contravening the NEMWA. [153]
- Prevent waste from being used for an unauthorised purpose. [154]

In harmony with the provisions of the NEMWA, the provincial legislation and policies[155] have adopted various roles and responsibilities for the HCRW role players in the HCRW management process as set out in the following entry:

3.8 HCRW management process

In order to successfully prosecute HCRW offences, prosecutors and other law enforcement officers should understand the HCRW management process. HCRW generators are at the forefront of the HCRW management chain with the following obligations at

[149] Section 16(1)(a) of the NEMWA.
[150] Section 16(1)(b) of the NEMWA.
[151] Section 16(1)(c) of the NEMWA.
[152] Section 16(1)(d) of the NEMWA.
[153] Section 16(1)(e) of the NEMWA.
[154] Section 16(1)(f) of the NEMWA.
[155] See para 3.4 above.

the point of generation, namely, the identification, classification, segregation, labelling, packaging, storage and keeping updated records of the waste generated, stored and handed to the waste transporters, followed by the collection and transportation by waste transporters and disposal by waste managers as detailed below.

3.8.1 Identification

The initial phase in waste management is the identification of waste. The generators of waste are tasked with the responsibility to identify waste.[156] This entails arranging the waste into either HCRW which is further categorised into either infectious waste, pathological waste, pharmaceutical waste, sharps waste or others, as mentioned above[157] or Health Care general waste which includes kitchen waste, packaging material, office waste, and garden waste.[158]

3.8.2 Classification

In line with SANS 10248-1:2008, the classification of waste has to be in accordance with the provisions of SANS 10228:2012.[159] It must be determined whether or not the waste is hazardous based on the nature of its physical, health and environmental risks and the degree of risks associated with the type of waste in question.[160]

3.8.3 Segregation

The subsequent step to waste management is waste segregation, which involves a systematic separation of HCRW into specific categories.[161] In this regard, waste generators are required to separate HCRW at the point of generation and not mix it with general health care waste. [162] This process demands that waste generators place waste

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[156] SANS 10248-1:2008.
[157] Para 2.2 above.
[158] SANS 10248-1:2008.
[159] The identification and classification of dangerous goods for transport by road and rail modes.
[160] SANS 10248-1:2008.
[161] SANS 10248-1:2008.
[162] Reg 7 in GN 372 in GG 3035 of 15 September 2004. Also see section 6 of the *Western Cape Health Care Waste Management Act.*

into specific colour coded containers in order to minimise risks surrounding contamination and pollution.[163]

3.8.4 Labelling and packaging

Following the segregation of waste, the HCRW legal framework requires that HCRW be packaged in specifically marked containers that distinctly outline the contents in accordance with SANS 10229-1 and 10248-1[164] and specific waste classification as well as management regulations.[165] SANS 10248-1 extends the packaging requirements by specifying the thickness of packaging to be used and colour coding.[166] The labelling and packaging requirements are illustrated in the colour coding table below.

Table 3.8.4 Health Care Waste Colour Coding[167]

Waste	**Waste sub-category**	**Colour coding**
Human or animal anatomical waste	Infectious human anatomical Infectious animal anatomical Non-infectious animal anatomical	Red with international infectious waste hazard label Orange with international infectious waste hazard label Blue
Infectious non anatomical waste	None	Red with international infectious waste hazard label
Sharps waste	None	Yellow with words "Danger-Contaminated Sharps" and international infectious hazard label

[163] See Table 3.8.4 below.
[164] Reg 9 in GN 372 in GG 3035 of 15 September 2004. See also section 6 of *Western Cape Health Care Management Act* read with reg 2 in PN 73 in PG 7102 of 15 March 2013.
[165] GNR 634 in GG 36784 of 23 August 2013.
[166] See also Schedule 1 in GN 372 in GG 3035 of 15 September 2004 and Annexure 1 of *Western Cape Health Care Waste Management Act*.
[167] SANS 10248-1:2008.

Chemical waste including pharmaceutical waste	Chemical or Pharmaceutical Cytotoxic pharmaceutical	Dark green with the international hazard label Dark green with the cytotoxic international hazard label
Radioactive waste	None	No colour coding- only the international radiation hazard label

3.8.5 Storage

SANS 10248-1:2008 provides two classes of storage facilities, namely a temporary HCRW storage facility and a central HCRW storage facility. With regards to the temporary storage, WMP[168] ought to specify the location of the storage, collection points, time and routes to be followed. The location of the storage should be such that contamination is minimised. In relation to the central HCRW storage facility, SANS requires that the storage be designed and demarcated as a HCRW storage site in an access-controlled area with low contamination risks and in accordance with the required storage periods. In addition to this, SANS outlines guidelines that should be followed at storage sites, amongst others, it highlights the storage time frames and room temperatures for the various categories of HCRW,[169] it further points out that storage facilities be appropriately ventilated, vermin proof and have adequate space for storing clean equipment separately.[170]

3.8.6 Collection and transportation

Subsequent to the storage procedures, HCRW should be collected from the health facility in order to be treated, without posing a risk to human health or the environment. While some categories of HCRW may be subject to sterilisation and treatment on-site, others such as pathological waste are handed to external service providers for

[168] See para 3.6 below.
[169] Also see Schedule 9 in GN 372 in GG 3035 of 15 September 2004 and section 6 of the *Western Cape Health Care Waste Management Act* read with reg 2 in PN 73 in PG 7102 of 15 March 2013.
[170] Read with section 21 of the NEMWA and the National Norms and Standards for the storage of waste GN 926 in GG 37088 of 29 November 2013.

disposal. Persons tasked with the collection of HCRW should be equipped with Personal Protective Equipment (PPE) such as gloves, masks and overalls. [171]

3.8.6.1 On-site collection and transportation

The current HCRW treatment and disposal procedures are closely linked with the contractual agreements that are entered into between the health care facilities and external service providers.[172] In accordance with SANS 10248-1:2008, HCRW must be collected at the point of generation and a waste collection schedule must be prepared as part of the WMP. The waste collection schedule should consist of comprehensive identification of the waste sources, the location of the waste sources and the central waste store, the names of officers responsible for various shifts at the waste sources, a list detailing the categories of waste generated at each waste source, a detailed programme to be followed for collection in order to avoid mixing waste and the route to be followed by waste transporters, the waste management officer monitors this process.[173] Trollies and wheeled containers shall be used to transport HCRW within the perimeters of the healthcare facility; these should be easy to operate, safe proofed and easy to clean.[174]

