

WASTE MANAGEMENT SUMMIT 2015

Setting the Scene

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Chemicals and Waste Management



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Outline

- Strategic Context
- Global Trends Analysis
- Problem statement
- Research, Development and Innovation Waste Roadmap
- Job creation potential
- SMME waste infrastructure priority
- Current reform



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Strategic Context



- State of Waste Management in SA
- Evolution of Waste Management policy and practice
- Transformation of the Waste Sector – waste rights, SMME, CO-OPs, SETA
- Transition to a recycling economy – pricing, funding, waste charges
- Waste valorisation – waste to energy, value chain, technology, SMMEs
- Regulatory Reforms – new regs,
- Institutional & Governance Reforms
- Improve Municipal Support

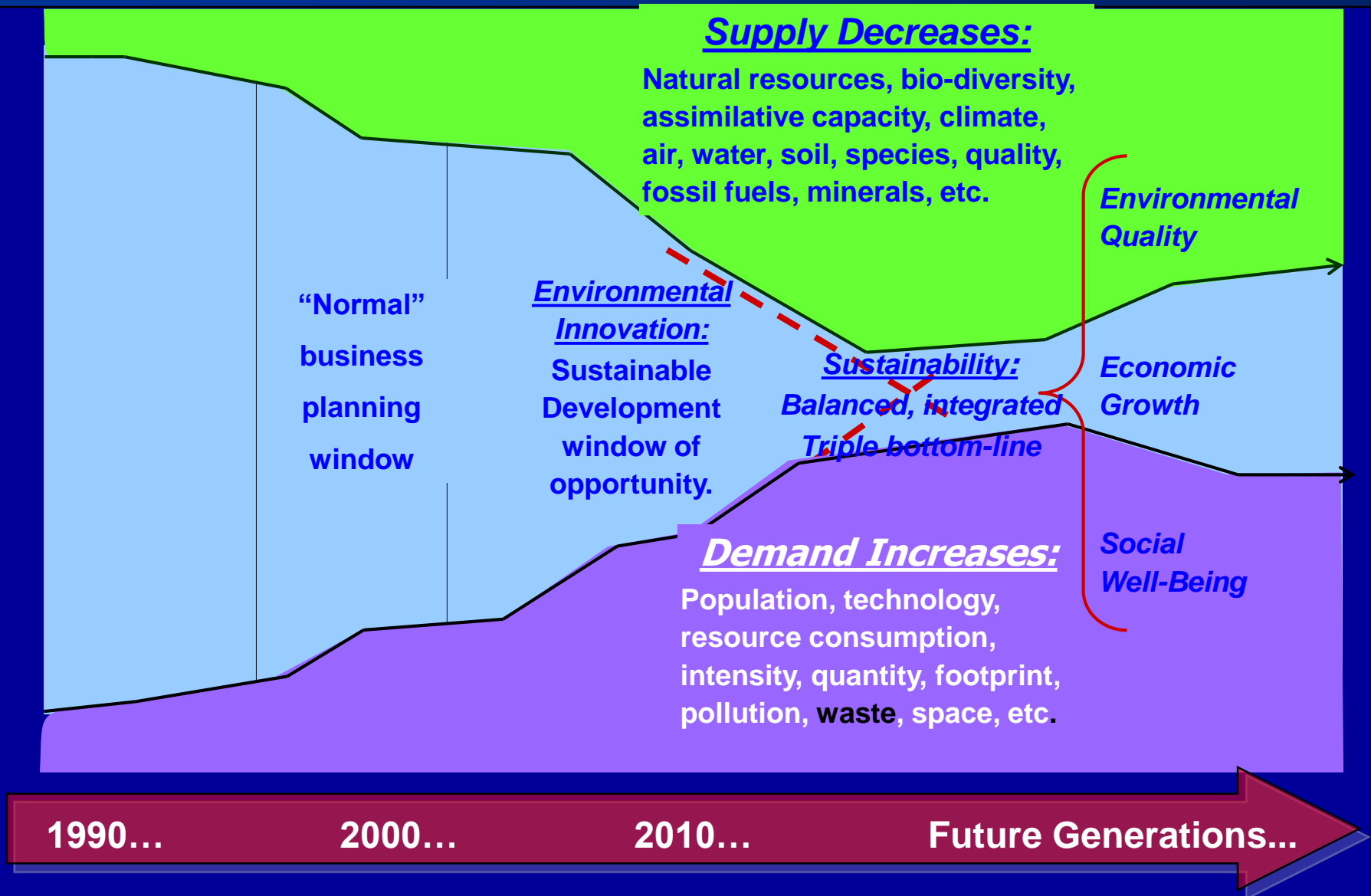


Key issues and challenges



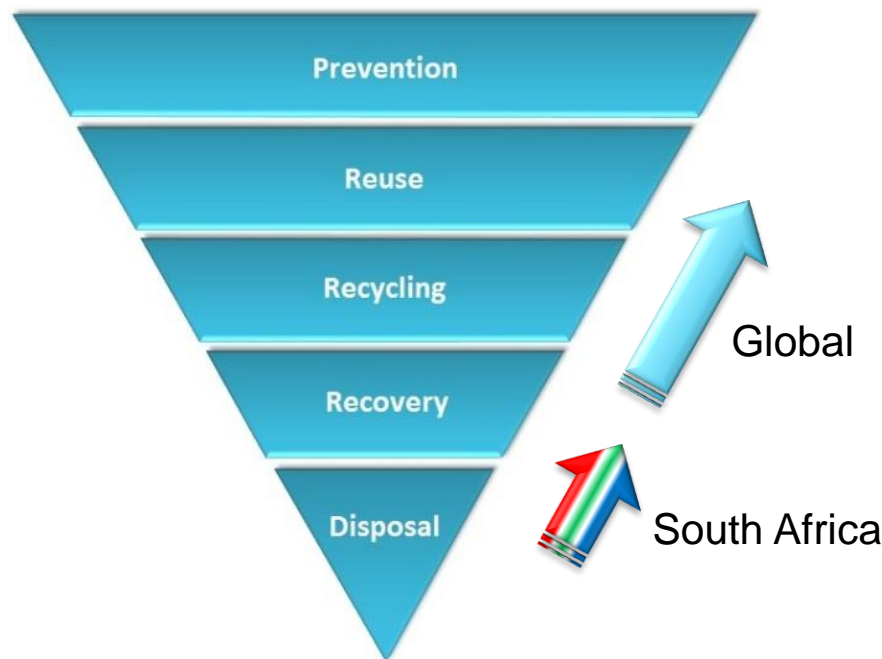
- Institutional and Governance
- Integrated planning and development
- Ineffective Funding and budgetary constraints
- Regulatory and Legislative issues
- Management and Operations –
- Cost recovery models
- Capacity building and Awareness
- Enforcement matters
- Compliance and enforcement issues
- Economic opportunities – recycling economy

Converging Global Supply & Demand



Global and local drivers

- Waste management is currently undergoing a major global paradigm shift



Global and local drivers:

- Population growth and urbanisation
- Increasing quantity and complexity of waste
- Climate change
- Carbon economics
- Resource scarcity
- Commodity prices
- Energy security
- Globalisation
- Job creation
- Tightening regulation

STRATEGIC CONTEXT

- South Africa's commitment to sustainable development is aimed at balancing the broader economic and social challenges while protecting environmental resources.
- For the waste sector in South Africa this means care must be taken to ensure **wise consumption and production patterns, resource efficiency, waste prevention and minimization and waste reuse and recovery.**



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STRATEGIC CONTEXT

- Transitioning to a **RECYCLING ECONOMY**, economy has sound economic and social justification.
- This transition would involve **levelling the playing field** for greener products by reforming policies and developing incentives, strengthening market infrastructure, **redirecting public investment**, greening public procurement and improving institutional and implementation capacity.



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PROBLEM STATEMENT

- Waste management has traditionally suffered **from pervasive under-pricing**, which means that the costs of waste management are not fully internalised and industry, and waste disposal is preferred over other options.
- It represents a **market failure** in that waste and recyclable materials are undervalued which results in more waste ending up on our streets, rivers and landfill sites. By apportioning the **right value to waste, more markets and trade** in recyclable goods will be created resulting in **more jobs** and more **enterprise development**.



