

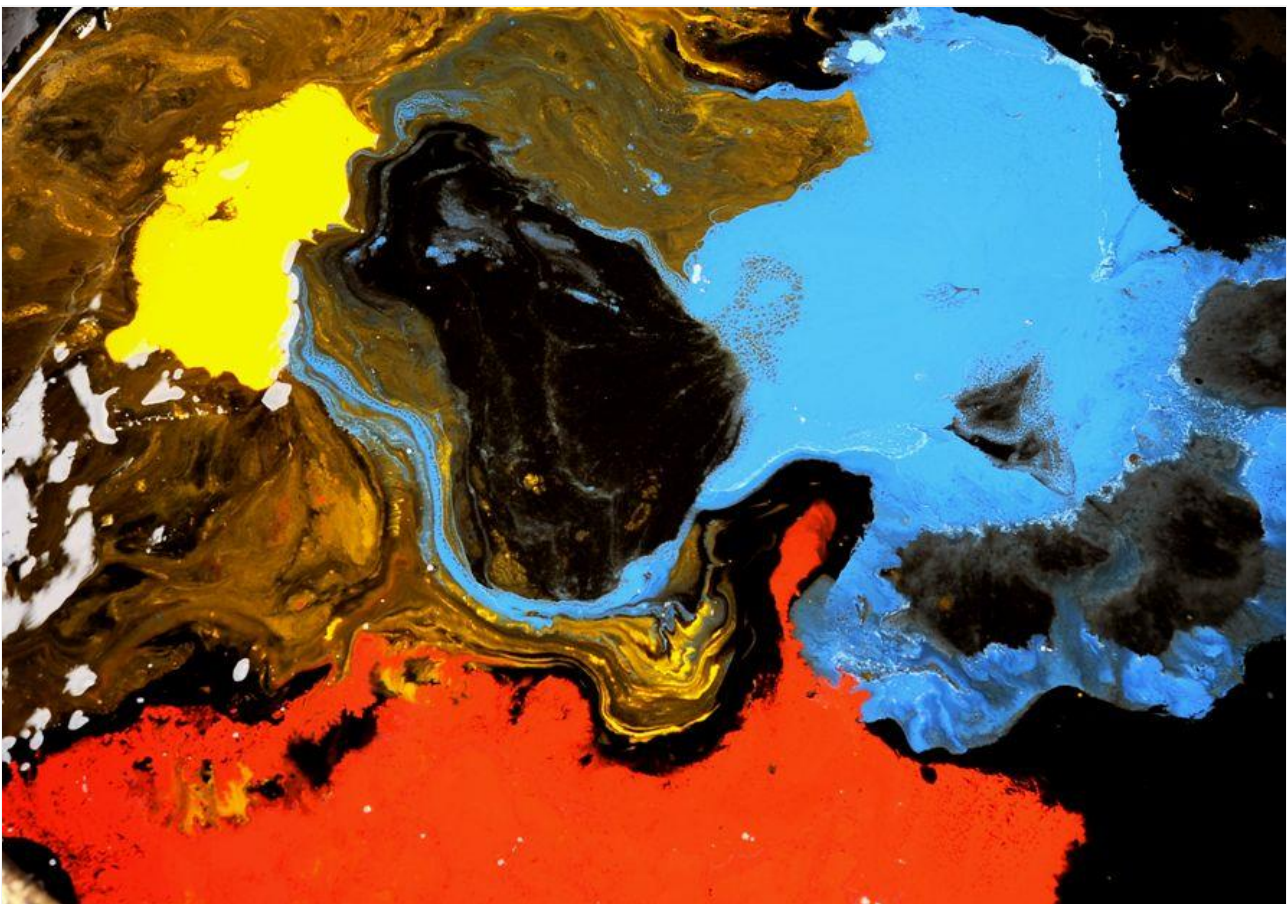
Part 4. Legislation

Identification and analysis of relevant legislation
on Hazardous Household Waste in South Africa

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IVL Swedish Environmental Research Institute

Final Report



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Table of contents

1.	Introduction.....	4
1.1	Aim and scope.....	4
1.2	Method.....	5
2.	Legal and regulatory framework.....	9
3.	Gap analysis.....	11
3.1	National strategies and plans.....	11
3.1.1	National development plan, NDP2030.....	11
3.1.2	Integrated Resource Plan, IRP2019.....	12
3.1.3	National Waste Management Strategy, NWMS.....	13
3.2	The lack of a legal definition of household hazardous waste.....	14
3.2.1	Characteristics of hazardous waste in NEM:WA.....	14
3.2.2	Implications of “Expired, spoilt or unusable hazardous products”.....	15
3.2.3	Further characterisation prior to landfilling.....	15
3.2.4	The origin of hazardous waste.....	16
3.3	Unclear legal responsibilities of the actors involved in HHW collection.....	18
3.3.1	The scope of municipal waste management.....	18
3.3.2	Recently initiated Extended Producer Responsibility (EPR) schemes.....	19
3.3.3	Policy opportunity for improved HHW management.....	20
3.3.4	Financing management of HHW.....	21
3.3.5	Municipal service providers.....	22
3.3.6	Best practice HHW management.....	24
4.	Recommendations.....	26
4.1.1	Define Household Hazardous Waste, HHW.....	26
4.1.2	Initiating source separation.....	28
4.1.3	Acknowledge that there is an underfinancing of municipal waste management.....	29
4.1.4	Occupational health and safety.....	29
4.1.5	Responsibilities of local and district municipalities.....	30
5.	References.....	31

Abbreviations

AHP	Absorbent Hygiene Products
ARF	Advance Recycling Fees
BCMM	Buffalo City Metropolitan Municipality
DFFE	Department of Forestry and Fisheries and the Environment
DST	Department of Science and Innovation
EMI	Environmental Management Inspector
EPR	Extended Producer Responsibility
HCRW	Health Care Risk Waste
HHW	Hazardous Household Waste
IRP	Integrated Resource Plan
IWMP	Integrated Waste Management Plan
NDP2030	National Development Plan 2030
NEM	National Environmental Management act
NEM:WA	National Environmental Management: Waste Act
NPSWM	National Pricing Strategy for Waste Management
NWMS	National Waste Management Strategy
PRO	Producer Responsibility Organizations
SALGA	South African Local Government Association
SAWIC	South African Waste Information Centre
SAWIS	South African Waste Information System
SEPA	Swedish Environmental Protection Agency
WEEE	Waste from Electrical and Electronic Equipment
WMO	Waste Management Officers

Preamble

The Swedish Environmental Protection Agency (SEPA) has since 2015 been cooperating with South Africa and the Department of Forestry and Fisheries and the Environment (DFFE) in the field of solid waste management. The Swedish authorities have been supporting national and local governments to improve solid waste management and handling. The collaboration has over the past four years had a special focus on management of hazardous waste from households, one part being developing and piloting a collection scheme in Buffalo City Metropolitan Municipality (BCMM). The pilot collection scheme was to be a test bed to gather good experiences and build on those for further expansion of separate handling of household hazardous waste in South Africa.

The pilot scheme in BCMM has now commenced, and SEPA is now providing further assistance to DFFE by commissioning work to develop background studies to formulate a national strategy for Hazardous Household Waste (HHW). The background studies comprise four reports:

- 1) Baseline study – an overview of current handling of HHW in South Africa
- 2) A suggested governance model for HHW – the main framework for the strategy focusing on the local level government
- 3) A legal review – a study to evaluate and identify potential gaps in the legal framework linked to HHW
- 4) A lessons learned review – detailing the pilot project BCMM and conclusions drawn from interviews with national experts.

The four reports have been developed by a team of national and international consultants in close collaboration with the local authorities.

The present report is the third report focusing on the legal system linked to HHW and has been written by Johan Hultén and Mathias Gustavsson from IVL Swedish Environmental Research Institute.

