



Farm Business Management

Handout 20

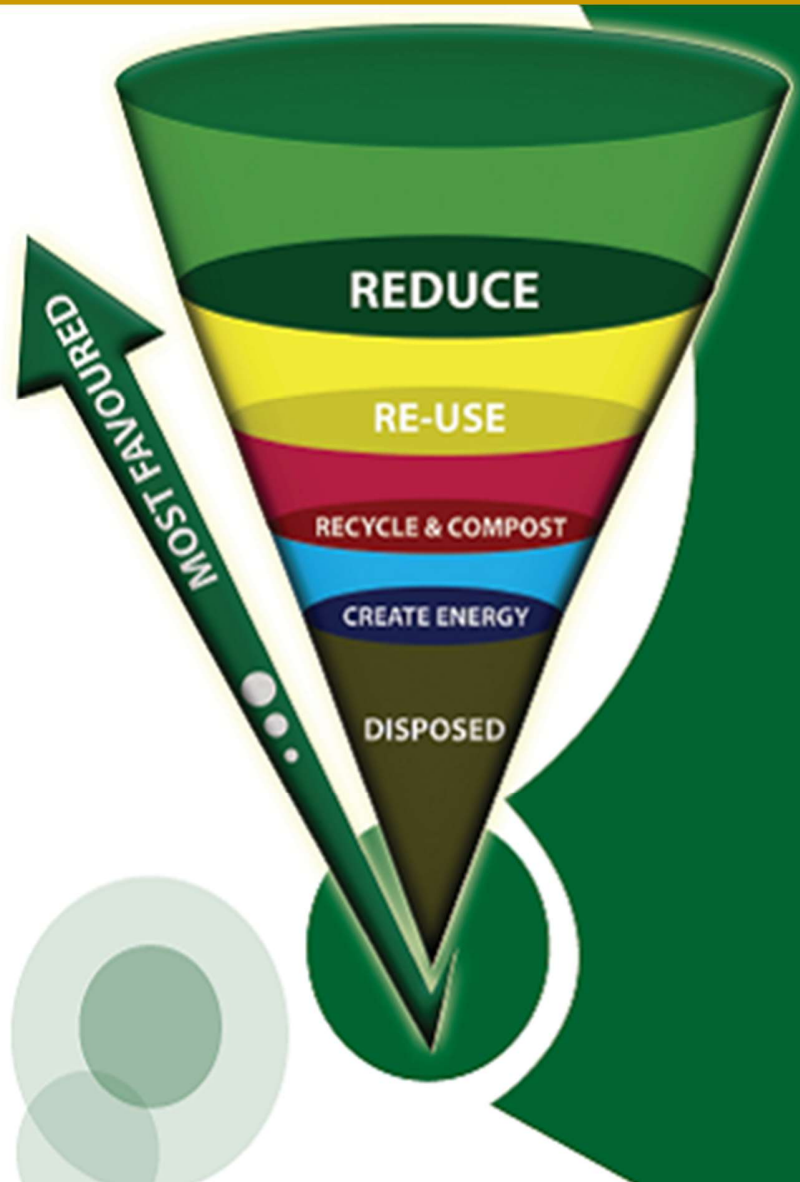
Waste Management Guidelines



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

GUIDELINES ON SEPARATION OF WASTE AT SOURCE



Draft Guidelines on Separation of Waste at Source is published for comment.

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DRAFT

PREAMBLE

WHEREAS South Africa promulgated its first waste management act (Waste Act, 2008) in 2008
AND WHEREAS the 2012 Department of Environmental Affairs (DEA) baseline study indicates that only 10% of waste in South Africa is diverted from the landfill

AND WHEREAS goal 4 of the National Waste Management Strategy 2011 underlines the importance of people being aware of the impact of waste on their health, well-being and the environment

AND WHEREAS municipalities are required to promote the waste hierarchy approach as outlined in the National Waste Management Strategy

AND WHEREAS South African society is branded as a throwaway society

AND

NOTING that every step in the direction of reducing waste that goes to landfill is worth supporting and expanding

AND THEREFORE

The Department of Environmental Affairs wishes to provide the Guideline on Separation of waste at source for use by all municipalities after adapting and adopting it, thus contributing in whatever way to improve the country's waste diversion from landfill, changing the 'throwaway' branding through establishing systems to facilitate implementation.

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1. DEFINITIONS

Department - refers to Department of Environmental Affairs (DEA)

Builders' rubble – refers to 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. This waste can be separated and re-used as fill material during construction

Bulky waste – refers to large items of solid waste, which because of their bulkiness / size, require special collection and management. Examples include furniture and large appliances from residential sources.

