

Waste reclamation – a framework for the roles and responsibilities of the stakeholders involved

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ABSTRACT

Informal reclamation activities on landfills around South Africa highlight the value of disposed materials. Diverting recyclable waste away from landfills can be done by sorting mixed waste at landfills or separation at source. Low volumes of recyclables and the distance to the markets hamper the success of recycling initiatives by informal reclaimers, especially in smaller and remote communities.

The value chain of waste reclamation starts with the generation of waste at different sources and ends with the recycling of the waste materials. During the different activities along the value chain, different stakeholders can be involved, which will lead to different impacts such as job creation, skills development, environmental awareness and SME development. These impacts can be to the benefit of municipalities, communities, individuals and the natural environment.

This paper will focus on the different stakeholders in the value chain of waste reclamation involving communities and the impacts of their activities.

1. INTRODUCTION

The management of domestic waste in South Africa currently faces many real challenges. In terms of the South African Constitution (RSA 1996: Schedule 5 part B), further implemented in the Waste Act (RSA 2008: clauses 10-11) and the Municipal Structures Act (RSA 1998: clause 84), waste management service delivery is a local government function. The current status of waste management in South Africa is, therefore, an indication of how well municipalities succeed in performing this function and how stakeholders are involved in the process of waste management.

The waste management system comprises many variable and interrelated components and it is, therefore, important to understand the waste cycle or waste value chain, and that when one component of the system changes, it invariably affects other parts of the system. In South Africa the majority of waste ends up in landfills as mixed waste. However, when all components within the waste value chain work towards one goal, that is minimisation of waste to landfill, the outcome will be in line with the National Waste Management Strategy (NWMS) (RSA 2012).

Implementing the NWMS and achieving the objects of the Waste Act will require co-ordinated action by many players, including households, businesses, community organisations, NGOs, parastatals and the three spheres of government.

Growing population numbers result in increased waste generation, which makes it even more important to co-ordinate efforts to mitigate the impacts of increased volumes of waste. These impacts include:

- A growing number of illegal dumping sites
- Large number of kerb-side dumps in poor and informal housing areas
- Non-compliance with legislation with regard to the disposal of waste, for example health-care waste

The NWMS states that: “*Collection and sorting of general recyclable waste materials, supported by a recycling infrastructure. General recyclable waste collection systems will be coupled to existing waste collection services and disposal sites will be transformed into waste management sites. Material recovery facilities and buy-back centres will be established in different municipalities, and space will be provided to sort waste into re-useable and recyclable waste.*” (RSA 2012: Goal 1).

Reclamation of waste material is, therefore, one of the building blocks for implementing the NWMS in order to minimise the flow of waste to landfills.

2. VALUE CHAIN OF WASTE RECLAMATION

The value chain of waste reclamation comprises many components and stakeholders. To understand this value chain we have to look at the waste cycle and determine where each stakeholder fits in and how these stakeholders are involved.

The value chain of waste reclamation starts with the generation of waste at different sources and ends with the recycling of the waste materials (Figure 1). During the different activities along the value chain, different stakeholders can be involved, which will lead to different impacts such as job creation, skills development, environmental awareness and SME development. These impacts can be to the benefit of municipalities, communities, individuals and the natural environment.

3. STAKEHOLDERS IN THE RECLAMATION VALUE CHAIN

A wide range of stakeholders are involved in the waste reclamation value chain. This can include the pickers on the landfills, the ‘trolley brigades’ in the residential areas, transporters, community leaders and recyclers to name but a few. These stakeholders all have different roles and responsibilities in the value chain and working together towards a common goal, can make a huge impact in the communities in which they operate.

3.1 Sources of waste generation and stakeholder involvement

3.1.1 Municipal residential areas

Residents consume vast amounts of products resulting in huge volumes of waste. Waste collection services are usually available in residential areas and waste is collected and transported to landfills.

Residents can get involved by sorting their waste at home and separate the recyclables from the non-recyclables. Recyclables can be taken to drop-off facilities, directly to a reclamation facility or left for informal or formalised reclaimers to collect.

Such involvement by residents can create huge educational opportunities for parents and children alike as it will increase awareness of environmental issues caused by waste and the benefits of recycling waste.

If the recycling efforts by residents are successful in significantly reducing the amount of waste that is disposed of at landfills, it may even result in lowering of waste collection fees charged by municipalities.

3.1.2 Rural Communities

Communities living in rural areas do unfortunately not always have access to waste collection services and are, therefore, sometimes dumping their waste illegally. These communities often live long distances from the municipal landfill and cannot afford to transport their waste to the municipal landfill.

Communities can also get involved by sorting their waste at home and separating recyclables from non-recyclables. This is also an opportunity for communities to establish either co-operatives or small businesses

to collect recyclable waste material in the community to sell to the reclamation facility. By accumulating bigger volumes, transporting recyclables to buy-back centres or reclamation facilities becomes financially viable.