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BACKGROUND WASTE ACT AMENDMENTS

- The National Environmental Management: Waste Act, 2008 regulates waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.
- Since 2009, certain **implementation challenges** with respect to some provisions of the NEMWA were identified by the department and stakeholders
- These relate to: **regulatory certainty, institutional implementation capacity, interpretation, and administration.**
- The waste sector has been identified as having significant potential for **job creation** and contributing to the macro economy



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NEW PRICING REGIME

- In order to facilitate more **market demand** for recyclable goods and services there is a need to embark on a integrated approach to **quantifying the economic potential** of the all waste streams
- A **new pricing strategy** is thus envisaged in the new amendments which seeks to provide the guiding methodology to be developed between all stakeholders.
- This will incorporated into a Money Bill which will be developed with Treasury that will provide for the collection of revenue derived from waste charges as well as its disbursement and funding of industry waste management plans thru the **Bureau**



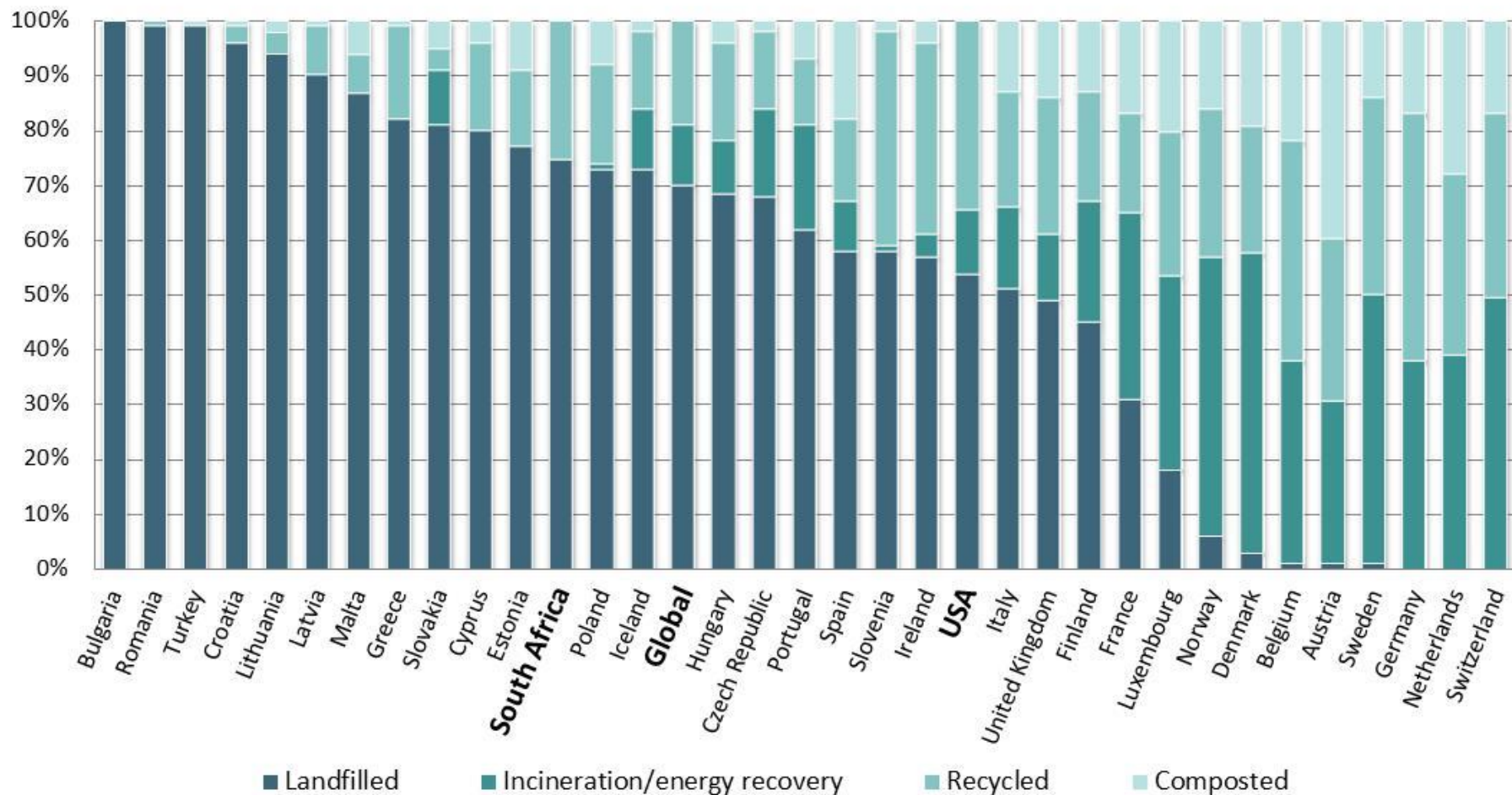
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Global Trends: Developed