3.8.6.2 Collection and off-site transportation

Similar to the procedure followed with the on-site collection and transportation, the WMP ought to include a schedule for HCRW collection at the central waste store, detailed information on the treatment by an authorised external service provider, information on an emergency backup plan for unforeseen circumstances or spillage and

[171] SANS 10248-1:2008.
[172] See para 3.9 below.
[173] SANS 10248-1:2008.
[174] SANS 10248-1:2008. Also see Schedule 9 in GN 372 in GG 3035 of 15 September 2004 and section 6 of the *Western Cape Health Care Waste Management Act* read with reg 4, 6 and 7 in PN 73 in PG 7102 of 15 March 2013.

records of all waste collected.[175] The vehicles used to transport HCRW should be authorised for such use and should comply with the requirements as set out in SANS 1518:2020[176] and SANS 10231:2019.[177]

3.8.7 Treatment

The treatment of HCRW is a listed activity in terms of section 21 of the *National Environmental Management: Air Quality Act*,[178] this means that the disposal should be in accordance with the requirements as set out in the norms and standards[179] and regulations.[180] Following collection, the authorised waste management company is then required to make available documentary evidence regarding the final treatment and disposal of the HCRW.[181] SANS 10248-1:2008 outlines the requirements for treatment of HCRW, amongst others, that untreated HCRW should not be disposed of by landfill and also that HCRW should not be discharged into a municipal sewage system. SANS 10248-1:2008 also sets out the requirements for treatment by way of incineration and alternative treatment methods that may be followed by waste managers.

The steps to HCRW disposal are well defined from SANS; waste generators, transporters, and managers should be mindful of the process and apply it to their everyday tasks. This can only be achieved if these guidelines are recorded in the contractual agreements discussed below.

3.9 Contractual agreements

The procurement practice followed by the public sector is directed by the provisions of section 217 of the Constitution, section 51 of the *Public Finance Management Act*

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[175] SANS 10248-1:2008. Also see Schedule 9 in GN 372 in GG 3035 of 15 September 2004 and section 6 of the *Western Cape Health Care Waste Management Act* read with reg 5, 6 and 7 in PN 73 in PG 7102 of 15 March 2013.
[176] Transport of dangerous goods - Design, construction, testing, approval and maintenance of road vehicles and portable tanks.
[177] Transport of dangerous goods by road - Operational requirements.
[178] 39 of 2004 as amended by the *National Environmental Management: Air Quality Amendment Act* 20 of 2014.
[179] GN 1210 in GG 32816 of 24 December 2009.
[180] GN 893 in GG 37054 of 22 November 2013 as amended by GN 551 in GG 38863 of 12 June 2015, GN 1207 in GG 42013 of 31 October 2018 and GN 687 in GG 42472 of 22 May 2019.
[181] SANS 10248-1: 2008, see also para 2.4 above, for a discussion on treatment methods.

(PFMA)[182]and the *Preferential Procurement Policy Framework Act*[183] which require that principles of fairness, equitability, transparency, competitiveness and cost effectiveness be followed when organs of state contract for goods and services. Public procurement is regulated by administrative justice.[184] The National Treasury developed an online portal that publishes procurement notices, official tender documents and detailed information on bidding.[185]

Following a successful procurement process, the Department of Health enters into a written contractual agreement with a licenced waste management contractor[186] for the collection and treatment or disposal of HCRW. The contractual agreement should set out amongst others the following terms:[187]

- The specification of categories and volume of waste to be collected and treated or disposed.
- The treatment and disposal methods to be applied.
- The possible infection risks and hazards associated with the categories of waste to be collected and treated.
- Detailed information on the responsibility to sort, count and collect HCRW packages.
- A comprehensive collection schedule to be followed by all parties.
- Measures to be applied in case of termination of services.
- The reporting procedures and requirements.
- Health and safety measures to be implemented and any PPE to be used.

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[182] 1 of 1999.
[183] 5 of 2000.
[184] *Promotion of Administrative Justice Act* 3 of 2000. See also in this regard Hoexter and Penfold *Administrative Law in South Africa*.
[185] https://www.etenders.gov.za/.
[186] Authorised in terms of Chapter 5 of the NEMWA.
[187] SANS 10248-1:2008.

- The conduct of personnel collecting the HCRW.

In the private sector, the agreements are based on the Law of Contract, but such contracts regulate the above mentioned issues to ensure limitation of liability.[188] In order to ensure that proper waste management processes are followed, health care facilities are expected to create waste management teams[189] to ensure that the contractual agreements are followed.

As stated above, the collection and disposal of HCRW are outsourced to private companies based on a tender process. There are, however, records of various tender irregularities linked to HCRW management;[190] these include unduly extended service contracts[191] and appointments of unqualified service providers. This reflects a flawed adjudication process which requires strict enforcement measures.

3.10 Conclusion

In order to safeguard the constitutional right to an environment that is not harmful to one's health, the South African legal landscape on waste management is well defined. This chapter identified the current legal framework pertaining to the management of HCRW and made specific reference to contractual agreements entered into by health care facilities and external service providers. The provisions of the NEMA, NEMWA, NWMS and relevant regulations present a structured HCRW management pattern on how all role players should handle HCRW. However, the delay in the promulgation of the national HCRW regulations complicates ideal position of a standardised enforcement framework. For instance, in circumstances were the NPA decides to prosecute one or more of the persons involved in HCRW management, they have to apply specific measures pertaining to that province or municipality and scrutinise the contracts in

[188] On the Law of Contract, see for example, Hutchison and Pretorius *The Law of Contract in South Africa.*
[189] See para 3.6 above.
[190] Unknown https://www.onlinetenders.co.za/news/r200m-tender-veil-of-secrecy.
[191] Low and October 2019 https://www.dailymaverick.co.za/article/2019-12-13-medical-waste-the-curious-case-of-a-contract-that-was-extended-for-16-years/.

lieu of the current legal regime. The following chapter discusses enforcement and compliance to HCRW legislation.

Chapter 4
HCRW management compliance and enforcement

4.1 Introduction

This chapter aims to analyse the enforcement of the waste legislation and its regulations through criminal sanctions from the investigation phase conducted by EMIs and members of the SAPS headed to litigation and punishment.

4.2 Environmental compliance and enforcement

Despite South Africa's extensive legislation on waste management, a number of health care facilities in both the public and private sector, and waste managers continue to disregard the proper HCRW management practices.[192] The management of HCRW is controlled by organs of the state such as the DFFE, provincial authorities and municipalities that are responsible for the administration of environmental and health legislation[193] to ensure compliance. The presence of the constitutional right to an environment that is not harmful to health and wellbeing[194] calls for the judiciary to safeguard the constitutional right and to guarantee punishment for offenders.

