

# Opportunities in the Waste Sector

**The Green Economy as a driver of sustainable  
development and job creation**

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Mpumalanga Green Economy Roundtable Discussion  
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# OUTLINE OF PRESENTATION

1. Background to the waste situation in South Africa
2. Opportunities that the waste sector provides
3. Issues that need to be addressed
4. Conclusions





**An estimated 90% of the waste we generate is disposed of to landfills (DEA, 2012) – often to very poorly designed and operated dumpsites**





**An estimated 30% of the food we produce (local agricultural production) goes to waste (CSIR, 2013)**





**About 85% of builders' rubble (mineral component) is landfilled (GreenCape, 2016)**





**According to Packaging SA (2013), 49% of packaging waste is still disposed of to landfill**





# OPPORTUNITIES FOR THE WASTE ECONOMY



- The **diversion of waste** away from landfill
  - Up the waste hierarchy towards prevention, reuse, recycling, recovery
  - And towards value adding opportunities
- Has the potential to create numerous **environmental, social** and **economic** opportunities for South Africa
- It is in this, that we find the opportunities for waste and the Green Economy

# ENVIRONMENTAL OPPORTUNITIES

Reducing the impact of waste on air, water, soil





# SOCIAL OPPORTUNITIES



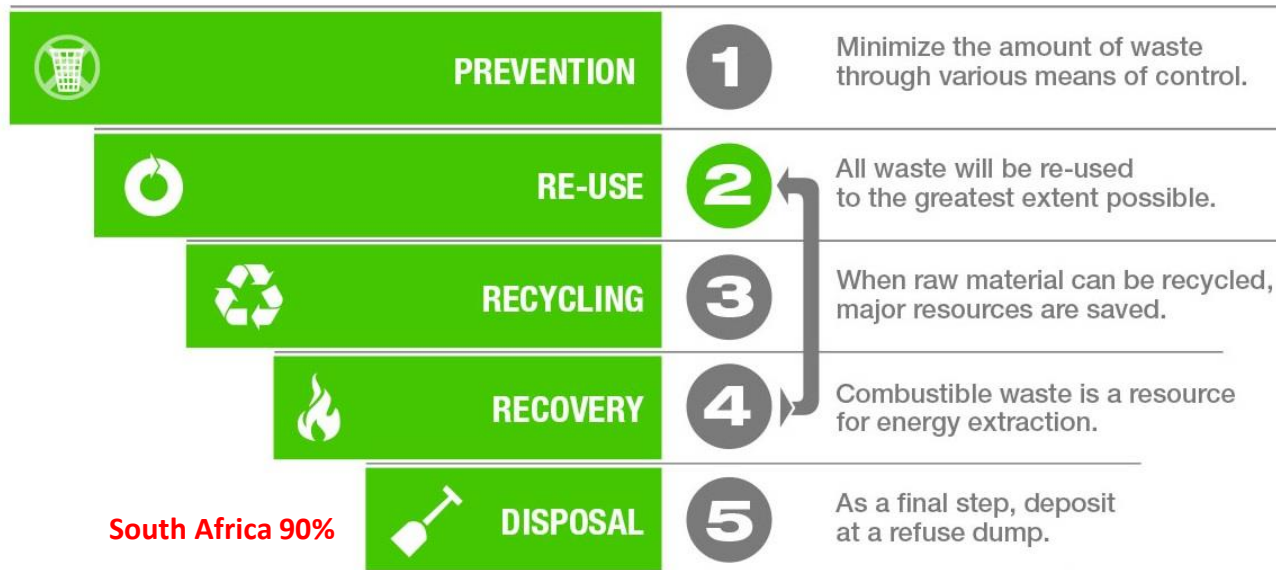
- Immediate opportunities for low-skilled job creation in the waste sector –
  - **Open-spaces cleaning** (e.g. clearing of illegal dumping sites, street cleaning and sweeping, litter picking)
  - Waste **collection**
  - **Collection** and **sorting** of recyclables
- **Labour intensive** activities that require **low skills**
- **Low barriers** to entry



# SOCIAL OPPORTUNITIES

- There are opportunities to create jobs **across the waste hierarchy, varying in skill level**

## WASTE HIERARCHY



## JOB OPPORTUNITIES

- **Cleaner production, Industrial efficiency, Design for environment**
- **Dismantling, refurbishment, Reuse**
- **Collection, sorting, reprocessing, manufacturing**
- **Waste-to-energy processing**
- **Landfill operation**