Summary

The South African legal system on waste management is comprehensive and includes actions on collection, transport and disposal. There are also actions on actions to reduce waste generation as well as to increase recycling and actions to involve the private sector and producers of goods to have an active part of waste collection and minimisation. The present report focuses the legal framework that is linked to the specific waste stream of hazardous household waste (HHW). HHW constitutes a relatively small part of the total hazardous waste stream, but the household sector provides a sector where actions to separate and collect the hazardous materials are feasible and can go hand in hand with other actions on source separation, extended producer responsibility (EPR) schemes and recycling actions.

The report includes a gap analysis between the ambitions set and the formulations of the legal system. There is a good basis to build on and the legal system provides the starting point for actions on collection of HHW, but there are a number of notable gaps.

One is the lack of a definition of HHW as a specific category. In the waste act, there is no specific mentioning of HHW as a waste category. It is excluded from the definition of domestic waste as it hazardous and it is excluded from the definition of hazardous waste because it is generated in households. This means that even though HHW is generated it is not captured in the legal system. It is suggested to act in short-term with continuation of voluntary actions, local initiatives for collection and guidelines and in the long-term establish HHW in the legal system. This should include impact analysis to ensure a cost-effective approach.

The collection of waste is underfinanced and require innovative and introduction of solutions to cover costs and provide efficient services to the communities. Recent initiatives on establishing EPR schemes can provide one such option. Other are source separation and actions on collection points for HHW. From a general point of view it is advisable that households does not require to pay a fee for dropping off HHW, the costs for the service can be part of the waste collection fee, part of the product cost via EPR schemes or subsidised.

Handling of collected HHW will require special attention to the handling and ensuring that the final disposal is done according to rules and regulations. The contractors will have to ensure occupational health and safety are followed, and that appropriate skills and knowledge on proper handling is found with the work force. At present waste pickers are informal and in order to be involved need to be included in the formal waste management organisation.

1. Introduction

South Africa is committed to supporting sustainable development and ensuring the safety and well-being of its population and environment. Still, a high level of urbanisation increased economic activities and a growing population also means that the absolute amount of waste generated is growing. The increased volumes of waste are needed to be managed in a proper way and the legal framework in place in South Africa provides the basis for this. The overall ambition is the right of people to have a safe environment and well-being. This core principle is part of the constitution. South Africa shows a relatively well-designed legal system, that has been progressively developed to tackle new waste streams, but also acting on experiences from the field. One of the big challenges is found in the adherence of the legal and other requirements linked to the waste management along the whole chain from place where the waste is generated to final disposal or recycling.

This report is focused on the legal framework that is linked to the specific waste stream of hazardous household waste (HHW). The HHW represents relatively small part of the total volume of hazardous waste generated in society. Experience from many parts of the world shows there are good opportunities to collect and properly and safely manage this waste stream. Actions on collection and disposal of the HHW can be interlinked with actions on collection and disposal of the other hazardous waste streams in order to form more cost-effective solutions.

The households have one of the highest gaps between those with higher and low income in the world, the so-called Gini coefficient. This will provide certain challenges in how tariffs and consideration of low- and high-income households are considered in setting tariffs, providing subsidised services etc. But there may also be challenges in terms of opportunities to receive and act on information and guidelines provided as part of campaigns to increase the collection of hazardous household waste.

1.1 Aim and scope

The aim of this task is to present the relevant legal framework for the HHW in South Africa and present a gap analysis of this framework and draw potential recommendations for actions linked to the legal framework.

The task includes identification of relevant legal, policy and strategy documents and then based on these perform the gap analysis. A gap analysis provides a methodological approach to assess the difference between the ambition of the legislature with a specific law and the final formulation found in the text and in relation to other relevant legislation.

The scope of this report is hazardous waste from households and how this is handled and regulated in the legal system of South Africa. HHW is the hazardous waste generated in the residential sector. In the legal system of South Africa household waste is not presented as a category per se. The more commonly found category is domestic waste, which is waste that originates from premises that are used for residential, educational, health care, sport or recreational purposes. Household waste is thus *a part* of the larger category of domestic waste.

HHW that is separated from the mixed waste stream will have to be handled and disposed according to any other hazardous waste regulation. This will include handling by trained personnel and in accordance with protocols and legal requirements. The scope of this report is on the HHW and final handling and disposal of the separated hazardous waste is outside this scope.

Based on the gap analysis a set of recommendations are formulated with suggestions for considerations on improvements on the legal framework to better align with the ambitions of the legislature.

The implementation of the laws, as well as compliance and efficiency in obtaining the set goal is discussed in other parts of this assignment.

1.2 Method

This study is based on a review and analysis of relevant legal and policy texts. The selection of the texts has been using existing identifications in for example the National Waste Management Strategy 2020, the 2nd South Africa Environment Outlook - a report on the state of the environment, chapter 13 on Waste management and the list of relevant policies and regulations (Table 1) by South African Waste Information Centre (SAWIC). Based on compilation and cross-referencing these lists, a first selection to identify texts that are relevant to the HHW specifically was made. After reading the specific texts further exclusion of texts could be made based on the relevance. Relevance was prioritised based on whether the texts could be related to HHW collection, transportation, and storage.

The texts were analysed based on the relevance for the scope of this project looking at the ambition of the legislature and the formulations, approach, responsibilities, and potential conflicts between legal texts, and or gaps. This is presented in the gap analysis.

The gap analysis is the basis for formulation of recommendations that can be considered in the further actions on collection of HHW.

A descriptive presentation of a selection of the relevant laws, regulations and other documents is found in [Report 1-Baseline study](#).

Table 1: Waste management should comply with several legislations. This list is adapted from SAWIC¹ with some additions. Documents that are relevant for HHW and the scope of this report is noted in the list and most of these are discussed in the following gap analysis.

Regulations	Relevant for HHW
Amended National Waste Tyre Regulations August 2016	
Amendment of the Plastic Carrier Bags and Plastic Flat Bags Regulations 2021	
Amendments to the Regulations regarding the Phasing-Out and Management of Ozone Depleting Substances 2021	
Asbestos Regulations 2008	
Date of effect of the Waste Tyre Regulations 2009	
National Waste Information Regulations 2012	Yes
Plastic Bag Compulsory Specification 2003	
Plastic Bag Regulation 2003	
Regulations for the Control of Import or Export of Waste 2019	Yes
Regulations regarding the Phasing-Out and Management of Ozone-Depleting Substances 2014	
Regulations regarding the Planning and Management of Residue stockpiles and Residue deposits and the Amendments to the Waste Management Activity List 2015	
Regulations To Phase-Out The Use of PCB Materials and PCB contaminated materials 2014	
Stockpile Owner Registration Form 2014	
Tyre Producer Registration Form 2014	
Waste Classification & Management Regulations 2013	Yes
Waste Tyre Regulations 2009	
Waste Tyre Regulations 2017	
Withdrawal of integrated industry waste tyre management plan 2017	

¹ SAWIC list of all waste relevant laws and regulation in South Africa and the assessment of relevance for the HHW sector. <http://sawic.environment.gov.za/?menu=13>

Legislation	Relevant for HHW
Amendment Waste Management Activity List 2017	
Call on tyre industry to prepare and submit an industry waste tyre management plan 2017	
Date of commencement of The Waste Act 2009	
Hazardous Substances Act 1973	Yes
List of waste management activities causing detrimental environmental effect 2009	Yes
National Environmental Management Laws Amendment Act, 2014	
National Environmental Management: Waste Act 2008 (Act 59 of 2008)	Yes
National Environmental Management: Waste Amendment Act, 2014 (Act No. 26 of 2014) Gazette No 37714	Yes
National Road Traffic Act 1996	Yes
NEMA, 1998 (AMENDMENT OF NOTICES NOS. R.386 AND R.387 OF 2006)	
Waste Act Amendments Implementation Guide 2014	
Waste Act Made Easy: A user friendly guide to the NEM Waste Act 2011	
Waste policies	
Guideline for the designation of Waste Management Officers	Yes
Guideline for the development of Integrated Waste Management Plans (IWMP)	Yes
Integrated Waste Management Policy of Cape Town	
Model By-Law on Waste Management 2011	Yes
Municipal Waste Sector Plan 2012	
National Policy for the Provision of Basic Refuse Removal Services to Indigent Households 2011	Yes
National Policy in Thermal Treatment of General and Hazardous Waste 2009	
Waste Definition Interpretation 2010	
Waste Picker Integration Guideline for South Africa: Building the Recycling Economy and Improving Livelihoods through Integration of the Informal Sector 2020	