In line with the obligations as set forth in the environmental and health legislation there are numerous methods that can be used to ensure that health care facilities and waste managers comply with the legal provisions. The command-and-control system entails strict monitoring by authorities as a safety measure to ensure environmental compliance and prosecution of offenders.[195] Section 3 of the NEMWA, for example directs organs of state to uphold the spirit and purport of the Constitution by fulfilling the rights as contained in section 24 of the Constitution by putting in place measures aimed at preventing environmental degradation.

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[192] Hodes 2020 https://www.news24.com/health24/medical/meds-and-you/news/medical-waste-offers-insights-into-south-africas-use-of-pharmaceuticals-20200212. Also see Nkwana 2017 *Servamus* 34.
[193] Kidd "Administrative Law and Implementation of Environmental Law" 233.
[194] Section 24 of the Constitution.
[195] Kidd "Administrative Law and Implementation of Environmental Law" 235.

Although the *National Health Care Act*[196] does not make specific reference to HCRW, section 79 provides that the Office of the Standards Compliance can inspect health care facilities once in every three years in order to ensure compliance. Further, in instances where it is found that a health care facility does not comply with the provisions of the laws set, the office may issue a written notice of non-compliance to the head of the establishment.

Section 80 of the *National Health Care Act* further makes provision for the appointment of health officers who must monitor and enforce compliance.[197] In addition to this, section 83 of the *National Health Act* provides that if a health officer has any grounds to believe that circumstances exist which constitute a contravention of the provisions of section 24(a) of the Constitution or, constitute pollution harmful to health or likely to cause health nuisance, such a health officer must investigate the circumstances. The health officer can gain entry into the health care facility premises in the presence of a police officer[198] in order to investigate in line with the provisions of section 84.

In addition to the *National Health Act*, the Health Professions Council of South Africa (HPCSA)[199] places a duty on health care practitioners to ensure proper use and disposal of HCRW and to report evidence of improper disposal of HCRW by persons to the HPCSA and the Department of Health.[200]

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[196] 61 of 2003.

[197] Section 80(1) provides that "the minister may appoint any person in the employ of the national department as a health officer of the national department, the member of the executive council may appoint any person in the employ of the provincial department as a health officer for the province in question and that a mayor of a metropolitan or district council may appoint any person in the employ of the council in question as a health officer for the municipality in question."

[198] On authority of a warrant authorised in terms of section 84(5) or without a warrant if there are reasonable grounds to believe that a delay in obtaining the warrant would defeat the purpose of obtaining the warrant or the person concerned consents to the entry as provided for in section 86 of the *National Health Act*.

[199] The HPCSA is a regulatory body for health professionals established in terms of section 2 of the *Health Professions Act* 56 of 1974.

[200] HPCSA *Guidelines for the Management of Healthcare Waste* 3.

Section 31B-31C of the NEMA makes provision for the appointment of EMIs by either the relevant minister, the minister of water affairs, the minister for mineral resources or by a member of the executive council (MEC) or a municipality. The duty of the EMIs is to monitor and enforce compliance with environmental laws.[201] In performing their functions, the EMIs may on reasonable suspicion, investigate any conduct that may constitute an offence.[202] In the investigation of offences, the EMIs may inspect premises, question people and take photographs and visual recordings of anything that may be relevant in their investigation.[203] In order to comply with the duties, the EMIs are regarded as peace officers and may exercise functions assigned to peace officers and police officers within the area of jurisdiction where they are designated.[204] Members of the SAPS also have the powers of an EMI with the exception of routine inspections.[205] Similar to SAPS members, EMIs hold a constitutional mandate to uphold the constitutional environmental right principles by enforcing action where non-compliance is evident.[206]

4.3 HCRW Offences

The primary mechanism for environmental law compliance and enforcement in South Africa is by way of criminal sanctions. This entails the prosecution of the offender beyond reasonable doubt and to rely on a magistrate to impose an appropriate fine or term of imprisonment.[207]

Section 89 of the *National Health Act* does not create offences relating to the unlawful disposal of HCRW or improper HCRW management practices apart from circumstances where an individual fails to comply with a compliance notice issued in terms of section 83(3) of *National Health Act* on the basis of issues stated above.[208] Section 49A(1) of

[201] Section 31G(1)(a) of the NEMA.
[202] Section 31G(1)(b) of the NEMA
[203] Section 31H of the NEMA.
[204] Section 31H(5) of the NEMA.
[205] Section 31O of the NEMA.
[206] Hall 2019 *SAJELP* 73. EMIs are appointed according to a specific mandate- see sections 31D and 31F of the NEMA.
[207] Fourie 2009 *SAJELP* 93.
[208] See para 4.2 above.

the NEMA creates offences for acts in contravention of the NEMA. In this regard, section 49A(1)(e) is of significance as it refers to acts or omissions which cause or may cause significant pollution and environmental degradation which detrimentally affect the environment whereas section 49A(1)(f) creates an offence for acts and omissions which detrimentally affect or may affect the environment.

To supplement NEMA, section 67 of the NEMWA creates general offences in relation to waste management, with specific reference to HCRW, the following offences may be identified as potential charges for HCRW offenders:

1. Contravention of the general duties as contemplated in section 16 of the NEMWA.[209]

2. Contravention of the general requirements of storage and collection of waste as set out in sections 21 and 24(b) of the NEMWA.[210]

3. Contravention of a WMP.[211]

4. Failure to comply with the conditions of a waste management licence as contemplated in chapter 5 of the NEMWA particularly in relation to waste transporters and waste managers.[212]

5. Contravention of any norm and standard issued in terms of the NEMWA.[213]

6. Failure to submit a waste impact report as required by the provisions of section 66 of the NEMWA.[214]

7. Submission of fraudulent or misleading information in relation to any application or any investigation by a waste management officer or an EMI.[215]

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[209] Section 67(1)(a) of the NEMWA. See also para 3.7 above.
[210] Section 67(1)(b) of the NEMWA.
[211] Section 67(1)(d) of the NEMWA. Also see *South African Human Rights Commission v Msunduzi Local Municipality and Others* 2021 (6) SA 500 (KZP).
[212] Section 67(1)(h) of the NEMWA.
[213] Section 67(1)(f) of the NEMWA.
[214] Section 67(1)(i) of the NEMWA.
[215] Section 67(1)(k),(l) of the NEMWA.