Domestic Waste - means waste, excluding hazardous waste, which emanates from premises that are wholly or mainly for residential, educational, health care, sport or recreation purposes as defined in the National Environmental Management: Waste Act (Act No. 59 of 2008).

Drop off facility / garden site – refers to waste management facilities that have been developed which are accessible to communities for the purpose of receiving recyclable waste or garden waste

Materials Recovery Facility - is a specialized plant that receives, separates and prepares recyclable materials for marketing to end-user manufacturers. The aim is to divert as much waste as possible from landfill sites and to facilitate economically viable recycling.

Clean MRF – accepts materials that have already been separated at the source from either residential or commercial sources. The source-separated recyclables are delivered in a mixed container stream. The material is sorted to specifications, then baled, shredded, crushed, compacted, or otherwise prepared for shipment to market.

Dirty MRF - This MRF accepts a mixed solid waste stream and then proceeds to separate out designated recyclable materials through a combination of manual and mechanical sorting then baled, shredded, crushed, compacted, or otherwise prepared for shipment to market.

Recyclable waste – refers to waste that can be kept for an extended period without decomposing such as paper, plastics, metal and glass. Examples of dry recyclables include:

Paper – newspapers, magazines, books, printer paper, cardboard, cartons

Plastics – carry bags, beverage bottles, milk bottles, plastic toys, plastic containers

Metal – beverage cans, food cans, metal dishes, metal pots

Glass – glass bottles, glass jars, glass cups, glass containers

E-waste – this is also referred to as electronic waste and includes batteries, computers and computer parts, electric wires, electrical equipment and appliances, remotes, watches, cellphones, bulbs, tube lights, and compact fluorescent lamps. These pollutants are classified as hazardous waste

Garden waste – refers to organic biodegradable waste material generated from the likes of a typical garden or park. It includes both nitrogen-rich and carbon-rich organic material such as grass; leaves; plants; cuttings & trimmings; branches; tree trunks and stumps.

Municipality" means a municipality as defined by the Municipal Systems Act (Act No. 32 of 2000).

Separation at Source – refers to the practice of setting aside post-consumer and household waste materials at the point of generation at the household level so as to prevent them from entering the waste stream that is destined for landfilling.

"Temporary waste storage area" means a storage area that is used to store general waste for a maximum of 90 days

Wet waste / food waste – these consist of kitchen waste such as fruit and vegetable peels and left-overs, tea leaves, coffee grounds, eggshells, bones, fish scales, as well as cooked food (both vegetables and non-vegetables).

ACRONYMS

DEA:	Department of Environmental Affairs
NEMA:	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: WA:	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
IWMP	Integrated Waste Management Plan
MFR	Material Recovery Facility
NGO	Non-Governmental Organisation
S@S	Separation of waste at source
INDWMP	Industry Waste Management Plan

2. INTRODUCTION AND PURPOSE OF THIS GUIDELINE

The National Environmental Management Act, 2008 as amended (NEMWA) places a duty on State to place uniform measures that seeks to reduce the amount of waste that is generated and, where waste is generated to ensure that waste is re-used, and recovered in an environmentally sound manner. It is estimated that 20.7Mt (of 54.2Mt generated) of general waste was recycled in 2017, which results in overall recycling rate of 38.3% and overall landfill or treated rate of 61,7% which proves that we are a throw away community.

This is one of a series of guidelines to assist municipalities in the implementation of separation of waste at source. This document focuses on separation at source as a component of an integrated waste management system of solid waste.

This guideline has thus been developed to guide municipalities to the said NEMWA principles and guide them to minimize waste away from the landfill sites through:

- (a) Provision of guidance for an approach relating to separation of waste at source to different levels of municipalities
- (b) Ensure best environmental practice in the separation of waste at source
- (c) To educate and raise awareness within municipalities regarding proper handling of domestic waste for separation at source as well as for the need to minimize waste and promote recycling.