National norms and standards	Relevant for HHW
National Domestic Waste Collection Standards 2011	Yes
National Norms and Standards for Organic Waste Composting 2021	
National Norms and Standards for the Storage of Waste 2013	Yes
National Norms and Standards, for the Sorting, Shredding, Grinding, Crushing, Screening or Baling of General Waste 2017	
National Standards for the Extraction, Flaring or Recovery of landfill gas 2013	
National Standards for the Scrapping or Recovery of motor vehicles 2013	
Norms & Standards for the Remediation of Contaminated Land & Soil Quality 2014	
Norms and standards for the Assessment of Waste for Landfill Disposal 2013	Yes
Norms and Standards for the Disposal of Waste to Landfill 2013	Yes
Extended Producer responsibility (EPR) regulations and notices	
Amendment of the regulations and notices regarding extended producer responsibility 2020, 15 January 2021	Yes
Amendments to the regulations and notices regarding extended producer responsibility 2020, 5 May 2021	Yes
EPR Scheme for the Electrical & Electronic equipment sector 2020	Yes
EPR Scheme for the Lighting sector 2020	Yes
EPR Scheme for the Paper, Packaging and some single use products 2020	
Regulations regarding Extended Producer Responsibility 2020	Yes

2. Legal and regulatory framework

The constitution forms the supreme law in South Africa and is the basis for how the country should be governed. There is no other law that can supersede the constitution and decision makers cannot decide contrary to what is stipulated in the constitution. All citizens have an equal voting in the democratic system which makes South Africa a constitutional democracy. The constitution is relevant in the case of HHW as it clearly states in point 24 of the founding provisions of the Constitution of South Africa (RSA 1996) that (Chapter 1, founding provisions):

24. Environment. - Everyone has the right-

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

To ensure and provide the citizens of South Africa of a safe environment is a core value in the constitution. This is guiding for the legislation, policies and long-term planning.

Legislation can be found on national or provincial levels. The national legislation is found for matters that requires uniformity across the nation of which one such item is “the protection of the environment” (Chapter 6, Provinces, point 146 on conflicting laws in RSA 1996) The national legislation shall provide uniformity to the legislation issued by further adding i) norms and standards, ii) frameworks or iii) national policies. This framework shall make a uniform approach to handle certain high priority items.

Another core document illustrating the value that is given to ensure the environment and well-being of the citizens is the National Environmental Management (NEM) act (RSA 1998). NEM provides the operationalization and framework to ensure that environmental values are honoured, and people’s well-being not challenged by environmental degradation. The NEM (RSA 1998) also provides reference to “Sustainable development” and long-term considerations of securing the environment for future generations. The NEM also clearly make reference to principles that all organs throughout the Republic shall consider and serve as general framework within which the environmental management plans and implementation plans shall be formulated. Among the

principles the waste hierarchy is found (NEM §2 (4) (a) (iv)) “that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;” Among the principals there are also found the right of workers to refuse work that is harmful to the health or the environment (NEM §2 (4) (j)).

The NEM provides reference to a number of specific environmental management Acts of which the National Environmental Management: Waste Act (NEM:WA), 2008 (Act No. 59 of 2008) is one. The NEM:WA has the purpose to (§2)

- a) *regulate the classification and management of waste in a manner which supports and implements the provisions of the Act;*
- b) *establish a mechanism and procedure for the listing of waste management activities that do not require a Waste Management Licence.*
- c) *prescribe requirements for the disposal of waste to landfill;*
- d) *prescribe requirements and timeframes for the management of certain wastes; and*
- e) *prescribe general duties of waste generators, transporters and managers*

NEM:WA includes sections on hazardous waste and also on domestic wastes and different waste categories. The presentation does not include any reference to HHW specifically. This is further discussed in detail below.

The different levels of administration of South Africa are i) national level, ii) provincial level, iii) district level which can be either metropolitan or district municipalities and lastly iv) local municipalities. The metropolitan municipalities (also referred to as category A) are densely populated areas and provides certain special contexts when these are compared to the district, and local municipalities. The District municipalities (also referred to as category C) includes more than one local municipality. The local municipalities (also referred to as category B) are together with other local municipalities forming the district municipality.

The metropolitan areas have municipal executive and legislative authority in its area, whereas the district municipality has municipal executive and legislative authority in its area. Local municipalities will share municipal executive and legislative authority in its area with the category C municipality in which area it falls. So actions to implement HHW collection may vary between the different municipalities and metropolitan areas and cases where the opportunities for joint actions could be good but are difficult due to shared responsibilities are common.

Municipal by-laws are laws adopted by the council of municipalities as part of the power given to the municipality from the constitution of South Africa. The by-laws are found for a number of different areas including waste management. By-laws must be aligned with the national or provincial legislation, or these by-laws will be deemed invalid.

3. Gap analysis

As the previous chapter identified the legal and regulatory framework regarding management of HHW, this chapter analyses specific readings of the framework. It identifies gaps and challenges as well as possibilities for promoting a more sustainable management of HHW specifically.

The chapter starts with analysing three relevant national strategies and plans and how these can support a more sustainable HHW management. Following that, the core of this gap analysis is to shed light on two fundamental questions; What is the legal definition of “household hazardous waste?” and “Who are legally responsible for the collection and treatment of HHW?” Lastly, there are a few other aspects in the legislation affecting management of HHW.

3.1 National strategies and plans

3.1.1 National development plan 2030, NDP2030

The National Development Plan 2030 (NDP 2030) was presented 2013 and aims at eliminating poverty and reduce inequality by 2030. This can be realised via growing inclusive economies, improving capacity of the state and promoting leadership and partnership throughout the society.

The NDP2030 covers a wide range of topics. Specifically linked to waste and waste management actions are for example introduction of measures including price mechanisms to eliminate waste going to landfill and strengthen standards to deal with environmental risks and hazards. There are also actions referenced to in the national recycling strategy to reduce total volume that are put on landfills. The concept of a zero-waste society is used in the NDP 2030, illustrating both consumption, recycling and waste minimisation ambitions.

Recycling and actions to reduce waste volumes are not just an issue of local environmental concerns but also linked to the global climate challenges and proper waste management can support achieving climate emissions reductions.

In terms of tackling hazardous household waste this is linked to ensure recycling, minimizing waste to landfill and to ensure secure occupational health and safety.

The NDP 2030 states that current allocation of responsibilities between local and regional authorities is complicated, but the differentiation can be used to better fit their respective capacities. Again, waste management is not specifically mentioned, but the plan calls for clearer responsibilities on similar infrastructure. It is stated that “large cities should be given greater fiscal and political powers to coordinate human settlement upgrading, transport and

spatial planning. In other areas, regional utilities could provide services on behalf of less well-resourced municipalities, but this must be led by municipalities to avoid undermining democratic accountability for service delivery.

Challenges

Waste management and waste minimization is considered in the NDP2030. The actions are overarching and with high ambitions. The challenge is to identify the actions that will enable the transition to take place. Achieving the goals set of zero-waste in less than 20 years is ambitious. The challenge lies in responsibilities and identification of who will bear the costs. The plan indicates different instruments including the tariffs and other price mechanisms which would enable a market-based approach.