For Gauteng and the Western Cape, the following offences have been identified in regulation 46 of the Gauteng Health Care Waste Management Regulations[216] and section 11 of the *Western Cape Health Care Waste Management Act:*

1. Failure of a waste generator, transporter or manager to exercise the duty of care.[217]

2. Failure to comply with the requirements of segregation, packaging, storage, collection, transportation and treatment as highlighted above.[218]

4.4 Proposed offences in terms of the Draft HCRW Regulations

Regulation 4, read with regulation 13(1), of the Proposed National Health Care Risk Waste Management Regulations makes specific reference to prohibitions that no person may perform any of the following acts in addition to contravention of the segregation, packaging, labelling, storage and collection as set out in chapter 3 of the Proposed National Health Care Risk Waste Management Regulations;[219]

- Dispose of untreated infectious, laboratory, pathological or sharps waste into land unless authorised to do so by the Minister.[220]
- Discharge health care risk waste to municipal sewer without approval from the municipality in whose area of jurisdiction the activity is conducted, including the requirements of the National Water Act, relating to wastewater discharge.[221]
- Place health care risk waste into a container that does not comply with the packaging requirements of SANS 10248.[222]
- Manually lift a container of health care risk waste weighing in excess of fifteen kilograms including the container. [223]
- Transport health care risk waste over distances exceeding 50 metres unless it is protected by a rigid container.[224]
- Leave health care risk waste unattended in a place where unauthorised personnel or the public have unrestricted access.[225]

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[216] GN 372 in GG 3035 of 15 September 2004.
[217] Reg 2 in GN 372 in GG 3035 of 15 September 2004 and section 6 of *Western Cape Health Care Waste Management Act.*
[218] See para 3.7 above.
[219] Similar offences are found in reg 20 in GG 375 in GG 37654 of 23 May 2014.
[220] Reg 4(a) in GG 463 in GG 41601 of 30 April 2018.
[221] Reg 4(b) in GG 463 in GG 41601 of 30 April 2018.
[222] Reg 4(c) in GG 463 in GG 41601 of 30 April 2018.
[223] Reg 4(d) in GG 463 in GG 41601 of 30 April 2018.
[224] Reg 4(e) in GG 463 in GG 41601 of 30 April 2018.
[225] Reg 4(f) in GG 463 in GG 41601 of 30 April 2018.

- Treat health care risk waste at a waste treatment facility not designed to accept and treat such waste.[226]
- Dispose of waste residue to a waste disposal facility not authorised to accept such waste.[227]

Once the draft regulations come into operation, it will significantly expand the position for prosecution of offences, which may currently be more difficult to prove in terms of the NEMA and the NEMWA.

4.5 Prosecution of offenders

EMIs and SAPS are not authorised to prosecute matters in court, therefore upon conclusion of the investigations, dockets are handed to the NPA for decisions, whether or not to prosecute. These decisions are based on the question whether the state has *prima facie* evidence that establishes the elements of the offence against the accused, whether the state will be able to prove its case against the accused beyond reasonable doubt and whether there are prospects of successfully prosecuting the offender,[228] which then requires that the standard and the quality of matters handed to the NPA be examined.

In circumstances where the NPA decides to prosecute the offender, the matter may either be finalised by way of an admission of guilt fine,[229] plea and sentence agreement[230] or taken to trial.[231] The following paragraphs outline the general principles of criminal law that need to be met in order for HCRW offenders to be found guilty of offences so charged and the trial procedures.

In order to prosecute an offender, the first aspect that needs to be determined is the criminal liability of the offender. In determining this, the general principles of criminal

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[226] Reg 4(g) in GG 463 in GG 41601 of 30 April 2018.
[227] Reg 4(h) in GG 463 in GG 41601 of 30 April 2018.
[228] NPA *Prosecution Policy Directives* 2015 14 https://www.npa.gov.za/content/prosecution-policy-and-policy-directives.
[229] Issued in terms of section 56 of the *Criminal Procedure Act* 51 of 1977 (CPA), admission of guilt fines are only issued in less serious offences and do not apply to hazardous waste such as HCRW.
[230] Section 105A of the CPA.
[231] Where the matter will be heard at a plea of guilty summary trial in terms of chapter 17 of the CPA or plea of not guilty in terms of chapter 18 of the CPA.

law require that the conduct of the offender that is an act or omission must be a voluntary human act or omission prohibited by the law.[232] In addition to this, it is important to note that the mere fact that there has been an element of causation by either an act or omission does not render the offender criminally liable.[233] The general principles of criminal law further require that the conduct must be culpable.[234] This means that there must be an element of blameworthiness[235] that is attached to the conduct. In determining culpability,[236] factors such as intention or negligence are ascertained.

In South African criminal law, intention entails that a person commits an act while his or her will is directed towards the commission of the act and awareness of the unlawfulness of the act.[237] In relation to HCRW offences, intention may for example be observed in illegal dumping of HCRW.

Not only does the law require an element of intention, at times the law punishes acts which are committed negligently. Negligence refers to the conduct of the offender that does not comply with the reasonable standards of care and foreseeability.[238] The prescribed test for negligence is the 'reasonable person' test, which denotes that the accused is said to have been negligent if his or her conduct deviates from the ordinary behaviour of a reasonable person under the circumstances.[239] In relation to HCRW offences, negligence may be proved, where for example, any of the fails to observe the specific requirements set out in legislation or SANS in relation to segregation, labelling, packaging, storage or treatment. In this regard, the 'reasonable person' test may take into account the technical expertise that is necessary to conduct the activity.[240]

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[232] Snyman *Criminal Law* 51.
[233] Snyman *Criminal Law* 149, also see Grant *Critical Criminal Law* 16.
[234] Snyman *Criminal Law* 149, also see Grant *Critical Criminal Law* 16.
[235] Snyman *Criminal Law* 149.
[236] Also referred to as *mens rea*.
[237] Snyman *Criminal Law* 181.
[238] Snyman *Criminal Law* 208.
[239] Grant *Critical Criminal Law* 187.
[240] Snyman *Criminal Law* 217.

In HCRW offences, there are potentially many offenders involved, which makes it difficult to identify and link a specific individual to the offence. For instance, in matters relating to the illegal disposal of HCRW, the investigation team will have to investigate carefully in order to demonstrate a causal link between the waste found and a specific health care facility; once the health care facility is identified, the next issue will be the chain of custody, which will also create challenges, particularly if employees are acting on instructions of their employer. This then also introduces the consideration of juristic persons as corporate offenders.