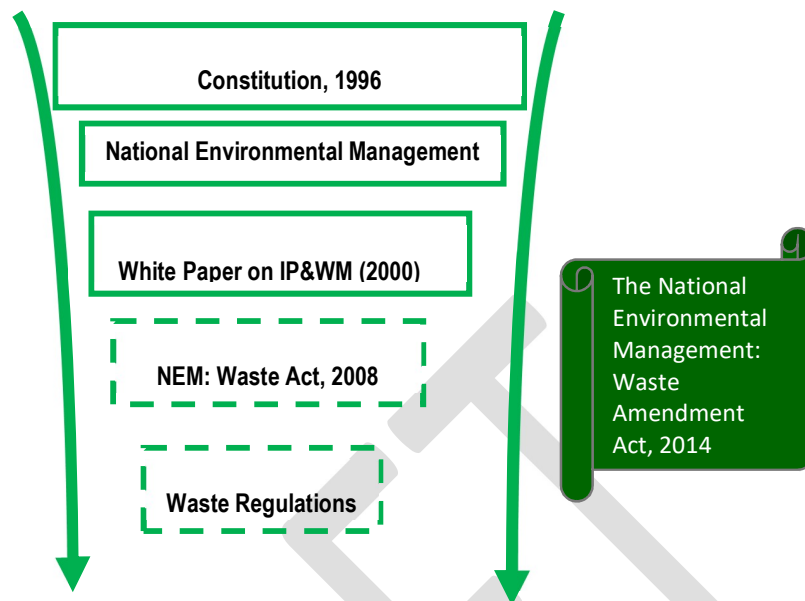
3. LEGISLATION FRAMEWORK

The Constitution of South Africa, 1996, provides the foundation for environmental regulation and policy in South Africa. The Bill of Rights contained therein (section 24 of Chapter 2), clearly sets out the right to environmental protection and to live in an environment that is not harmful to health or well-being.

This can only be achieved through a reasonable legislative framework and other measures that prevent pollution and ecological degradation, promote conservation, and secure ecologically sustainable development and the sustainable use of natural resources. This vital right underpins environmental policy and law, in particular the framework environmental legislation established by the National Environmental Management Act, 1998 (Act No. 107 of 1998) (as amended) (NEMA).

NEMA introduced a number of additional guiding principles into South African environmental legislation, including the life-cycle approach to waste management, producer responsibility, the precautionary principle and the polluter pays principle. NEMA also places a duty of care on any persons who may cause significant pollution or degradation of the environment, requiring them to institute measures to either prevent pollution from occurring, or to minimize and rectify the pollution or degradation where it cannot reasonably be avoided

NEMWA -Waste Act (2008) calls for increased diversion of waste away from landfill towards re-use, recycling and recovery. The aim is to reduce pressure on landfill airspace and ensure that valuable resources are not lost to the economy; while creating jobs & business opportunities especially SMMEs.



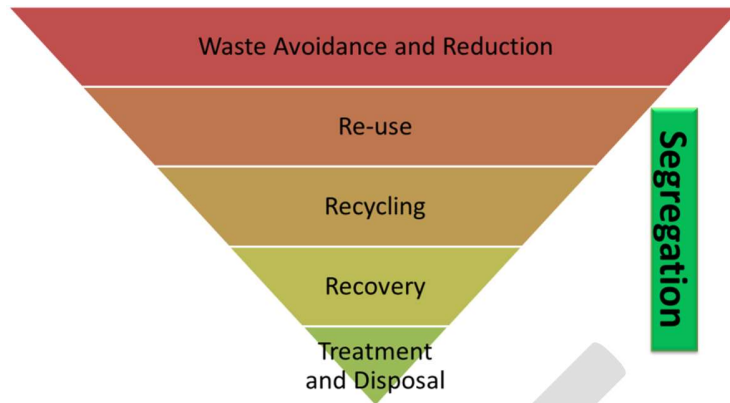
4. APPLICATION

These guidelines are aligned to the National Domestic Waste Collection Standards Section 4.1 which stipulates how separation at source should be conducted in municipalities.

These guidelines are also aligned to the National Policy for Provision of Basic Refuse Removal Services to Indigent Households which through the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (as amended) which compels municipalities to put in place Integrated Waste Management Plans (IWMPs) and provide receptacles for households.

5. PLANNING FOR WASTE SEPARATION AT SOURCE

One of the most important areas for society to act sustainably is in how it deals with its waste. The disposal of waste – even under managed circumstances can have significant impacts on the natural environment and people’s health. Therefore it is critical that a municipal Integrated Waste Management Plan (IWMP) include all aspects of waste management hierarchy within the municipality as it creates a basis to assist towards planning of separation at source implementation.



The separation at source must be implemented in line with the municipality's IWMP and Waste by-laws in order to mitigate against increasing waste generation, landfill airspace depletion, environmental degradation and pollution as a result of illegal dumping, littering etc.