Opportunities

The NDP 2030 provides a good basis to build actions on ambitious action on recycling, source separation and minimization of waste. The plan provides the set goals for actions and also acknowledge the complexity of reaching these ambitions.

3.1.2 Integrated Resource Plan, IRP

The Integrated Resource Plan (IRP 2019) provides a plan for cost effective solutions to provide electricity infrastructure development based on least-cost electricity supply and demand balance. The plan considers security of supply and the environment. The plan mentions distributed power generation through municipal waste as holding great potential for improving municipal revenues².

Challenges

The necessary waste-to-energy/incineration plants will most likely drive costs rather than revenue, although generating some power. But gate fees for receiving waste can indeed drive revenue. It is therefore important to ensure that all suitable wastes are delivered to the waste-to-energy plants rather than to landfill, by regulation and by supervision.

To assure resource efficiency and lower emissions of hazardous substances, the waste destined to waste-to-energy should be sorted and controlled. Recyclable materials should instead be diverted to recycling and hazardous waste should be collected separately and managed as other kind of hazardous waste. Waste-to-energy is a good option for utilizing non-recyclable waste. The feasibility of expanding waste-to-energy in South Africa is however a different question than management of HHW.

Opportunity

Waste to energy requires clean waste as hazardous chemicals and chemicals may react and provide toxic flue gases difficult to clean. This means that the waste-to-energy may put up quality criteria on the waste possible for incineration. Any mixed household waste containing high concentrations of HHW may be difficult to guarantee vis a vis such criteria thus creating incentives for further quality control (source separation avoiding hazardous fractions as part of mixed household waste).

² Page 21

3.1.3 National Waste Management Strategy, NWMS

The most recent National Waste Management Strategy (NWMS) was presented in 2020 and follows the earlier version from 2011. The NWMS provides a framework for implementation of the Waste Act. The strategy also outlines the policy and strategic approach to waste management in South Africa together with cross-sectoral challenges linked to socio-economic development inclusive, sustainable and environmentally sound actions.

Overall, the NWMS is very clear and extensive on actions to be taken and goals to be achieved to achieve a more sustainable HHW management, even though the scope is of course much wider.

The three supporting pillars of the strategy are

- Waste Minimization
- Effective and Sustainable Waste Services
- Compliance, Enforcement and Awareness

All of these are elements of a sustainable management of HHW.

The strategy is “based on building a secondary resources economy around the beneficiation of waste” from recycling and the recovery of soil nutrients and energy. To achieve this municipalities are encouraged to work in closer collaboration with the informal and private sector. “Adjusting municipal budgets” is also a focus area.

Another focus area is “Safe Management of hazardous household wastes and absorbent hygiene products waste”. First of all, it is unfortunate that these are mentioned together as these will most likely never be collected or treated together. But suggesting that waste treatment options and standards for safe collection should be developed is positive.

The strategy contains numbered targets on the amount of new drop-off centres and appointed EMIs dedicated to monitoring compliance and enforcing the Waste Act.

The strategy is also clear on what is functioning poorly, such as lacking collection systems and lack of finance.

Challenges

There may be a conflict of goals between the second and third supportive pillar of the NWMS. That is, compliance and enforcement may add to administrative burdens thus hindering an effective waste service. All aspects are equally important and should be considered in parallel. The monitoring and evaluation framework of the NWMS is however quite strict and extensive, compared to the standard of waste management it is reporting about.

Regarding the building of a secondary resource economy, it is important to consider the different actors of the waste management sector and where income is generated. If waste pickers and private companies are collecting valuable waste streams such as Waste from Electrical and Electronic Equipment (WEEE) and waste oils, then municipalities are left with mixed and hazardous waste, it will not be economically sustainable. The informal sector and private companies are crucial to the recycling currently taking place but a rational division of resources is needed to achieve the objectives of the NWMS.

Hazardous household wastes and absorbent hygiene products waste, such as diapers, are both very unpleasant to handle. They will however need different

kinds of collection service as the first one can usually be stored safely for quite some time whereas the other needs collection within hours or days. For practical reasons, these two should not be grouped together as they are in the NWMS, for the sake of clearer definitions.

Overall, with the challenges identified above and acknowledgment of the poor performance of the current waste management system, it is evident that financing and effective cooperation is lacking, rather than clear legislation or strategies. The NWMS acknowledge that “suggested tariff increases... would be politically unsustainable” in municipalities. The suggestion of partnership with the private sector, to let them invest, may be overly optimistic in relation to HHW.

Opportunities

Advanced Recycling Fees (ARFs) in the context of Extended Producer responsibility (EPR) schemes is pointed out as creating an enabling environment. That is, producers of certain products pay in advance for the waste management. Incentives and subsidies are also pointed out as enhancing commercial viability of EPR schemes.

3.2 The lack of a legal definition of household hazardous waste

There is no lack of regulation regarding management of hazardous waste, but there is a lack as to determining which waste components shall be regarded as HHW. Uncertainties like this affects the actors who are responsible for managing HHW and is hindering implementation of legislation and strategies. Here, the various definitions of different wastes are analysed to understand the gaps that cause these uncertainties.

3.2.1 Characteristics of hazardous waste in NEM:WA

The definition of *hazardous waste* in the National Environmental Management: Waste Act 59 of 2008 as amended by act 26 of 2014 (NEM:WA) is

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...

It then provides a list of subcategories of “Category A: Hazardous waste”.

Challenges

This definition poses several problems as to defining hazardous waste from households.

The definition is vague as to which these physical or chemical characteristics are. Toxicological characteristics can be many things but may not be interpreted as for example ecotoxicological, mutagenic or sensitizing (causing allergies) characteristics.

The definition of hazardous waste also misses out on the possibilities of biological hazards as waste can contain infectious microorganisms, not just elements or substances. This is however somewhat contradicted by the

inclusion of “Wastes from human or animal health care and/or related research” as a Category A: Hazardous waste.

Opportunities

As the definition is not very strict, it allows for a more flexible approach to management systems.

3.2.2 Implications of “Expired, spoilt or unusable hazardous products”

This is a term used in the Waste Classification and Management Regulations, 2013. It is not clear which waste types that are covered by this term, but from the wording HHW could indeed be included.

These regulations clarify how waste is categorized into hazardous or non-hazardous, or rather, which waste types that do not require classification. It clarifies which waste types that requires safety data sheets and waste manifest documents during transport and treatment.

Elemental to the regulation is classification of waste according to the standard SANS 10234 (South African National Standard Globally Harmonized System of Classification and Labelling of Chemicals (GHS)). But hazardous waste generated in households should regularly not have to be classified according to SANS 10234. This is due to the exceptions in Annexure 1, 2 (a) and (b), stating that domestic waste and “Expired, spoilt or unusable hazardous products” do not need classification.

Challenges

The common use of electronic and electric devices, oils, chemicals and paints in households will cause a significant addition of hazardous substances to the domestic waste, if separate collection is not utilized. The wording “Expired, spoilt or unusable hazardous products” should include much of the separately collected hazardous waste arising from households, although the term is not explained further in the Waste Classification and Management Regulations 2013.

In the case of separate collection of “Expired, spoilt or unusable hazardous products” the transporters and waste managers, but also the households themselves, would require safety data sheets (5 (2) (b)) and a waste manifest (11 (2)) to handle separately collected waste. This may be an unreasonable demand on household, following source separation as opposed to delivering mixed domestic waste. But at collection points and transport by waste handlers, HHW should of course be subjected to the same strict regulations as all hazardous waste.

3.2.3 Further characterisation prior to landfilling

The norms and standards for the Assessment of Waste for Landfill Disposal, 2013 divides waste into five categories, type 0-4, rather than the definitions in NEM:WA. These are correlated to the perceived hazard of the different kinds of waste. The term “hazardous waste” is not directly correlated to these categories, although all but type 4 can be considered to be hazardous.