Municipal solid waste management



Adapted from DEA (2012); ISWA (2012); EuroStat (2012); US EPA (2013)

COMPARISON

Country	% of waste Recycled	% of waste Processed WTE	% of waste ends up in Landfills
Germany	65%	33%	2%
Netherlands	59%	38%	3%
Belgium	63%	33.5%	3.5%
Sweden	49%	47.5%	3.5%
Denmark	42%	54%	4%
South Africa	10%	2%	88%



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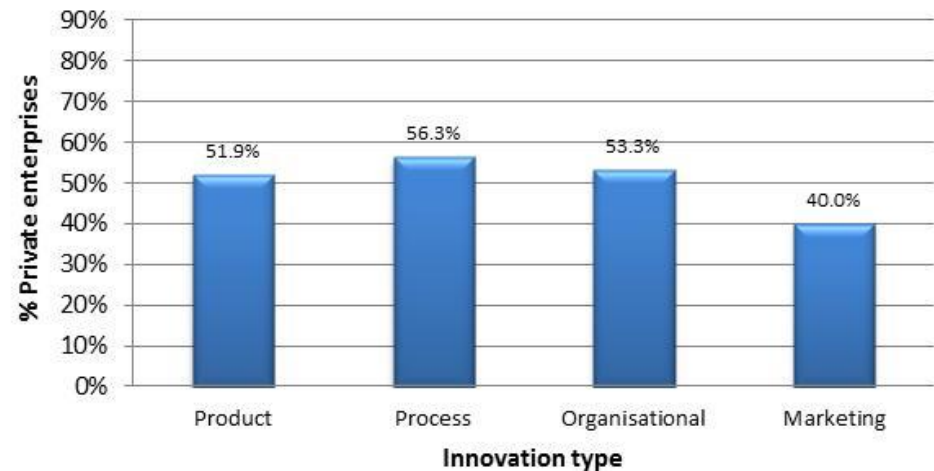
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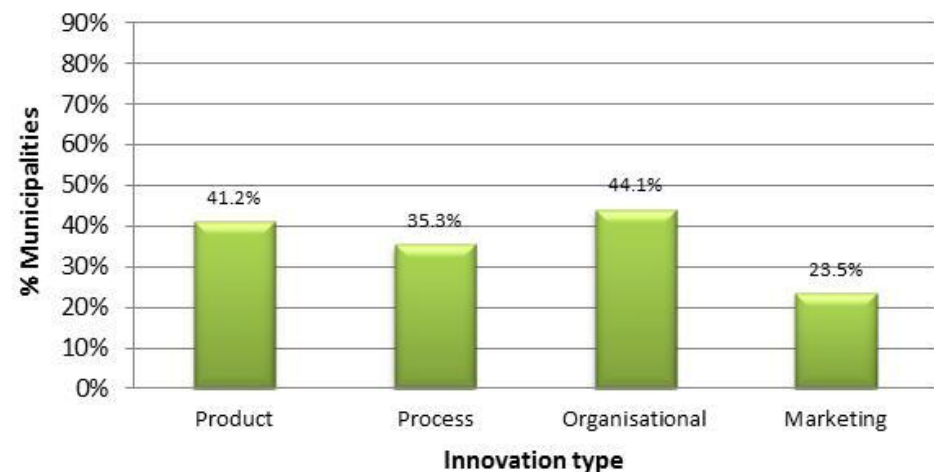
Waste innovation - Introduction

- Greater innovation activity (technological and non-technological) amongst the private waste sector than amongst municipalities
- Higher technological innovation activity than non-technological for both private and public sector