The Waste Management Officer (WMO) and team can conduct a waste disposal characterization exercise as part of data collection in order to understand the type and quantities of waste generated in their municipality to use for solid waste planning towards implementing separation of waste at source.

This is a key tool in the development of a separation at source and waste minimization strategy for any municipality to know the types and amounts of waste that are being generated and their current waste handling systems. Once this information is obtained the options for separation at source and minimizing waste can be considered whereby:

- Households and businesses will be encouraged to separate recyclables from their general waste
- Municipality will then provide or out-sourcing a relevant collection system that keeps recyclables separated from general waste.
- Recyclables would then be taken to a sorting facility/Materials Recovery Facility (MRF)

It is recognized that service to be rendered towards separation at source may differ between areas depending on the practicality and cost efficiency of delivering the service. However, the standards for separation of waste be equally relevant to levels of domestic waste collection services by the municipality.

The municipality must provide an enabling environment for households to recycle domestic waste. An enabling environment could include kerbside collection and/or drop-off centres within easy reach from the households. Where the municipality does not provide for kerbside collection of the recyclable component of source separated waste, it must co-operate with the recycling sector to ensure the provision of facilities where recyclables can be dropped-off for collection by service providers.

Equitable waste collection services should be provided to all households within the jurisdiction of the municipality. Various options exist, each with own costs and benefits and significant risk associated with adopting the incorrect infrastructure/systems. Costs and benefits of each system vary between (and even within) municipalities due to differences in collection distances, income levels, waste characteristics, etc.

Therefore municipalities need decision support in assessing costs and benefits of each option, and therefore to identify an appropriate system for each area. Intended as a decision support tool for use by municipalities to aid in:

- Making business case to council to implement separation at source
- Identifying appropriate separation at source systems for different suburbs
- Evaluating tenders (if collection will be out-sourced)
- Inform decisions about apportionment of subsidies from government & industry
- Compares costs and benefits of four broad options for implementing a separation at source programme for a specified set of suburbs within a municipality

Separation at source must be encouraged and supported in line with the relevant industry waste management plans. In addition, all domestic waste must be sorted at source (ie. households, high density areas, etc) in all municipalities; community involvement in recycling must be encouraged.

Different options under planning are as follows but not limited to:

The Municipality can explore different models in implementing separation at source as it is he findings clear that this cannot be a 'one size does not fit all'. Therefore decisions on waste separation at source and the choice of interventions to encourage more households to participate in the programme will have to be informed by the specific community. There are different models which can be implement which are not limited to such as:

“Post Separation” No separation at source; post-separation of recyclables at dirty MRF (; residual waste transported to landfill



“Truck & Trailer” S@S is done by the households/ industry; kerbside collection of recyclables is collected in trailer hitched to back of normal waste collection vehicle. Recyclables will be sorted and baled at clean MRF; residual waste transported to landfill.



“Separate vehicle”: S@S is done by households /industry; kerbside collection in separate vehicles (by municipality, contractor/private sector or cooperative); The recyclables will be sorted and baled at clean MRF; residual waste transported to landfill



“Rich Bag”: Households place recyclables in separate bag at top of bin; The recyclables will be collected by informal sector/ waste pickers & sold to buy-back centres; or if not collected is post-separated at MRF; the residual waste transported will be to landfill

The source-separated waste is collected and further sorted by cooperatives who sell the sorted recyclable materials to the recyclers. The number of jobs created is linked to the amount of source separated waste that is collected and recycled. It is therefore important to attain maximum participation rates for the programme.



In future the municipality can explore and expanded the s@s services to include further options; e.g. procurement of new types of purpose built “split-compartment” vehicles.



6. WASTE HANDLING AND SEPARATION BY RESIDENTS

A critical element in the success of waste separation at source is public awareness and participation, in addition to regulations or policy. The public must be made aware and sensitised to the health and environmental consequences of improper waste handling and the lack of separation at source.