The benefits for the communities are a cleaner and more hygienic living environment and getting an income from selling the waste material to the reclamation facility.

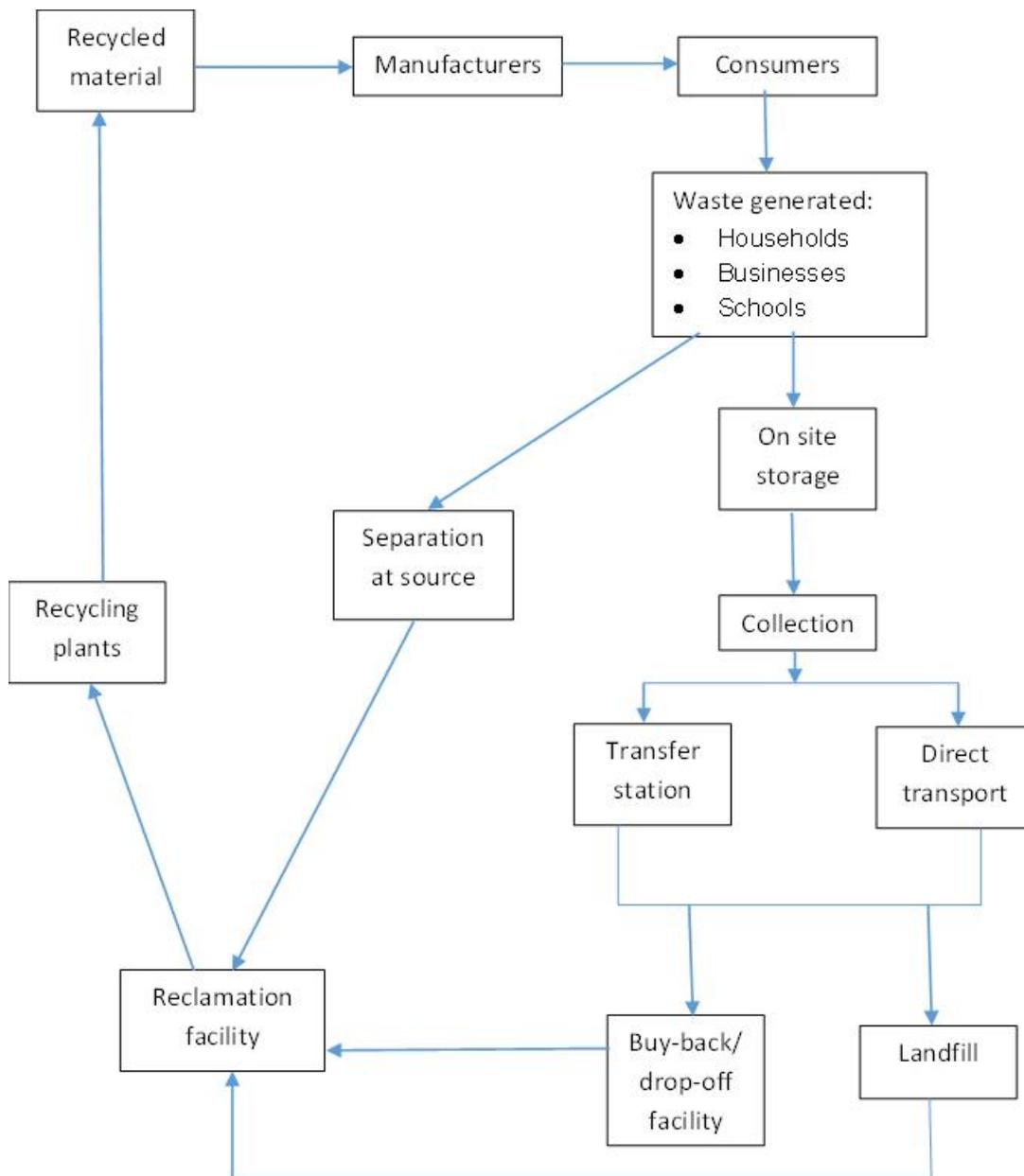


Figure 1. Value chain of waste reclamation

3.1.3 Businesses

Businesses, including shopping malls, can generate huge volumes of waste resulting in increasing costs for collection and disposal of the waste to landfills.

Businesses can get involved by:

- Availing a safe and dry area where recyclables can be collected and stored until removal
- Depositing their own recyclables in the dedicated containers
- Encouraging customers to deposit recyclables in the dedicated containers

Benefits for businesses include:

- Increased awareness about the benefits of recycling among business owners, their employees and customers
- A structured programme of removal of recyclable waste from the business premises
- Reduced waste removal fees
- Reputational benefits

3.1.4 Schools

Schools are one of the sources of waste that can get involved in a more structured way. Learners and teachers can collect recyclables at home and take it to school for temporary storage. Recyclable waste that is generated at the school itself can also be included. The school should provide an area for the safe and dry storage of these recyclables until removal. These recyclables can then be sold to the reclamation facility and can also be used to enter competitions, such as the Collect-a-Can School Competition.