Private: Introduction of innovation

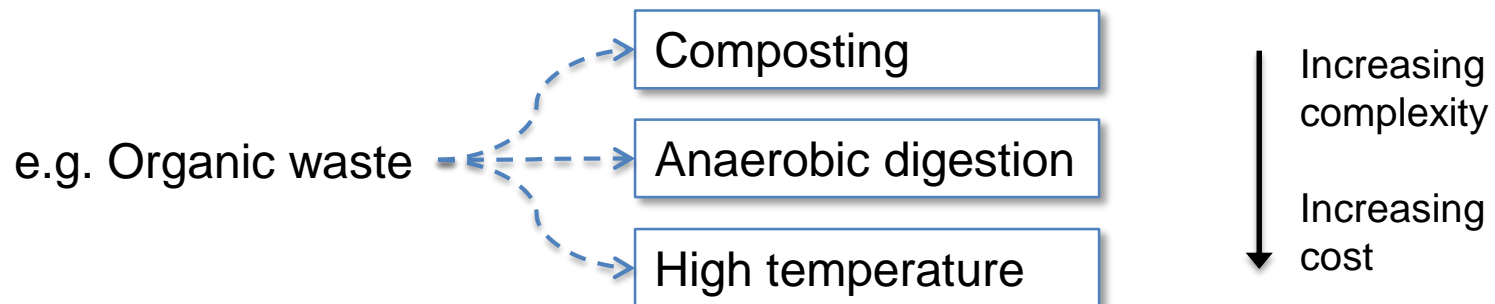


Mun: Introduction of innovation



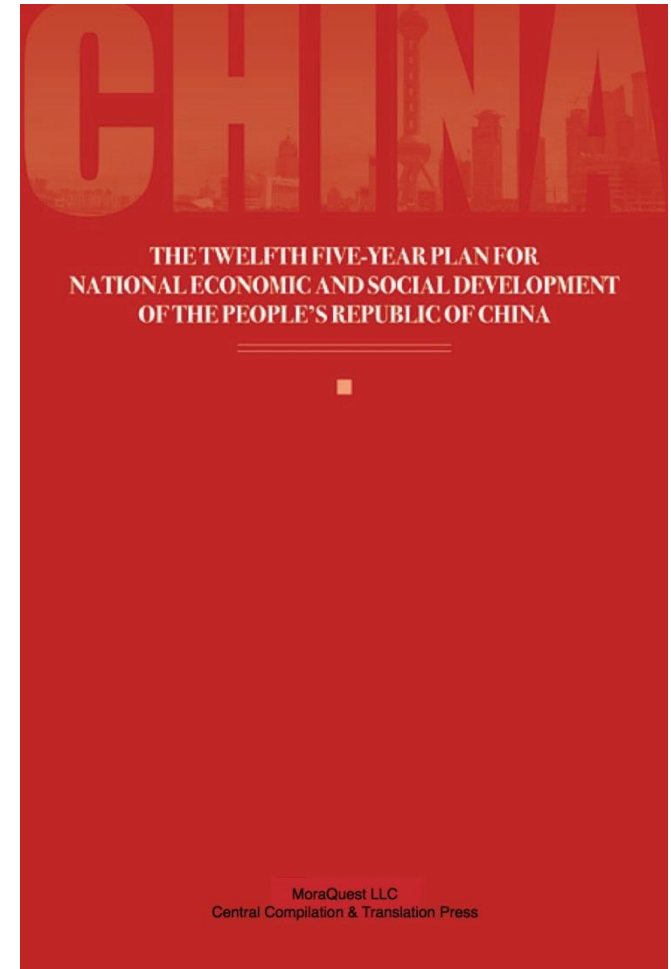
Global Trends: Developing

- Actively pursuing alternative waste management option, focus on –
 - Increased materials and energy recovery
 - Through increased recycling and recovery
- However, technology responses vary between countries (from low to high technologies)



Global Trends: Developing

- Major focus areas for China (12th Five-year plan)
 - Waste recycling & recovery of metals
 - Recycling of large industrial waste streams, e.g. fly ash, gypsum, mining waste
 - Energy recovery from waste, e.g. domestic waste, industrial waste, sewage sludge



Global Trends: New Projects

Top 10 Countries by New Waste Projects (number) (YTD 2013)