It is critical that the municipality engage with participating communities through crating effective awareness and education campaigns relating to good waste separation at source practices;

*An example of waste **reduction at source** is to avoid unnecessary packaging that becomes waste. This can be done by buying items in bulk, buying loose items rather than pre-packed items and choosing items with the least packaging. If you have a business that packages products, you should consider how to minimize the packaging requirements. This is not only the responsible approach but will also save money.*



Responsibility by all stakeholders towards s@s

SECTOR	RESPONSIBILITY
Business/Commercial	<ul style="list-style-type: none"> • Develop and commit to a sustainable Integrated Waste Management Policy and Plan for the company • Set a measurable target for waste reduction within the organisation over a specified period • Develop and implement waste minimisation, recycling and composting initiatives as appropriate • Ensure that there are suitable storage and collection facilities in place for general waste, recyclable and special wastes. • Put formal contracts in place for the removal of general waste with the informal sector within the municipality. • Implement a waste management education programme for all staff.
Schools	<ul style="list-style-type: none"> • Form an eco-club to monitor the types and quantities of waste produced by the school. • Implement waste minimisation activities and school recycling projects where appropriate. • Find out where recovered materials can be sold. • Have facilities in place for the storage and collection of general waste and recyclables. • Educate learners and educators on sustainable waste management
Households	<ul style="list-style-type: none"> • Monitor the types and quantities of waste produced in their household. • Make a place to store general waste and recyclables until it is collected by the municipality. • Meet requirements of the local authority for waste storage and put waste out for collection on time for collection.
Individuals	<ul style="list-style-type: none"> • Accept responsibility for handling waste consciously so that it has a minimal negative impact on the environment and other people.
Municipality	<ul style="list-style-type: none"> • Explore relevant implementation methods in terms of legislative jurisdiction, Local government: municipal systems act 32 of 2000, for example in areas such as incentives and tariffs for residents.

7. WASTE STORAGE AT THE SOURCE

Past experience of waste being stored in wheelie bins has proven to minimize this risk. Especially since waste rarely stays for longer than 7 days at any residence

High density residential developments specially those for the low income market. Some of the applications that are submitted have over a 1000 units in one complex with very limited space or though on ie internal arrangements or space for waste storage ie per floor and per complex

Municipality should provide minimum requirements in the context of duty of care stipulations for low and high rise buildings storing separated waste in relatively high volumes

8. WASTE COLLECTION

Collection of waste will be determined by the method that the municipality chooses to implement which will influence the collection schedule

Mainstream recyclables (paper, cardboard, newspapers, magazines, plastic, glass, metal cans and tins) must therefore be either collected at households or from communal collection points by the municipality or service providers.

Recyclable waste must be removed at least once every two weeks and removal must be coordinated with industry (the users of the recyclables) to minimise costs and the clogging of space at transfer stations and depots.

Waste deposited at communal collection points must be collected within 24 hours of receptacles being reported as full or at regular intervals so as not to attract vermin and increase health risks.

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 the municipality/ service providers in the relevant recycling sector.

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 municipalities;
- Regionalisation of collection of recyclables to ensure economies of scale especially in remote areas; and

- Collaboration with recycling companies to avoid potential bottlenecks-This should be done in line with the implementation of the Packaging IWMP

Above all the municipality should set minimum standards for waste separation at households to ensure the protection of the health of residents and the living environments.

Communal collection points in high density areas

Communal collection points must be clearly demarcated areas with appropriate receptacles where high density household waste can be deposited for collection by the service provider/municipality.

The municipality should advise the Body corporate / Home owner association to ensure that communal collection points are kept tidy at all times.

The collection points must:

- a. Be easily accessible for waste collection vehicles; and
- b. Encourage waste separation at source.

The receptacles for s@s must be:

- a. Covered so as to prevent windblown litter; and
- b. User friendly to allow even children and disabled persons to safely deposit waste into the receptacles.



9. TRANSFER STATIONS AND MATERIAL RECOVERY FACILITIES

The municipality should ensure that no waste must be stored for a period exceeding 90 (ninety) days from the time of arrival.

The temporary waste storage area must be hard surfaced to a suitable depth and must be reinforced to support heavy movement of machinery and vehicles.

Turdy, leak proof containers must be used for the temporary storage of general waste material.

Containers or vessels used for the transportation of waste material on/off site must be sealed or purposely designed to prevent spillages during transportation.

Vector control devices must be installed on site at all storage and processing areas by a licensed service provider.

In other cities, the source-separated waste is collected and further sorted by cooperatives who sell the sorted recyclable materials to the recyclers. The number of jobs created is linked to the amount of source separated waste that is collected and recycled. It is therefore important to attain maximum participation rates for the programme.

10. DROP-OFF CENTRES FOR RECYCLABLES

Drop-off centres for recyclables not collected at the households must be easily accessible to the public. Such centres must also be conducive to reinforcing recycling behaviour - it must be clean and user friendly. Drive-through options should be considered and implemented where feasible. Collection from drop-off centres must be at regular intervals so as not to cause a nuisance.