Issues relating to the enforcement of environmental crimes against corporate bodies have been constitutionally debated.[241] The question is whether or not it is desirable to punish a company that is incapable of acting on its own, for the actions of its directors[242] or employees. The concept also raises specific procedural questions such as who must be summoned to appear before court, who must be found guilty and punished for the unlawful conduct.[243] Section 332 of the CPA deems the acts of directors or servants of a company to be those of the company if they are performed in exercising the duties of the director or servant or if the director or servant was acting in furtherance of the interests of the company.[244]

In *S v Coetzee,*[245] the court dealt with the logic behind corporate criminality and held that directors of the company hold a position of responsibility, this responsibility is not only limited to the corporate body but is also extended to the general public. In this regard, the state has a duty to ensure that the affairs of corporate bodies are conducted honestly, and a corporate body must be protected against the unlawful conduct of those in charge of it.

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[241] *S v Coetzee* 1997 1 SACR 379 (CC).
[242] Section 332(10) of the CPA provides that the term director means "any person who controls or governs a corporate body or who is a member of a body which controls or governs a corporate body."
[243] Section 332(2) provides that "in any prosecution against a corporate body, a director or servant of that corporate body shall be cited as a representative of that corporate body and be dealt with as if he were the person accused of having committed the offence in question."
[244] Section 332(1) of the CPA, also see Snyman *Criminal law* 254 and Farisani 2017 *Fundamina* 2. See also section 77 of the *Companies Act* 71 of 2008.
[245] See note 241 above.

In harmony with principles set out in section 332 of the CPA, section 34(5) read with section 49 of the NEMA,[246] also provides for vicarious criminal liability of companies for the unlawful actions of its directors or employees. The NECERs show a number of environmental law cases where directors of companies were found guilty of contravening the SEMAs.[247] The following paragraphs discuss the procedures to be followed when an investigation into an unlawful conduct by an offender has been concluded and the offender appears before court.

4.5.1 Section 105A of the CPA plea and sentence agreements

Plea and sentence agreements entail a negotiation process between the prosecution[248] and the accused through a legal representative regarding the accused's plea of guilty and a possible sentence.[249] This process entails a procedure where an accused person abandons the right to go to trial in exchange for a reduction in sentence.[250] The agreement is based on the principles of natural justice, administrative due process and meaningful consultation.[251] In general, upon receiving a proposal of the agreement from the accused's legal representative, the prosecution is required to consult the investigating officer regarding the nature of the offence, the personal circumstances of the accused, the previous convictions of the accused and the interests of the society[252] and to afford the complainant, who in this regard will be the DFFE or the affected community, an opportunity to make representations on the proposed agreement.[253] Upon consultation with the investigating officer and the complainant the agreement is then reduced to writing.[254]

The court is prohibited from participating in the negotiations between the prosecution and the accused until such a time that the accused appears before court to plead

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[246] Read with Schedule 3 of the NEMA in GN 731 in GG35665 of 06 September 2012.
[247] For a detailed report in this regard, see The National Environmental Compliance and Enforcement Report (NECER) 2019/2020 https://www.gov.za/sites/default/files/gcis_document/202011/environmental-compliance-2020-report.pdf.
[248] Commonly a Senior Public Prosecutor.
[249] Section 105A(1)(a) of the CPA.
[250] Murombo and Munyuki 2019 *PER/PELJ* 10.
[251] Murombo and Munyuki 2019 *PER/PELJ* 11.
[252] Section 105A(1)(b) of the CPA. Also see Bekker *et al Criminal Procedure Hand Book* 9th ed 221.
[253] Section 105A(1)(b)(iii) of the CPA.
[254] Section 105A(2) of the CPA.

guilty.[255] When the accused appears before court, the court is required by the provisions of section 105A(4)(a) to ask the accused to confirm that an agreement has been reached, to satisfy itself that the requirements as set out in section 105A(1)(b) have been met and that the accused has been warned of his or her rights as contemplated in section 105A(2)(a). Upon consideration of the requirements, the accused will then be required to plead to the charges as set out in the charge sheet, the contents of the agreement between the prosecution and the accused be disclosed to the court and the court to satisfy itself that the accused understands the charge put to him or her, pleads freely and voluntarily in sober senses and without undue influence.[256] If the court is satisfied that that the accused admits all the allegations by the prosecution and is guilty of the offence so charged, the court then considers the sentence agreement between the prosecution and the accused[257] and convict the accused of the offence and sentence the accused in line with the sentence agreement.[258] In circumstances where the court is of the view that the sentence reached is unjust, the court will inform the prosecution and the accused and afford them an opportunity to stand by the agreement and lead evidence to support the agreement or to withdraw the agreement.[259]

This procedure is aimed at speeding up the litigation process by considering the interests of the accused, the complainant, and the state as well as to decongest the heavy court rolls.[260] With specific reference to waste offences, the NECERs reflect this as the preferred method to finalise similar matters. In *S v Jade Pharma Pty Ltd Deon Groenewald* (unreported)[261] the accused was found guilty of the unlawful disposal of HCRW in contravention of sections 16(1) and 26(1) of the NEMWA after entering into a plea

[255] Section 105A(3) of the CPA.
[256] Section 105A(6)(a). if the court after the enquiry is not satisfied that the accused is guilty of the offence so charged, that the accused does not admit all the elements of the offence, that a defence exists, or that a plea of guilty should not stand, the court shall enter a plea of not guilty and provide reasons for the findings as required by section 105A(6)(b) of the CPA.
[257] Section 105A(7) of the CPA.
[258] Section 105A(8) of the CPA.
[259] Section 105A(9) of the CPA, if the prosecution and the accused decide to abide by the agreement, the court will convict the accused and impose a sentence that is just according to the court.
[260] Murombo and Munyuki 2019 *PER/PELJ* 13.
[261] As reported in the National Environmental Compliance and Enforcement Report (NECER) 2019/2020 https://www.gov.za/sites/default/files/gcis_document/202011/environmental-compliance-2020-report.pdf.

and sentence agreement and pleading guilty in terms of section 105A of the CPA. The accused was sentenced to a fine of R200 000- or two-years imprisonment, R100 000 or one year imprisonment suspended for a period of five years.[262]

4.5.2 Trial proceedings

In circumstances where an accused person does not utilise the plea and sentence agreement method as contemplated in section 105A of the CPA, the accused may plead guilty to the offence so charged and convicted in terms of section 112 of the CPA if the court after having sight of the written statement by the accused and having questioned the accused in terms of section 112(2) is satisfied that the accused is guilty of the offence so charged. It is evident that this procedure also aids in the speedy finalisation of matters as it allows the court to convict the accused on the basis of the plea alone and the state not having to prove the guilt of the accused. In this regard, the state need not to call witnesses to testify even though the state is not barred from doing so.[263]

It is not always that an accused person will plead guilty to the charge; in circumstances where an accused person pleads not guilty in terms of section 115 of the CPA,[264] the prosecution will have to lead evidence to prove the charge against the accused person. In the absence of admissions in terms of section 220 of the CPA, the prosecution will bear the onus to prove the existence of all the elements of the offence.