Domestic waste and “Expired, spoilt or unusable hazardous products” is however excluded from being assessed.

The National Norms and Standards for the Disposal of Waste to Landfill, 2013 states which waste types requiring a certain landfill class for disposal or whether the waste type is allowed to be landfilled at all.

Section 4 (2) states that domestic (non-hazardous) waste can only be disposed of at class B landfills or better, whereas section 4 (3) states that “Expired, spoilt or unusable hazardous products” can only be disposed of in class A landfills.

There are also waste disposal restrictions, effectively a landfill ban, on several types of hazardous waste under section 5. These includes many of the hazardous products generated in households such as WEEE and batteries, but also containers of compressed gases and many household chemicals (due to extreme pH).

Challenges

Further classification that is not directly aligned with NEM:WA can be seen as a barrier as it requires more administration, although there seem to be no contradictions. With a clearer definition of HHW and “expired, spoilt or unusable hazardous products”, proper administration will be made easier.

A segregation of hazardous waste from domestic waste will require proper management of the resulting material. This requires proper handling in advanced class A landfills, as opposed to the domestic waste that still will go to less advanced class B landfills.

The landfill ban requires even more thorough separation of waste prior to collection or by a waste manager, for example at a drop-off centre. It of course also requires proper waste treatment facilities, not only class A and B landfill sites.

3.2.4 The origin of hazardous waste

According to NEM:WA, waste from households should mostly fall into “domestic waste” but also “building and demolition waste”.

The definition of *building and demolition waste* is

waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition...

Alteration and repair are typical activities for individual homeowners. Although the definition clearly excludes hazardous waste, several waste types under point 15 *construction* in the list of Category A: Hazardous waste could arise from households, such as:

(d) wastes from insulation materials and asbestos-containing construction materials

(f) wastes from other construction and demolition (impregnated wood, paint or glass containing lead etc)

The definition of *domestic waste* in NEM:WA is

waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes.

This in turn divided into three categories under point 12 *Domestic wastes* in the list of Category B: General Waste:

- (a) *garden and park wastes*
- (b) *municipal waste*
- (c) *food waste*

All types of waste that is generated in households will to some extent be mixed in “municipal waste”, which is not further explained. In some municipalities garden and park wastes as well as food waste will be collected separately and should not contain significant amounts of hazardous substances. Any waste that is not collected separately from households or educational, health care, sport or recreation premises will then be mixed as municipal waste.

It should however be noted that the word household, as in HHW used in this project, is not found in NEM:WA. Hazardous products is used in “educational, health care, sport or recreation” activities and will be part of domestic waste just as hazardous products from households.

In the National domestic waste collection standards 2011, the definition of *domestic waste* is more elaborate than in NEM:WA, adding

Domestic waste can be classified into recyclable and reusable, compostable and also non-recyclable or non-usable. Domestic waste for the purposes of the standards does not include commercial and industrial waste, building rubble and 'hard' or non-compostable garden waste.

Further down in the standard, *non-mainstream recyclables* is defined as *electronic waste, scrap metal, batteries, fluorescent lights, used oil etc.*

Apart from scrap metal, this consists mostly of household hazardous waste.

“Domestic health care waste” is also defined here, but not mentioned on how it should be collected.

Challenges

It is problematic that the definition in NEM:WA clearly states that hazardous waste is “business waste, residue deposits and residue stockpiles” implying that households cannot generate hazardous waste. Again, this is contradicted by the list of Category A: Hazardous waste, which includes a few typical waste types from households under point 14 *Other wastes not specified in the list*

- (b) *hazardous portion of wastes from electrical and electronic equipment*
- (d) *wastes from discarded gases in pressure containers and discarded chemicals (spray cans and household chemicals)*
- (h) *oxidizing substances wastes (bleach)*

The mentioning of “non-mainstream recyclables” in the National domestic waste collection standards 2011 implies that hazardous substances is not hazardous waste as long as they originate from households. This is however not clearly stated and will confuse the implementation of other norms and standards above.

That is, the definition of household waste is lacking as this is considered to be similar to waste from other sectors. This makes sense as the composition of waste from several of these sectors should be similar to household waste, as it

is generated by the presence of people, not industrial processes. Health care waste may deviate from this, containing more non-food biological matter that may be unpleasant to handle.

Hence, hazardous waste from households is not clearly defined in NEM:WA. Rather it is assumed not to exist, although the definitions are somewhat self-contradictory.

3.3 Unclear legal responsibilities of the actors involved in HHW collection

Responsibilities can be divided into who is responsible for carrying out waste management and whose responsibility it is to finance such a scheme. The Constitution of the Republic of South Africa no .108 of 1996 states that municipalities are responsible for “Refuse removal, refuse dumps and solid waste disposal”. The National environmental management act no. 107 of 1998 states in section 2 (4) (p) that “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.” That is the polluters pay principle. It is not always that easy to define who the polluter is in case of households. For example, in the case of hazardous household waste in the form of some paint; is it the household owner or the paint producer that should be considered as the polluter? As will be seen there are differences on how to approach this.

3.3.1 The scope of municipal waste management

In the Municipal Structures Act (117 of 1998) it is regulated how the hazardous waste management responsibilities are divided. Local and metropolitan municipalities are responsible for refuse removal, refuse dumps and solid waste disposal. District municipalities are responsible for solid waste disposal sites serving the area of the district municipality as a whole and promoting equitable distribution of resources between local municipalities to ensure appropriate levels of municipal services within the area. The local municipals should be responsible for refuse removal, refuse dumps and solid waste disposal, but the legal act does not say much about waste from different sectors nor the structure of modern waste management.

The NEM:WA does not directly delimit the municipalities responsibility to domestic waste or general waste, but section 23 regarding waste collection services includes the words “people”, “persons” and “the public”. This implies that municipal waste services are mainly for households and not mainly for the needs of industry or mines, where most hazardous waste is generated.

The National domestic waste collection standards 2011 outlines the minimum requirements for domestic waste collection. Here it is clearly stated that these standards relate to collection of domestic waste, implying that domestic waste is the core of municipal waste management.

Section 4.1 reads that “separation at source must be encouraged” and “supported in line with the relevant industry waste management plans.” This implies that municipalities must cooperate with the private sector to enable economies of scale and harmonized treatment methods. This cooperation will

have to be with mainly producer responsibility organizations (PRO) within EPR schemes, currently under development.

The department of environmental affairs drafted in 2018 guidelines on separation of waste at source. Here it is stated that “non-mainstream recyclables” should be routed to collection by municipalities or their service providers.

It is stated in the “National Policy for the Provision of Basic Refuse Removal Services to Indigent Households 2011” that municipalities should provide free waste services to some households or areas. Whether or not this basic refuse removal should include source separation is not stated, but it is stated that the term domestic waste may be limited to only cover residential premises.

How the issues above are implemented in each province and municipality should be covered by their Integrated waste management plan (IWMP). The contents and monitoring of each IWMP is described in NEM:WA, such as local targets and priorities. The Department of Environmental affairs have further developed guidelines on the contents on IWMP:s.

Challenges

The wording “solid waste disposal sites” does not take into account different measures to better collect waste that has been separated at source and is intended for various treatment methods. More complex collection and treatment methods entails more economies of scale, than mere disposal sites. Regional coordination will enable a more robust and cost-effective waste management.

Although legislation and standards are quite specific in terms of the core business of municipalities and the issue of domestic waste, it is less clear where these responsibilities stop. There may be cases where the responsibilities fall between chairs, or where the expectations on free collection services are taken for granted while this is not the case. This uncertainty may cause inefficiencies in the collection and management systems.

The development of an IWMP should make for a clearer picture, but the guidelines on doing this are very extensive. This may make a high threshold for many municipalities lacking resources, resulting in poor connection to day-to-day operations and poor monitoring. The contents of an IWMP outlined in NEM:WA is also quite extensive but states that prioritizations should be made.