# ECONOMIC OPPORTUNITIES

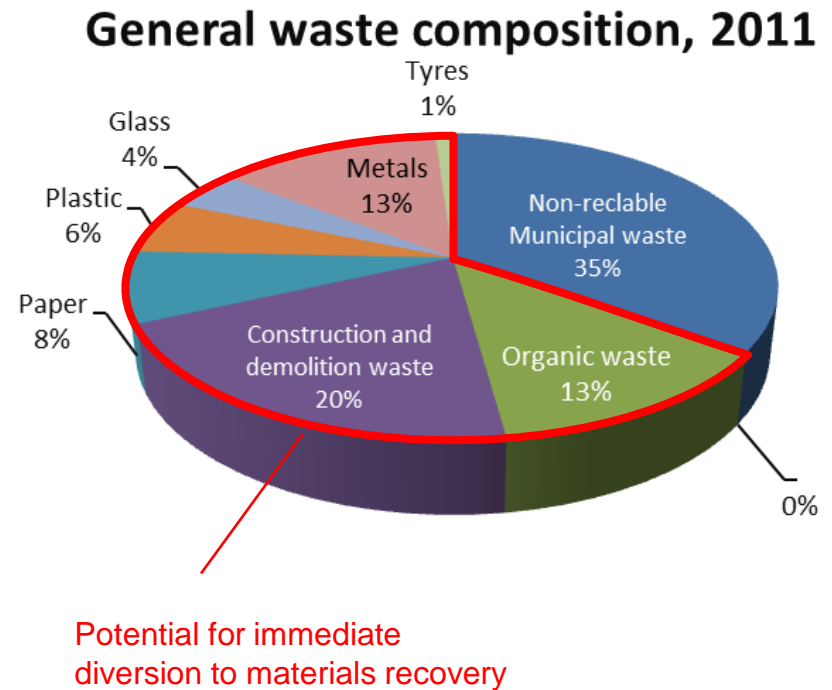
Re-introducing resources back into the economy





# OPPORTUNITY WASTE STREAMS

- Much of the focus to date, in creating jobs and livelihoods has been in the collection and recycling of **paper and packaging waste** (paper, plastic, glass, cans)
- In fact, the biggest impacts can be achieved in diverting the two largest general waste streams away from landfill – **builders' rubble** (C&D waste) and **organic waste**



# OPPORTUNITY WASTE STREAMS



An estimated 60-70% of SA's general waste could be diverted away from landfill into recycling/recovery



## Builders' rubble:

opportunities in processing  
and application



### Summary

*The market for builders' rubble is well established in the City of Cape Town (CCT), with a growing demand for builders' rubble in the construction industry.*

*One of the main drivers of this market is the rising price of virgin material. The goal of GreenCape's work is to facilitate industry access to additional feedstock, and unlock the considerable opportunity for the inclusion of builders' rubble in road construction.*

This Industry Brief provides information on the market for processed builders' rubble in the City of Cape Town.

#### The brief covers:

- market opportunities
- market drivers
- recommendations to remove barriers to market development

The brief is aimed at crushing companies (processors of builders' rubble), construction and demolition companies, consulting pavement engineers and local and provincial government roads departments.

GreenCape has recently shown that diverting  $\pm 2.3$  million tonnes of construction and demolition waste (builders rubble) away from landfill over the next 4 years, within the City of Cape Town, can create 500 new jobs

# OPPORTUNITY WASTE STREAMS



- Particularly problematic waste streams – two largest waste streams generated in Mpumalanga by volume – include **mining waste** and **power generation waste (ash)**
- Explore opportunities for beneficiation



# CONSTRAINTS TO A WASTE ECONOMY

- BUT, South Africa will never achieve the full potential of a recycling or secondary resources economy, if municipalities don't get the basics of waste management right
- While we still have dumpsites that look like this



# ISSUES THAT NEED TO BE ADDRESSED

- To create a viable recycling (secondary resources) economy, we have to get the economics of waste management right
- Disposal of waste to landfill is too cheap in all South African municipalities (by an order of magnitude)
  - This makes alternative waste management options too expensive (relative to landfilling)
  - Even composting often can't compete financially with disposal to landfill
- Increasing the cost of disposal of waste to landfill, will increase the value of a m<sup>3</sup> of landfill airspace
- Which will make waste prevention, reuse, recycling and recovery more economically viable relative to landfilling



# ISSUES THAT NEED TO BE ADDRESSED

- But, it's not just about increasing gate fees while continuing to operate dumpsites
- To correct the economics of waste management, we need municipalities to –
  1. **Design** and **operate** their landfill sites according to legislation and minimum requirements ↑
  2. Correct the current under-pricing of waste management by recovering the **full-cost** (opex and capex) of waste operations ↑
- Proper waste management by municipalities, is the cornerstone to a viable waste reuse, recycling and recovery economy in South Africa



# ISSUES THAT NEED TO BE ADDRESSED

- Changing our landfills from dumpsites to proper sanitary engineered landfills



# ISSUES THAT NEED TO BE ADDRESSED



- Municipalities must also look at implementing **separation at source** – to (i) recover greater volumes, and (ii) cleaner material from the waste stream
- NWMS (Goal 1) – By 2016, all metropolitan municipalities, secondary cities and large towns have initiated separation at source programmes
- You may say, but “yes, we’re *already recycling things like plastics, glass, cans, paper, why the extra work?*”