In HCRW offences, the prosecution has to prove that there was an act or omission by the accused, the conduct of the accused person contravenes the provisions of the NEMWA and that the conduct was intentional or was as a result of the negligence of

[262] NECER 2019/2020 https://www.gov.za/sites/default/files/gcis_document/202011/environmental-compliance-2020-report.pdf. The reports also reflect a number of cases dealing with the disposal of waste without authorisations in contravention of the NEMWA finalised by way of plea and sentence agreements.

[263] Section 112(3) of the CPA.

[264] The court may also enter a plea of not guilty in terms of section 113 of the CPA at any stage of the proceedings before sentence it is of the view that the accused does not admit all the elements of the offence or that the accused has a valid defence to the charge.

the accused. The chain of events and the correct sampling of evidence also have to be proven, amongst others.

The prosecution is required to prove the guilt of the accused beyond reasonable doubt as the South African criminal justice system is based on the principle that the prosecution bears the onus to prove the guilt of the accused. This legal standard of proof is associated with the constitutional principle of a right to fair trial that an accused person has the right to be presumed innocent until proven guilty.[265]

In proving the accused person's guilt, the state leads the evidence of the complainant on circumstances surrounding the conduct of the accused that is regarded as a contravention of the NEMWA and HCRW regulations, evidence from the SAPS members and EMIs relating to the arrest of the accused, how the accused is linked to the offence and evidence on the chain of custody of any exhibits discovered in terms of section 31H of the NEMA. In addition to this, the prosecution may also lead expert evidence in terms of section 212 of the CPA on any issue that may require skill in disciplines such as biology, chemistry, physics, anatomy, biochemistry or identification of fingerprints which may be necessary in the issue before court.[266] The roles and responsibilities as set out in the SANS standards and regulations[267] may assist the prosecutor in proving the responsibility of the specific accused person or persons before the court.

Following the admission of all evidence presented before court,[268] the presiding officer is required to weigh all the evidence in totality[269] and decide whether or not the state has proved the charge against the accused beyond reasonable doubt and find the accused guilty as charged or not guilty.

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[265] Section 35(3) of the Constitution, see also Ndwandwe 2009 *The Judicial Officer* 4.
[266] Section 212(4)(a) of the CPA.
[267] See para 3.7 and 3.8 above.
[268] With careful consideration of all the rules relating to the admissibility and relevance of evidence. Also see Schwikkard and Van der Merwe *Principles of Evidence* 3rd ed 45.
[269] It is trite that the standard of proof rests on the state and the evidence must be looked at holistically. Also see Schwikkard and Van der Merwe *Principles of Evidence* 3rd ed 559.

It is not only the state that is eligible to prosecute offenders, but the South African criminal law also makes provision for private prosecution to be instituted against offenders in certain circumstances, the next paragraph focuses on private prosecution of HCRW offences.

4.6 Private prosecution

Individuals are also allowed to institute private prosecutions against offenders in terms of section 33 of the NEMA. The provision affords any person, which includes both natural persons and juristic persons[270] in the public interest or in the interest of the protection of the environment to institute and conduct prosecutions in relation to any breach other than a public duty resting on the state, where that duty relates to the protection of the environment and the violation of that duty is an offence.[271] A person intending on instituting a private prosecution against the offender need not to wait for the breach to occur, as section 33 allows for private prosecution even in the case of a threatened breach of a duty.

Section 33 does not limit private prosecutions to contraventions of the NEMA only, but in respect of environmental offences in any national or provincial legislation, municipal by laws, regulations, licences, permits or authorisations issued in terms of such legislation. Linked to this is section 7 of the CPA which provides that in a matter which the Director of Public Prosecutions (DPP) declines to prosecute an alleged offender, any individual who has an interest in the issue may subject to the provisions of section 9 of the CPA institute and conduct a prosecution in respect of the offence before any court that is competent to hear the matter upon obtaining a certificate *nolle prosequi* from the DPP.

In relation to private prosecutions instituted in accordance with section 8 of the CPA, section 33(2) provides that the provisions of section 9 to 17 of the CPA are applicable. In circumstances were the person instituting and conduct the private prosecution has utilised the services of a legal practitioner,[272] a notice of intention to prosecute has

[270] Section 1 of the NEMA.
[271] Section 33(1)(a), (b) of the NEMA.
[272] Section 33(2)(a) of the NEMA.

been given to the relevant public prosecutor[273] and the public prosecutor has not within 28 days of receipt of the notice communicated the state's intention to prosecute the offender, the private prosecutor shall not be required to produce the certificate *nolle prosequi* and the private prosecutor shall not be obliged to provide security.[274]

Although there is no record of private prosecutions instituted in relation to HCRW offences yet,[275] the decision of *Uzani Environmental Advocacy CC v BP Southern Africa (Pty) Ltd*[276] where Uzani sought to privately prosecute BP for the unlawful commencement of listed activities in contravention of the *Environmental Conservation Act* (ECA),[277] reflects the basis of environmental private prosecutions. As soon as the *locus standi* of the private prosecutor has been established, the criminal trial procedures follow according to the CPA in the same manner as public prosecution. The prosecution of offenders is not without challenges, the following paragraphs focus on the challenges faced by prosecutors in prosecuting HCRW offences.

4.7 Overview of the challenges in HCRW prosecutions

Prosecutors are regarded as the gate keepers of the criminal justice system as they represent the general public in the criminal justice system. Even though NEMA and SEMAs make provision for criminal sanctions to be imposed on offenders,[278] there has not been many environmental prosecutions in South Africa, let alone the prosecution of HCRW offenders. This may be due to the admissions of guilt that are recorded in the NECERs[279] or due to inherent challenges in the criminal justice system which, amongst others, include congested court rolls or delays in investigations.[280] An example in this regard would be a matter where expert evidence of a forensic analysis in

[273] Section 33(2)(b) of the NEMA.
[274] Section 33(2)(c) of the NEMA.
[275] This is the position as at the time of the research of this part of the mini dissertation (October 2021).
[276] 2019 (5) SA 275 GP.
[277] 73 of 1989, the ECA has since been replaced by the NEMA, also see Jara 2019 *Without Prejudice* 1.
[278] Para 4.8 below.
[279] 2017/18 1257 dockets were registered only, 446 were handed to the NPA and only 53 convictions were secured, in 2018/19, 1028 dockets were registered, 424 were handed to the NPA and only 38 convictions were recorded and in 2019/20 1364 dockets were registered, 434 were handed to the NPA and 47 convictions secured.
[280] Kidd "Administrative Law and the Implementation of Environmental Law" 236.

terms of section 212 of the CPA is delayed due to backlogs.[281] This leads to matters being struck of the roll in terms of section 342A of the CPA or provisionally withdrawn by prosecutors pending finalisation of investigations.