3.3.2 Recently initiated Extended Producer Responsibility (EPR) schemes

EPR schemes are currently being initiated regarding some fractions of HHW, that is WEEE and lighting waste. The demands on producers and producer responsibility organizations (PRO:s) are detailed, and should provide for a sustainable waste management of these products if implemented correctly. An EPR scheme provides the responsibility of collection and management of the waste resulting from the products and also solves the aspect of “who will pay” as it will become an integrated part of the cost of the primary product.

Introduction of EPR schemes is presently an ongoing process and discussion between parties; hence it is not feasible to delve into a detailed gap analysis of these regulations as part of the project.

Challenges

The main idea of EPR is for industries focus on specific waste streams, but another side of that coin is the fragmentation of responsibility to provide collection systems that are accessible and intuitive for households. This fragmentation may be exacerbated if too many PRO:s are created for the same waste stream.

Another challenging feature of EPR:s relate to how much of the waste that should be collected separately. Producers are obliged to recycle separately collected waste, but not the portion that ends up as mixed waste.

Possibilities

Functioning EPR schemes will improve management of the HHW that are included in the different specific EPR. Other fractions of HHW will still be the responsibility of municipalities. It is good that it is a clearly stated obligation of PRO:s and independent producers to co-operate with all municipalities.

3.3.3 Policy opportunity for improved HHW management

There are possibilities to improve HHW management top-down by the use of use legal requirements formulated by the Minister.

Section 86A of the Municipal Structures Act (117 of 1998) and section 86A of the Municipal Systems Act (32 of 2000) describes the possibilities to regulate waste management further:

(1) The Minister may for purposes of this Chapter make regulations or issue guidelines in accordance with section 120 to provide for or regulate the following matters:

(e) incentives and penalties to encourage (ii) the recycling of waste; and (iii) other environmental objectives.

Section 69 of NEM:WA states that the minister may make regulations regarding:

(o) the financial arrangements of waste minimisation programmes;

(x) requirements in respect of the funding or insuring of a waste management activity

(bb) incentives and disincentives to encourage a change in behaviour towards the generation of waste and waste management by all sectors of society

Similar to section 86A, recycling is mentioned in section 74 of the *Municipal Structures Act (117 of 1998)* and section 74 of the *Municipal Systems Act (32 of 2000)*:

(2) A tariff policy must reflect at least the following principles, namely that- (h) the economical, efficient and effective use of resources, the recycling of waste, and other appropriate environmental objectives must be encouraged.

To ensure implementation of integrated waste management, government, provinces and municipalities shall appoint Waste Management Officers (WMO) according to section 10 of NEM:WA. There are also guidelines published for the designation of WMO, clearly stating the obligations and powers of WMO:s. Both NEM:WA and the NWMS also points at the importance of Environmental Management Inspectors (EMI:s) assigned to enforce the waste act.

Possibilities

The word “recycle” in these sections of the Municipal Structures Act (117 of 1998) and the Municipal Systems Act (32 of 2000) does not incorporate minimizing the harmful content of waste, but it could be an environmental objective.

The issue of only promoting recycling is also dealt with in section 9 of NEM:WA, where municipalities are given the right to set local standards for separate collection and directing to waste treatment.

The Minister could thereby, supported by these acts, develop regulations or guidelines concerning service provided by municipalities, as well as provide incentives regarding their tariffs and financing.

It is also supported by legislation to assign WMO:s and EMI:s to assure implementation and enforcement of proper HHW management.

3.3.4 Financing management of HHW

The National Pricing Strategy for Waste Management 2016 (NPSWM) was developed in concurrence with section 13A of NEM:WA. The “polluters pay principle” is elemental in that strategy. It is however somewhat nuanced in *section 4.1.1*. where it is stated that

volumetric tariffs could be applied differentially on the basis of income levels or some proxy thereof

and

charges in question (or higher charges) should apply to waste that is destined for disposal to landfill, whereas no charges (or lower charges) should apply to waste that is destined for reuse, recovery or recycling; while the opportunity for recycling to be subsidised should also be considered.

NEM:WA states in *section 9 (2)* about how municipalities collect tariffs:

(d) providing such services at an affordable price, in line with its tariff policy referred to in Chapter 8 of the Municipal Systems Act;

(e) ensuring sustainable services through effective and efficient management.

(f) keeping separate financial statements, including a balance sheet of the services provided.

Section 4.2 of NPSWM describes EPRs and other upstream economic instruments to fund waste management. These are for example product taxes and advance recycling fees (ARF) enabling the purchase of a product to finance its future waste management.

As a guiding principle it is advisable that *the households* should not have to pay any direct fee for disposing HHW. In the case of collection, the cost for this can be an integrated part of the general collection fee and in case of EPR it is part of the product cost. In case of private or other companies or persons there is options to charge for the disposal services.

Challenges

For HHW fractions that are currently not under an EPR scheme, product taxes or advance recycling fees (ARF) could be an option for financing waste management. These are however very heterogeneous products and deciding which products to be taxed would be very complex.

According to pp 67-68 of NWMS, full-cost accounting is only taking place in very few municipalities, due to the lack of data or that it is impossible to raise tariffs as would be needed. Full cost accounting may however be too high demand currently, but to at least produce separate financial statements could be a start as it would provide an incentive to collect the necessary data.

Possibilities

The NPSWM provides a wide array of economic instruments to be utilized. EPR schemes concerning some fractions of HHW may be very suitable to provide funding and collection systems for those fractions.

Municipalities have few options of affecting households when charging flat monthly payments, which is common. Charging volumetric tariffs or pay-as-you-throw would incentivise separate collection of HHW, but mainly affects recyclables of higher volume. It is therefore out of scope for this study. But providing collection systems for HHW free of charge is a suitable complement, and made possible by NEM:WA. Collection of domestic waste would the subsidize the management of HHW.

A key element of sustainable financing in municipalities is NEM:WAs demand of keeping separate financial statements, including a balance sheet of the services provided. Revealing the true costs of waste management as well as its correlation to collected tariffs, should make underfinancing clear and at the same time ensure that sufficient financing is earmarked in municipal budgets.

3.3.5 Municipal service providers

The local municipals (category B) and metropolitan areas (category A) are responsible for collection of all household waste. The local municipalities and metropolitan areas are also responsible to arrange the management of the collected household waste. In case these municipalities can agree to work together and arrange combined solutions this would provide a basis for scale of economy in final disposal and treatment. This can for example be initiative on district municipality (category c) level or other constellations. The challenge here is to find a functional and acceptable cost contribution solution between the municipalities participating in such a joint action.

NEM:WA states in section that

25. No person may collect waste for removal from premises unless such person is—

- (a) a municipality or municipal service provider;*
- (b) authorised by law to collect that waste, where authorisation is required; or*
- (c) not prohibited from collecting that waste.*

Informal waste collection is thus not included but still very common for picking the recyclable items in the household waste. Waste pickers may be included as part of contracts with municipal service provider and thus become more formal

part of the waste collection system. In the case of picking HHW there are restriction in terms of handling hazardous waste that the contractor should comply with. In the case of the waste pickers this compliance will have to be ensured via contractual agreements etc which are presently not commonly found.

The Municipal Systems Act (32 of 2000) outlines the key steps needed before municipalities can partner with the private sector for waste management. In the Act the tariff policy is also regulated.

In the National domestic waste collection standards 2010 "community contractors" and "community transfer" are to be utilized mainly in medium density settlements, as there is a perceived job creation potential. In the definitions part of those standards, it says that a "Service provider" can be a "community that is contracted by the municipality", apart from the municipality itself or an external entity (most likely a waste management company).