11. TRANSPORT

The municipality should ensure that their vehicles as well as those of its sub-contractors used for the transportation of waste material are compliant with the National Road Traffic Act, Act No. 93 of 1996 and the National Road Traffic Regulations, 2000



Appropriate personal protective equipment (PPE) must be used by employees at all times during the operational processes. Employees must also be educated about the importance of wearing PPE at all times

12. COMMUNITY INCENTIVES

The municipality can also explore the swop shop options to divert waste away from their landfill sites. This is a social behaviour change strategy that can be done as an Incentive-based, awareness should be done to the household to separate their waste and bring it to the swop shop for exchange of relevant goods. The municipality can implement this through a private company / community based organisations, etc

The idea behind this type of a project is to tap into a new market of recyclable material in order to decrease the amount of packaging waste entering landfills. This project effectively spearhead a fundamental shift in how South Africans take part in recycling by incentivising a change in behaviour on a social and environmental level.

Relevant media and communications/awareness tools should be distributed to the community before the project can commence with clear indication of what is expected from the community as well as what the project will bring about. Once the project has been implemented, a recycle truck drives through a community and parks at a designated site on a particular day at convenient times and locations to collect bags of separated recyclables such as plastic, paper, metal cans and glass, the materials are then weighed and loaded into truck/bulk bags. In exchange of the recyclables the community receives voucher/card with the amount of the recyclables and is swapped for school/home goods which can be done at the point of exchange or through a local supermarket. The municipality/service provider can do an agreement with the supermarket if that is their preferred method of exchange. A very large community may be split up into several zones with multiple collection sites if the community participation is large.

A key objective is to introduce the youth to recycling at a young age so that they grow up with the practice as second nature. Through a drive to encourage a change in behaviour at school level, swop shops can be used in primary and high schools within each community as a key platform to market the project to adults through their children. By getting children excited and motivated to recycle, they not only learn the practice from a young age but can also be key influencers in their parents' decision to get involved.

13. GENERAL DUTY OF CARE

The New Waste Act has forced manufacturers of packing materials to come forward with an industry plan which will:

- create markets for recycled materials
- create revenue streams to financially support these initiatives and create awareness

This can be achieved through

- Promoting the establishment of waste buy-back centres, garden waste drop-off centres, separation of different waste streams, such as glass, paper/cardboard, cans, scrap metal, plastics and garden waste and setting minimum standards for the same;
- Enforcing (with the *proviso* for exemptions) the need for establishing and licensing material recovery and transfer stations for certain local governments (criteria needs to be defined for qualifying municipalities where material recovery and transfer stations will sustainably contribute to the integrated waste management hierarchy objectives of NEMWA);

14. MANAGEMENT OF EMERGENCY SITUATIONS

Response measures must be put in place to deal with any eventuality of fires resulting from the working surfaces or at any other area within the facility. Emergency incidents must be dealt with in accordance with section 30 of NEMA.

15. DISPOSAL

To improve the waste information national database to specifically provide for audits to ensure balancing the records of waste separation at source and concomitant reuse recycling and recovery of such waste with the statistics of reduced waste volumes diverted away from landfills.

16. EDUCATION AND AWARENESS

For an effective implementation of separation at source- one needs clean, well-sorted material. The higher the quality of the sorted material the more likely the chance that recycled material will replace virgin material. Education and awareness for industry, commerce and the public are critical in achieving this objective and at the same time promote environmental and public health protection.

- Establish awareness in support of waste separation at source to prevent wastage of resources through recycling reuse and recovery of usable materials;

- Promote awareness in communities commercial and nonhazardous industrial facilities as the key generators of waste and the pivotal role in sustainable environmental management clean environments and sustainable livelihoods; and
- Inform communities and commercial and industrial waste generators in the use of basic and environmental friendly waste separation and processing technologies

17. FUNDING

The IndWPM for packaging should fund initiatives around separation at source in order to incentivize and reward distinguishing performance in respect of waste separation at source, through this the circular economy will be highly unlocked and explored.

Establishing incentives for distinguishing performance in proven waste separation at source can also be explored in the municipalities.

Reward programmes for establishing and promoting green economies within the waste separation at source eases the strain on South Africa's natural resources, and contributes to the Green Economy by introducing secondary resource back into the economy, while creating jobs and business opportunities in the waste sector ultimately will result in waste diversion from landfills model.

18. OFFENCES AND PENALTIES, MISCELLANEOUS

1. Offences and penalties

As per the legalistic conventions.

2. Miscellaneous

As per the legalistic conventions

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