Another issue linked to investigations is the lack of expertise amongst members of the SAPS to investigate and prepare cases for prosecution. These challenges are usually attributed to lack of resources and funding[282] while other reports refer to the lack of capacity to deal with all matters efficiently.

In addition to investigations, as highlighted above, the conviction of offenders is based on proof beyond reasonable doubt.[283] In HCRW offences, prosecutors also face difficulties of identifying offenders, proving all elements of the offence[284] beyond reasonable doubt and in the same breath safeguarding the constitutional rights of the accused as provided for in section 35 of the Constitution.[285]

Despite the NECER's yearly statistics on training provided to law enforcement officers including prosecutors and members of the judiciary, there is still a lack of expertise investigating, prosecuting and successfully convicting environmental offenders[286] (and even more so for HCRW offences), which then calls for authorities to provide adequate training to officials. Further to these problems are the often-lenient sentences imposed by judicial officers in environmental crimes[287] which are just a drop in the ocean compared to the harm caused by the offender. This also undermines the main objectives of the environmental legislation and the principles of sentencing which will be discussed in the next paragraph.

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[281] Daniel *Business Insider https://www.news24.com/citypress/news/four-year-saps-forensic-evidence-backlog-on-the-brink-of-being-resolved-20210319.*
[282] Centre for Environmental Rights: Full Disclosure; The truth about corporate environmental compliance in South Africa 2015 https://fulldisclosure.cer.org.za/2015/download/CER-Full-Disclosure.pdf.
[283] See para 4.4.2 above.
[284] See para 4.4 above.
[285] Kidd "Administrative Law and the Implementation of Environmental Law" 237.
[286] Kidd "Administrative Law and the Implementation of Environmental Law" 239.
[287] Kidd "Administrative Law and the Implementation of Environmental Law" 240.

4.8 Criminal sanctions

An environmental crime is a violation of a common law or legislative obligation related to the environment which triggers a criminal sanction. Upon finding an accused person guilty of the offence so charged, it is the trial court's discretion to determine sentencing based on the principles of sentencing which are collectively known as the triad of *Zinn*,[288] these are the seriousness of the offence, the personal circumstances of the accused and the interests of society.

These principles together with principles of deterrence and rehabilitation ought to be taken into consideration by presiding officers when punishment is considered.[289] As it stands there is a perception that even though legislation provides adequate sentences for environmental offenders, the actual sentences handed down by presiding officers are lenient and are considered to be a slap on the wrist for environmental offenders compared to the harm caused to the environment.[290]

In relation to HCRW offences, the NEMA, NEMWA and the HCRW regulations provide for sentences that may be imposed on convicted persons. Section 49B (1) of the NEMA provides that a person convicted in line with section 49A(1)(e) and (f) is liable on conviction to a fine not exceeding R10 000 000 or to a term of imprisonment not exceeding ten (10) years or to both a fine or imprisonment. Whilst section 68(1) of the NEMWA provides that a convicted person shall be liable to a fine not exceeding R10 000 000 or a term of imprisonment not exceeding ten years or to a fine and imprisonment in addition to any other penalty in line with the NEMA if convicted of an offence referred to in section 67(1)(a),(g) or (h). Section 68(2) of the NEMWA further provides that an offender convicted of an offence as contemplated in section 67(2) shall be liable to a fine not exceeding R5000 000 or to a term of imprisonment not exceeding five years or both a fine and imprisonment in addition to any other penalty as contemplated in the NEMA.

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[288] Principles were founded from the decision in *S v Zinn* 1969 2 SA 537 (A) 540G–H.
[289] Terblanche 2013 *THRHR* 95.
[290] Kidd 2004 *SAJELP* 53.

Regulation 13(2) of the Proposed National Health Care Risk Waste Management Regulations also proposes that convicted persons be liable on conviction to a term of imprisonment not exceeding fifteen years,[291] an appropriate fine[292] that is determined taking into consideration the seriousness of the offence based on its impact on aspects such as health, wellbeing, safety and the environment[293] and to both a fine or imprisonment.[294] The stricter sentences are another reason why the proposed regulations should be finalised.

As indicated above, the primary approach to the enforcement of environmental laws is through criminal sanctions and while the above mentioned sanctions may be appropriate on paper, it appears that they lack the element of deterrence as required by the principles of sentencing and prove to be ineffective.[295] As stated above, the sentences imposed by magistrates are often lenient, taking into consideration the maximum penalties suggested by the legislation and bearing in mind the harm caused by the offender. Dating back to 2015, the NECERs reflect convictions secured by the prosecution but lenient sentences such as wholly suspended sentences and partially suspended sentences where accused persons are ordered to pay a minimum fine. This may be due to the absence of minimum sentences for environmental crimes as provided for in other offences.[296] This may also be due to the lack of training of magistrates on environmental crimes, not only does this discourage prosecutors from proceeding on trial, but it also discourages complainants from reporting matters.[297]

[291] Reg 13(2)(a) in GN 463 in GG 41601 of 30 April 2018.
[292] Reg 13(2)(b) in GN 463 in GG 41601 of 30 April 2018.
[293] Reg 13(3)(a) in GN 463 in GG 41601 of 30 April 2018.
[294] Reg 13(2)(c) in GN 463 in GG 41601 of 30 April 2018.
[295] Davids *Compliance and Enforcement: The Legal Sustainability of the Utilisation of Criminal Sanctions in South African Environmental Law* 14.
[296] Such as those provided for in the *Criminal Law Amendment Act* 105 of 1997 as amended by the *Criminal Matters Amendment Act* 18 of 2015.
[297] Fourie 2009 *SAJELP* 93.