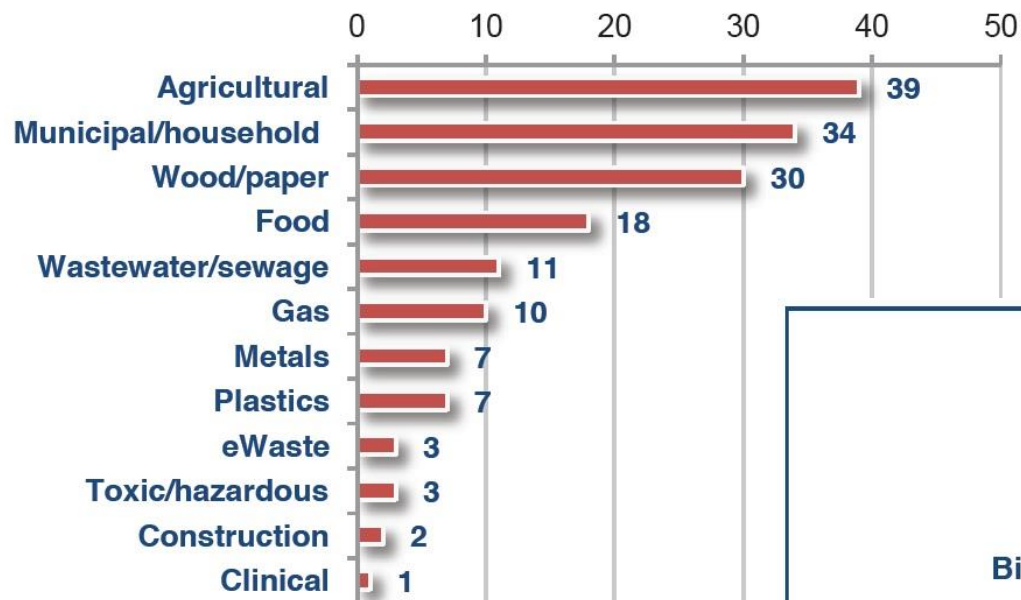
	Projects	% of Total
USA	295	20.4
UK	228	15.8
Canada	90	6.2
China	67	4.6
India	64	4.4
Japan	59	4.1
Germany	57	3.9
France	38	2.6
Finland	36	2.5
Australia	31	2.1
Others	482	33.3

Top 10 Countries by New Waste Projects (number) (Dec-13)

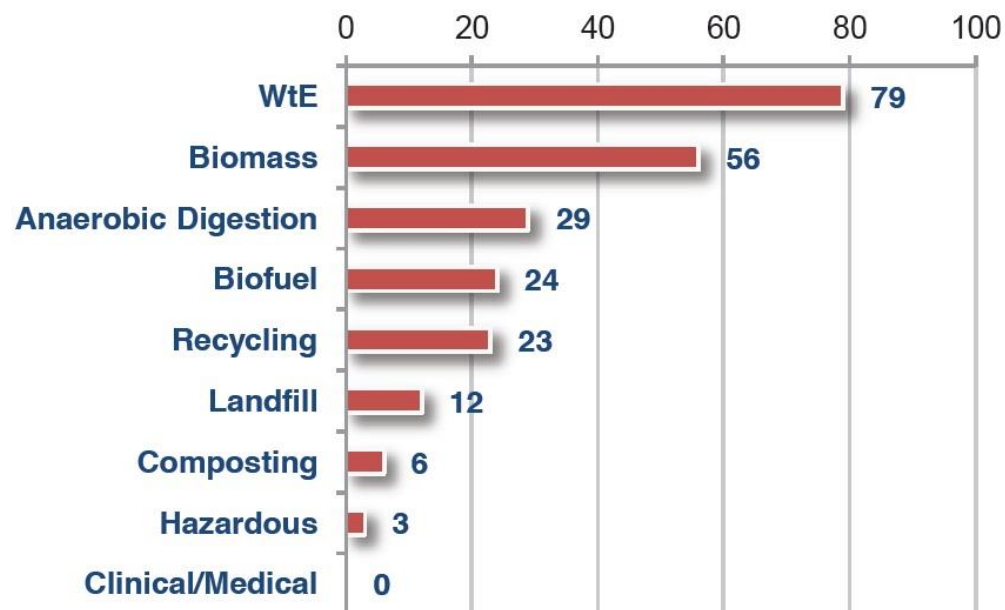
	Projects	% of Total
USA	33	22.1
UK	27	18.1
Canada	13	8.7
Germany	12	8.1
India	6	4.0
Pakistan	6	4.0
Chile	4	2.7
China	4	2.7
France	4	2.7
Russia	4	2.7
Others	36	24.2