Local community contractors are part of the formal system and is thereby controlled by laws and regulations. It is well known that a large numbers of waste pickers are finding their livelihoods with waste picking, and also contributing to recycling materials that would elsewhere end up in landfills, or in nature. The waste pickers are typically not part of the formal waste management system, but rather act as self-employed actors outside the system. This means that the legal requirements that are put on the formal stakeholders are not enforced in the same way. In the case of HHW these materials will require special care in both collection, handling and final disposal. According to present legal framework this can only be done within the formal system, thus excluding any involvement of informal waste pickers. If waste pickers are formally engaged and contracted this would be possible. In addition to contractual arrangement the waste pickers will have to comply with occupational health and safety requirements and also have necessary knowledge and equipment to handle the HHW in a safe manner.

The National Environmental Management Act 107 of 1998 (NEM) reads in section 2 (4) (j) that "The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected." The Occupational Health & Safety Act 85 of 1993 aims to prevent work-related injuries and illness by regulating health and safety in all organizations. It concerns all employers and employees. According to this act self-employed persons 9 (2) have obligations not to risk that other persons are exposed to hazards. So shall employers 9(1) and all employees 14. It is also regulated that there should be health and safety representatives among the staff etc.

The National norms and standards for the storage of waste 2013 states in section 13 (5) that only trained persons may handle hazardous waste. This regards waste storage facilities with a capacity to store more than 80 m³ of hazardous waste. This restricts access to these facilities by persons of the informal sector.

Challenge

The waste pickers in South Africa are presently informal and not part of the formal waste management sector. Still waste pickers play a major role in ensuring recycling of materials such as PET plastics, glass and cardboard which can be sold to buy-back centers, recyclers or other buyers. In case waste

pickers will be involved in HHW collection this group will have to comply to occupational health and safe standards as well to arrange collection and further disposal of HHW in a safe and controlled manner.

The responsibility for health and safety is clear and shared in formal companies, but compliance to existing regulations in the informal sector is not followed up or controlled. Procedures that are perceived as dangerous may not be conducted by formal companies and therefore poses dangers to workers outside the formal system. Any actions for collection and handling of HHW should be part of formal system.

3.3.6 Best practice HHW management

The National domestic waste collection standards 2011 states in

Section 4.2 (b) non-mainstream recyclables (electronic waste, scrap metal, batteries, fluorescent lights, used oil etc) must be routed to clearly marked drop-off centres at well-advertised locations for collection by service providers in the relevant recycling sector.

In connection to this section is a Guideline for collection of recyclables, reading:

The viability of recycling relies heavily on economies of scale. It is therefore important that enough clean recyclables (from separation at source including households) must be accumulated to justify the cost of transport associated with the collection of recyclables.

The following issues must be considered:

- *The use of existing infrastructure (i.e. garden waste centres, landfills) for temporary accumulation and storage of recyclable waste. This may require an amendment to existing landfill permits;*
- *Bulk waste transfer facilities for recyclable waste by district municipalities;*
- *Regionalisation of collection of recyclables to ensure economies of scale especially in remote areas; and*
- *Collaboration with recycling companies to avoid potential bottlenecks.*
- *If there is no recycling market for source separated recyclables, waste-to-energy options must be considered prior to disposal.*

These are very clear statements on what is the responsibility of municipalities regarding the collection of household hazardous waste, although it is here referred to as “non-mainstream recyclables.” This is repeated in the draft guidelines on separation of waste at source from 2018.

These standards point to drop-off centres as key to collecting recyclables. The setup of such a centre is thoroughly described in the document. Other terms are used in the text, namely “central collection point” and “communal collection points”, which are most likely the same thing.

Section 4.2 also points at the potential for kerbside collection or co-operation “with the recycling sector to ensure the provision of facilities where recyclables can be dropped-off”.

In 2020, DFFE and the Department of Science and Innovation (DST) published the Waste Picker Integration Guideline for South Africa: Building the Recycling Economy and Improving Livelihoods through Integration of the Informal Sector.

The aim of the guideline is to support the implementation of the NWMS and, as the country now moves towards the implementation of mandatory Extended Producer Responsibility (EPR), the guideline will be particularly relevant to Producer Responsibility Organisations (PROs) and municipalities, to ensure integration of waste pickers in the collection schemes. Integration of the waste pickers will require attention given to training and that the waste pickers comply with laws and regulation linked to the waste management. HHW will be a special case with added conditions in terms of their operation from picking material to disposal.

Challenges

There is some confusing use of terms as drop-off centres, central collection points and communal collection points are used for seemingly the same kind of facility. Additional guiding and good examples may be needed.

More problematic is the use of the term non-mainstream recyclables. If this does indeed relate to HHW, this should be linked with clear responsibilities and financing of collection schemes. It also demands that all regulations on handling, storage and transportation on hazardous waste are fulfilled.

Opportunities

The National domestic waste collection standard 2011 is quite clear on the possibilities and best practice for municipalities on integrated waste management. The guidelines for source separation provide a basis for increasing recycling of waste. The guides do only briefly discuss the special challenges that will be the case for hazardous waste from households, and specific actions to ensure safe and appropriate management of these materials.

4. Recommendations

The GAP analysis provides basis to formulate some recommendations for consideration in the continued work. Changing legislation is no simple task and the analysis also shows that most aspects of proper management of HHW are considered, while there are also strong indications that the compliance and realization of the legal requirements are often the missing link. The recommendation can also be seen as priorities where actions in respect to legislation and regulations can be made. The highest priority is to ensure that HHW is collected according to best practice and not just treated as any general waste fraction.

4.1.1 Define Household Hazardous Waste, HHW

A main conclusion from this gap analyses is the need for a legal definition that would include or specify HHW as a specific category. In the waste act, there is no specific mentioning of HHW as a waste category. It is excluded from the definition of domestic waste as it hazardous and it is excluded from the definition of hazardous waste because it is generated in households.

A *short-term recommendation* would be to acknowledge three things about HHW:

- There is a legal gap in defining HHW that has consequences, such as uncertainties when setting up source separation schemes, deciding on responsibilities or reporting progress. The intent should be not to hinder these initiatives.
- Hazardous products are a small part of what is today classified as mixed “non-hazardous” domestic waste. Municipalities should be encouraged to keep these products separated/segregated from the “non-hazardous domestic waste. Clear regulations exist today on management of hazardous waste and should be applied to these products, even though this will drive costs, to ensure safer landfilling and higher quality recycling.
- There are examples of guidelines for HHW management, for examples developed by the Western Cape government. Provinces and municipalities do not need to await national legislation to start implement solutions.

A *long-term recommendation* would be to amend waste legislation with a definition of HHW. The legal wording or strategy to accommodate for this addition could however be done in different ways, with different implications. There are four main options:

- The definition of Domestic waste could be changed to include hazardous waste. But domestic waste covers more than households, such as schools and health care services that does not generate waste in the same way as households and should for practical reasons not be covered by the same collection system, or
- The definition of Hazardous waste could be changed to include waste from households. But other regulations regarding management of hazardous waste is developed with the industrial sector in mind, such as the requirement of safety data sheets and a waste manifest to handle separately collected waste, unpractical for households, or
- HHW could be defined as a new category by itself, but this would need plenty of exceptions in other regulations and be confusing as most fractions of HHW is also covered by domestic waste or hazardous waste, or
- As it is stated in the national policy on providing Basic Refuse Removal services that the term Domestic waste may be delimited to only include residential premises, that is households. If municipalities are to provide collection of specifically HHW a similar delimitation through a guideline could be feasible.

An analysis of the consequences as result of the suggested action to define HHW is needed before amending the waste act or developing guidelines on HHW management. The intent should be to clarify responsibilities and ensure financing and infrastructure for HHW management.

Apart from a general definition of HHW, it will be a need to identify additional subfractions. There are already lists of which types of waste that can be hazardous waste which could also be applied for specifically HHW. There is reference to "Category A: Hazardous waste" in NEM:WA, but also the standard SANS 10234, waste codes used by SAWIS and lists by different municipalities. These lists are not entirely harmonized, although similar. Harmonizing these in a top-down manner is however not an urgency. Bottom-up action might be more suitable to scale up collection of HHW on a more voluntary basis initiated from the local municipalities and metropolitan areas. As long as HHW originates from source separated domestic waste, as acknowledged above, municipalities should have the flexibility to start source separation step by step.