4.9 Conclusion

This chapter drew attention to the enforcement of environmental laws and the role players involved in the enforcement of environmental laws. The chapter also identified the current offences created by legislation as well as those in the proposed HCRW Regulations. The punishments attached to these offences were also indicated. Against this background, it is evident that the legislation has provided a framework within which role players such as the EMIs, SAPS, NPA and the Judiciary should ensure that the principles of environmental and health law are upheld. However, there is still room for improvement in enforcing the law, particularly on concerns regarding the lack of training of officials and delays in investigations. The following chapter concludes the study and makes recommendations in relation to the shortcomings noted in the prosecution of HCRW offenders.

Chapter 5
Conclusion and Recommendations

5.1 Conclusion

The aim of this study was to discuss the extent to which the law provides for the investigation of health care risk waste offences and prosecution of health care risk waste. The illegal dumping or incorrect disposal of HCRW necessitated this study.

For the purpose of this study, HCRW was as:

> Any waste which is produced in the diagnosis, treatment or immunisation of human beings or animals or waste that has been in contact with blood, bodily fluids or tissues from humans or infected animals from veterinary practices and includes but is not limited to infectious waste, pathological waste, laboratory waste, genotoxic waste, sharps waste, chemical waste, pharmaceutical waste and radioactive waste.

It is regarded as hazardous waste, which in terms of the NEMWA entails:

> Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles.

Chapter 1 introduced the study and the research question. HCRW can be divided into various categories which require different methods of HCRW disposal. The impacts of the unlawful disposal of HCRW include, amongst others, incineration, autoclaving and microwaving. The rationale behind the improper disposal seems to be linked to lack of training of personnel involved in HCRW management, costs related to incineration procedures and unhealthy competition associated with tender irregularities.

HCRW management involves various role players in its life cycle, namely, generators, transporters and waste managers, all which in principle could be held liable for the illegal or improper disposal of HCRW. The legal framework that regulates HCRW, includes section 24 of the Constitution, as well as the section 2 environmental principles of the NEMA. These principles include, amongst others the sustainable development principle, the life cycle principle, and the duty of care principle and may be relied upon during prosecutions based on the NEMA or the NEMWA. If the prosecution can argue

that HCRW and the management or non-management thereof may have an impact on the environment, then one can argue that these principles will also be applicable on the activities of public organs of state that breach the health legislation.[298]

Waste holders have a general duty of care in terms of section 16 of the NEMWA, as well as several other duties. These duties entail, amongst others, that waste holders must ensure that waste is treated and disposed of in an environmentally sound manner and that waste must be disposed of in a manner that does not endanger health or the environment. The role players in the HCRW management chain have specific duties, particularly in relation to the segregation, labelling and packaging, storage, collection and treatment of HCRW according to the SANS, the proposed regulations and provincial legislation. The roles indicated clearly what is expected of generators, transporters and waste managers and will enable law enforcement officers to understand the process of proper HCRW management. The generators of HCRW also enter into contractual agreements with external service providers for collection and treatment. These contracts should clearly spell out the duties and liabilities of the different role players.

Whereas HCRW offences include section 67 of the NEMWA and section 49 of the NEMA. The proposed HCRW regulations create specific HCRW offences with severe penalties. The need for the formalisation of these Proposed Regulations was highlighted. The prosecution of HCRW offenders will follow the procedures of the criminal justice system. Prosecutors would need to prove all the elements of the offence in order for the offender to be found guilty of the statutory offences.

There are still challenges in relation to the prosecution and sentencing of HCRW offenders as indicated in the following paragraph. The criminal sanctions and sentences imposed by magistrates are lenient and do not justify the harm caused by the offenders.

[298] Section 2(1) of the NEMA. The Department of Health is listed in Schedule 2 of the NEMA as "national departments exercising functions that involve the management of the environment."

5.2 Findings

Based on the issues discussed, the findings are as follows; the introduction of the EMIs by the NEMA and the DFFE has guaranteed development in enforcing environmental compliance. The NECERs referred to reflected growth in the protection of the environment in envisaging the principles of the Constitution. They also acknowledge that the state of affairs is still wanting, and improvements should be considered at all times.[299]

Currently, only two provinces, Gauteng and the Western Cape have promulgated legislation on HCRW. The study revealed specific areas of concern in the legal framework, specifically in relation to the management of HCRW. The non-promulgation of the Proposed HCRW regulations published in 2014 and 2018 necessitates the need for provinces to enact their own legislation. This was however not done in all provinces and the national legislation has to be used in those provinces without such legislation. Prosecutors in these provinces would only focus on the offences created by the NEMA or the NEMWA when preferring charges against offenders.[300] These offences may be more difficult to prove than those set out in the Proposed HCRW Regulations.

The study also reflected on the tender process currently used in South Africa, although the legislation is clear on how tenders should be awarded, there are irregularities attached to the awarding of tenders and this may play a part in the non-compliance of service providers.[301]

In addition, the study also highlighted challenges faced by the criminal justice in successfully prosecuting HCRW, specifically, the delays in investigations, the lack of expertise amongst criminal justice officials to successfully investigate HCRW offences, to prosecute offenders and prove the guilt of the offenders beyond reasonable doubt and to convict and appropriately punish offenders for their wrongdoing.[302]

[299] See para 4.7 above.
[300] See para 3.4 above.
[301] See para 3.9 above.
[302] See para 4.8 above.

5.3 Recommendations

In order to address the challenges identified, the following recommendations are made:

- The Proposed HCRW regulations should be formalised as a matter of urgency.
- The Proposed HCRW regulations should apply to all provinces and provinces with HCRW legislations should align their legislation to the regulations.
- In order to ensure that appropriate sentences are imposed on offenders, minimum sentences, similar to those introduced in relation to common law offences such as robbery with aggravating circumstances, murder and rape should be introduced for HCRW offences.
- In addition to the promulgation of HCRW specific regulations and minimum sentences, training on environmental laws should be provided to investigating officers, particularly those who are working hand in hand with the EMIs, in order to enable them to steer the investigations in the right direction and to adequately prepare matters for court.
- Training should also be provided to the members of the NPA as they have the duty to present these matters before court. Due to budget constraints and court rolls congested with common law offences, it may not be feasible to train all prosecutors. The NPA should consider launching a unit, specifically dedicated to environmental law offences, such as HCRW guided by the NEMA and SEMAs in addition to the existing business units.
- The members of the judiciary have the duty to make decisions on matters presented to them by prosecutors and to also impose sentences on those who are found guilty. This can only be done efficiently, if the members of the judiciary are well trained on environmental and health laws in order for them to apply their minds and to make informed decisions. In lieu of such training, presiding officers may have to opt for assessors trained in HCRW management

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