Benefits for schools include:

- Increased awareness about the negative impacts of waste and the benefits of recycling among learners, teachers and their families
- A structured programme of removal of recyclable waste from the school premises
- Income from the sale of recyclables
- Reputational benefits

3.2 Handlers of recyclable waste

Within the value chain of recyclable waste other stakeholders play a role in managing waste in a sound and effective way. These stakeholders include informal and organised reclaimers, transporters, landfill operators and recycling companies.

3.2.1 Informal reclaimers

Tens of thousands of informal reclaimers make a living off recyclable landfill waste. Many others walk the streets of residential areas in the early hours of waste collection days to scour waste bins for recyclables. These people do make a living but not always under the easiest or safest circumstances, especially those working at landfills. They usually work without personal protective equipment (PPE) in dangerous (moving vehicles) and unhygienic (contact with all sorts of waste and burning of waste) conditions. In addition, because they work individually these people usually do not have the power to negotiate prices for the recyclables they collect and the offtake of their products is not guaranteed and they are at the mercy of recycling companies.

3.2.2 Organised reclaimers

Reclaimers can organise themselves in cooperatives or be employed by reclamation companies that are responsible for a structured reclamation operation at landfills and in residential areas. These organisations have the benefit of scale which makes their operations more economically viable. These organisations also have proper equipment onsite to process recyclable waste before transport to recycling companies.

Benefits of reclaimers that are part of organised reclamation organisations include:

- They are issued with PPE
- A safe working environment will be implemented
- First aid assistance is available
- They will be registered with the Unemployment Insurance Fund (UIF) and the Compensation Commissioner
- Guaranteed offtake of their recyclables
- Regular payment
- Reclaimers will be trained on
 - handling and sorting of waste material
 - relevant equipment
 - health and safety, including first aid

The recipients of these benefits are not only the reclaimers but in the end also their families and communities.

3.2.3 Transporters of recyclables

The need for transport of recyclables from the areas where they originate to storage and processing facilities offers an opportunity for entrepreneurs to position themselves to offer this service. Deploying mobile compactors as close as possible to the areas where waste is collected ensures that more recyclable material and less air is transported.

Beneficiaries of these opportunities are the transport entrepreneurs, their families and communities.

3.2.4 Buy-back or drop off facilities

These facilities often play a crucial role in facilitating the flow of recyclables from communities and individuals away from landfills and on their way to recycling companies. These facilities have appropriate equipment available to process recyclable waste. People dropping off waste are usually paid immediately which serves as a huge incentive for recyclable waste collectors.

3.2.5 Recycling companies

Recycling facilities are the final step in receiving recyclable waste and converting this material in products that can be used for future production. These facilities are more strategically located. These companies are in direct contact with market fluctuations regarding the need for and prices paid for recyclable material. They can assist reclamation companies with making compacting equipment available in order to secure sufficient volumes of material at affordable prices.

3.3 The role of municipalities

Municipalities are the custodians of waste management within the area under their control and form the nucleus of all waste related activities (RSA 1998: clause 84; RSA 2008: clauses 10-11). Municipalities have a direct interest in promoting reclamation and recycling of waste.

Municipalities can support these activities among other things by:

- encouraging and facilitating separation at source programs,
- encouraging informal reclaimers at landfills to join organised reclamation organisations,
- establishing buy-back/drop off facilities or facilitate the establishment thereof, and
- making landfills available for use by organised reclamation organisations.

Municipalities benefit in multiple ways from such involvement:

- Less waste will be disposed at the landfill
- The remaining life of the landfill will increase
- Structured reclamation activities on the landfill
- Additional security and safety of the reclaimers
- It reduces the liability of the municipality
- Stimulating the awareness of recycling in the area
- Reducing waste/littering in the municipal area
- Reputational development
- Landfill external audits will reflect better management practices
- Decrease of the cost for decommissioning of the landfill
- Availability of data about the type and volume of recyclables on a monthly basis
- More entrepreneurial activities in the municipal area
- Employment of people in the municipal area

4. CONCLUSION

There are many stakeholders involved in the value chain of recyclable waste material. This paper has served to highlight the multitude of stakeholders in the process, especially at local level. The optimisation of the waste recycling value chain will have huge environmental and socio-economic benefits for reclaimers, entrepreneurs, SMEs, communities and local authorities.

REFERENCES

RSA (1996) *The Constitution of the Republic of South Africa*, Act 108 of 1996.

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