# ISSUES THAT NEED TO BE ADDRESSED

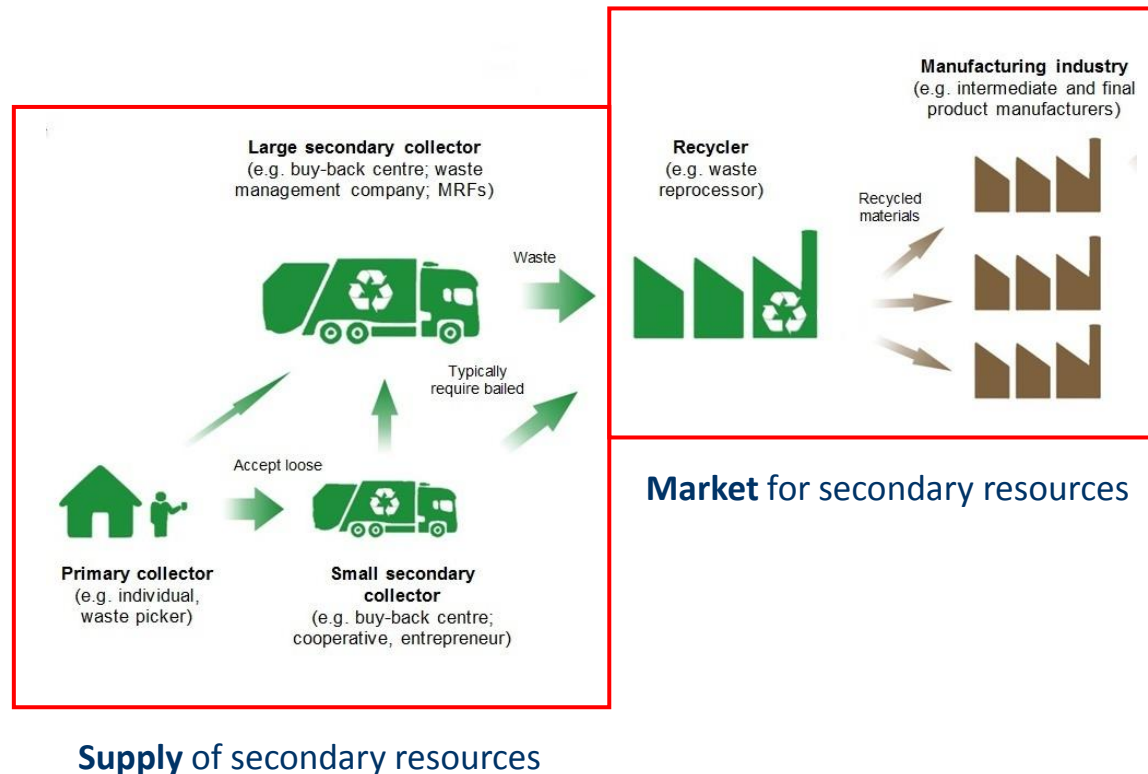


South Africa's recycling economy is currently based on the fact that we have an estimated 60,000-90,000 informal collectors earning a livelihood from the collection of recyclables (street and landfill) (80-90%)

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# ISSUES THAT NEED TO BE ADDRESSED

- The above actions will help to increase the **supply of material** (collection) into the economy
- But, there is also a very important role of local, provincial and national government to support the development of **local markets** with the private sector





# CONCLUSIONS

- The **correct management of waste** and
- The **diversion of waste** away from landfill
  - Up the waste hierarchy towards prevention, reuse, recycling, recovery
  - Towards value adding opportunities
- Has the potential to create significant **environmental**, **social** and **economic** opportunities for South Africa

# CONCLUSIONS

- In so doing, we can create **jobs** and new **businesses**
- Opportunities for job creation and enterprise development in the waste sector, lie in –
  - Open-spaces cleaning (e.g. clearing of illegal dumping sites, street cleaning and sweeping, litter picking)
  - Waste and recyclable collection and sorting
  - Recycling and recovery
  - Reuse, refurbishment and repair of goods, e.g. appliances
- In many more waste streams than just packaging, e.g. organic waste, builders' rubble, e-waste, mining and power-generation waste



# CONCLUSIONS

- We must support this process by creating the skills necessary to drive waste prevention, reuse, recycling and recovery
- The DST/CSIR through the 10-year Waste RDI Roadmap for South Africa, is actively driving skills development (post-graduate degrees); research & development; and innovation in support of this transition to a Green Economy
- Research that will lead to new and innovative uses for waste, e.g. bioplastics, valorisation of organic waste, increased local recycling of WEEE and a lot more ...

[www.wasteroadmap.co.za](http://www.wasteroadmap.co.za)

# QUESTIONS

## Thank you

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