Two important terms regarding HHW are used in several regulations, standards and norms. These are "Expired, spoilt or unusable hazardous products" and "non-mainstream recyclables". The first is not defined further and the latter contains for example typical HHW such as electronic waste and used oils. Another recommendation would be to clarify whether or not these two terms do indeed cover source separated HHW. If that is the case, several regulations will apply to HHW, with some clarifying positive effects and some unfortunate negative consequences. These consequences should be analysed further, but examples are the requirement on households to provide safety data sheets and waste manifests mentioned in chapter 3.2.2.

There could also be clarifications on the characteristics of all hazardous waste. The current definition of hazardous waste as having "physical, chemical or toxicological characteristics" is vague. Characterization by SANS 10234 is much more detailed, but does today not apply to "Expired, spoilt or unusable hazardous products". It should also be noted that neither NEM:WA nor SANS 10234 mentions "infectious" as a hazardous property. Including this in the definition would provide a stronger logic to regard health care risk waste

(HCRW) as hazardous. When generated in households, HCRW should be collected separate from domestic waste and guidelines to municipalities or health care providers should be developed.

Finally, Absorbent Hygiene Products (AHP) such as diapers should not be regarded as HHW, although potentially infectious. Disregarding how unpleasant these can be to handle as waste, AHP is not inherently hazardous as other types of HHW is. Practically, AHP needs rapid collection close to households whereas HHW can usually be stored safely for quite some time. To classify AHP as HHW would impose unnecessary regulations regarding transportation and storage.

4.1.2 Initiating source separation

National norms and standards, as well as municipal by-laws, adequately supports source separation of HHW and collection by the municipality or a municipal service provider.

The fractions of HHW that is source separated should be aligned with the ban on landfilling lined out in section 5 in National Norms and Standards for the Disposal of Waste to Landfill, 2013. This will make handling more efficient as less sorting will be needed in later stages to make sure only the right waste streams are sent to landfill or treatment.

This is already supported in National domestic waste collection standards 2011, where it is called non-mainstream recyclables. The department of environmental affairs draft guidelines on separation of waste at source 2018 adds emphasis to this by stating that non-mainstream recyclables should be routed to collection by the municipality or service providers.

The model by-law of 2011 by the department of environmental affairs states the obligation to “contract with an accredited service provider to collect and dispose of...” hazardous and health care risk waste. By paying applicable municipal tariffs, the household generating waste should be approved of having such a contract.

Hence, with well-designed municipal by-laws in place, municipalities can initiate source separation schemes. Fulfilling the landfill ban on some products is an incentive to do so. Avoid situations that creates unnecessary administration

It is recommended that, and required by NEM:WA, municipalities develop Integrated waste management plans (IWMP). Having a plan is a great tool for developing municipal services. This is however lacking in many municipalities today and a reason may be to detailed requirements on its contents in national guidelines. It may be feasible with less elaborate IWMP:s, while still meeting the requirements of NEM:WA, with more emphasis on prioritizing what to improve. Less administrative resources would be needed for monitoring and the focus could be more on implementation.

The fact that IWMP:s are developed at several government levels decreases flexibility in implementation and may hinder local improvements. As the local municipalities and metropolitan areas are responsible for collection of the waste, it would be natural that their plans have precedence over other plans – as long as the principles and guidance relevant from the higher levels are considered in a proper way. It is recommended that provinces and district municipalities IWMP:s only exist for the efficient monitoring and complement to local municipalities IWMP:s.

Reporting activities could also be streamlined to ensure a more efficient collection of the data. It is a recommendation that South African Waste Information System (SAWIS) national repository for waste information is the model for municipal reporting. NWMS suggests that also provincial Waste Information Systems are developed. But that is most likely an extra administrative burden, instead of letting all municipalities align reporting to a national system.

4.1.3 Acknowledge that there is an underfinancing of municipal waste management

Municipalities should keep separate financial statements, including a balance sheet of the services provided. This is clearly stated in NEM:WA but should be enforced. There is a risk of underfinancing of waste management if it shares budget with other municipal services which are not related, such as park management or sanitation. Revealing the true costs of waste management as well as its correlation to collected tariffs, should make underfinancing clear and at the same time ensure that sufficient financing could be earmarked in municipal budgets.

Even though this may not lead to full cost accounting, it will acknowledge that there is an underfinancing. When setting the budget for municipal waste management, it should be clear how much is allocated to the collection of HHW in relation to other waste fractions. Additional costs and funding in public-private partnerships and as part of EPR schemes needs to be allocated to their intended use.

Separate collection of HHW should be subsidized to provide incentives for households to participate. Ideally, collection should be free of charge for the households. For example, if a household leaves HHW at a collection point this would not cost them anything. This would not necessarily include other hazardous waste generated in other sectors. The “free of charge” approach in HHW collection somewhat contradicts the polluters pay principle but is a better option than hazardous products being mixed into the municipal waste.

As municipalities are obliged to keeping separate financial statements for waste management, it can be clearly defined what the cost of HHW management is. This cost could be covered by tariffs for regular collection of domestic waste or government funding. This recommendation is of course of a larger scope than just HHW, affecting all municipal waste management. Enforcing separate financial statements should be coordinated with development of the whole municipal waste management.

4.1.4 Occupational health and safety

Collection and handling of HHW can be a work that will expose the worker for special risks in terms of exposure to chemicals and other compounds. The workers need to have proper training and safety equipment. The legal framework defines that the work should be carried out by trained people with proper equipment. It is important to ensure that these rules are complied with. To transfer informal sector to formalized activities will provide a basis to contact, follow-up and train these cadres of existing waste management workers. Waste picking of hazardous waste is relatively limited today, but with new actions on sorting it may become more common that these fractions need to be handled separately.

As collection days or drop-off points are usually organized by the private sector as a community goodwill, accreditation of these companies will be even more important. With increased volumes of HHW collected, ensuring compliance with laws and regulations as well as being financially sustainable will have to receive increasing attention.

Informal waste pickers should not get involved in handling separated HHW. This is not in accordance with existing laws and regulations. Involving waste pickers in handling these waste streams will have to include *formalizing their role*, and typically providing training and some sort of formalization of role in the waste management chain.

4.1.5 Responsibilities of local and district municipalities

District municipalities should have a clearer mandate to coordinate waste management of other fractions than municipal waste, to enable a better separation at source. Today, their legal obligation is “Solid waste disposal sites” and bulk “transfer”. It is recommended that guidelines are developed that incentivize district municipalities to develop collection systems and temporary storage of hazardous household waste fractions not covered by EPR-schemes.

Coordination of collection systems between municipalities and PROs is also necessary, not just between PROs and national government entities. This will assure better understanding of the systems in local communities and rational logistics. This should be facilitated by district municipalities, as they today are responsible for bulk collection points. District municipalities should of course procure private sector actors or engage in public-private partnerships when feasible. It is also a recommendation of this project that the South African Local Government Association (SALGA) develops standard agreements with PRO:s, that municipalities could adapt.

In summary, there is a policy opportunity to create regional coordination of HHW management, primarily by district municipalities. This should enable economies of scale and harmonized treatment methods, lowering the threshold for local municipalities to adopt source separation. Coordination by public-public partnerships of local municipalities themselves is also a possibility but will probably be less feasible in most situation.

To assure this coordination and implementation takes place, it is highly recommended to assign Waste Management Officers (WMO) and Environmental Management Inspectors (EMI) enforcing the waste act to the three spheres of government. With such roles appointed; long term cooperation is made easier, due to personal relationships across municipal borders.

5. References

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