Global Trends: New Projects

Projects by Waste Type, Dec-13



Projects by Facility Type, Dec-13



AcuComm Waste Futures
(December 2013)

- Economic opportunities from waste
- Globalization of waste
- Opportunity waste streams
 - Organic waste (industrial and agricultural biomass, municipal organic waste, food waste and sewage)
 - Recyclables (metals, plastic, paper, glass, e-waste)
 - Large industrial waste streams (power generation & mining)
- Opportunity areas
 - Fastest growth in waste markets expected in emerging economies (China, India and Latin America)
 - South Africa identified as one of five emerging markets with “exciting opportunities” (BofAML, 2013)
- Public-private partnerships
- Different paths to achieving IWM

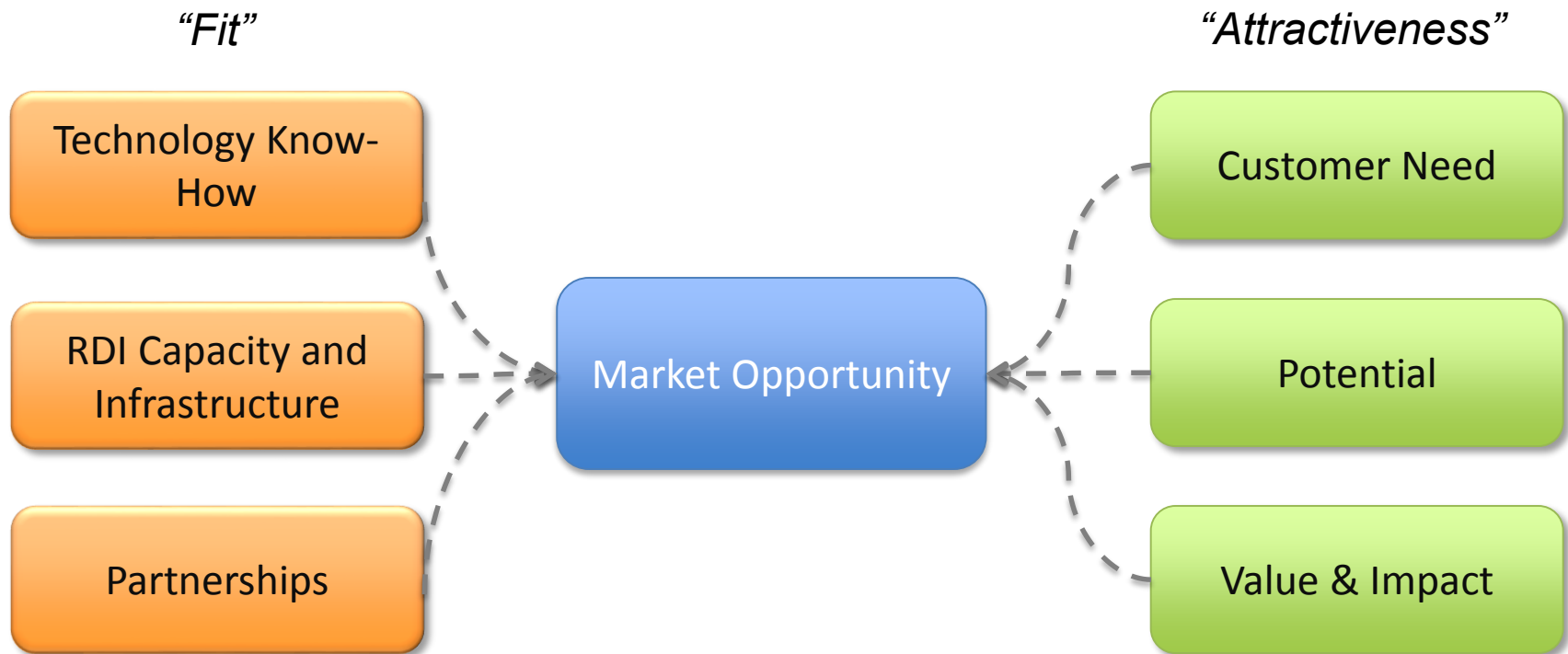


Sound Material Society

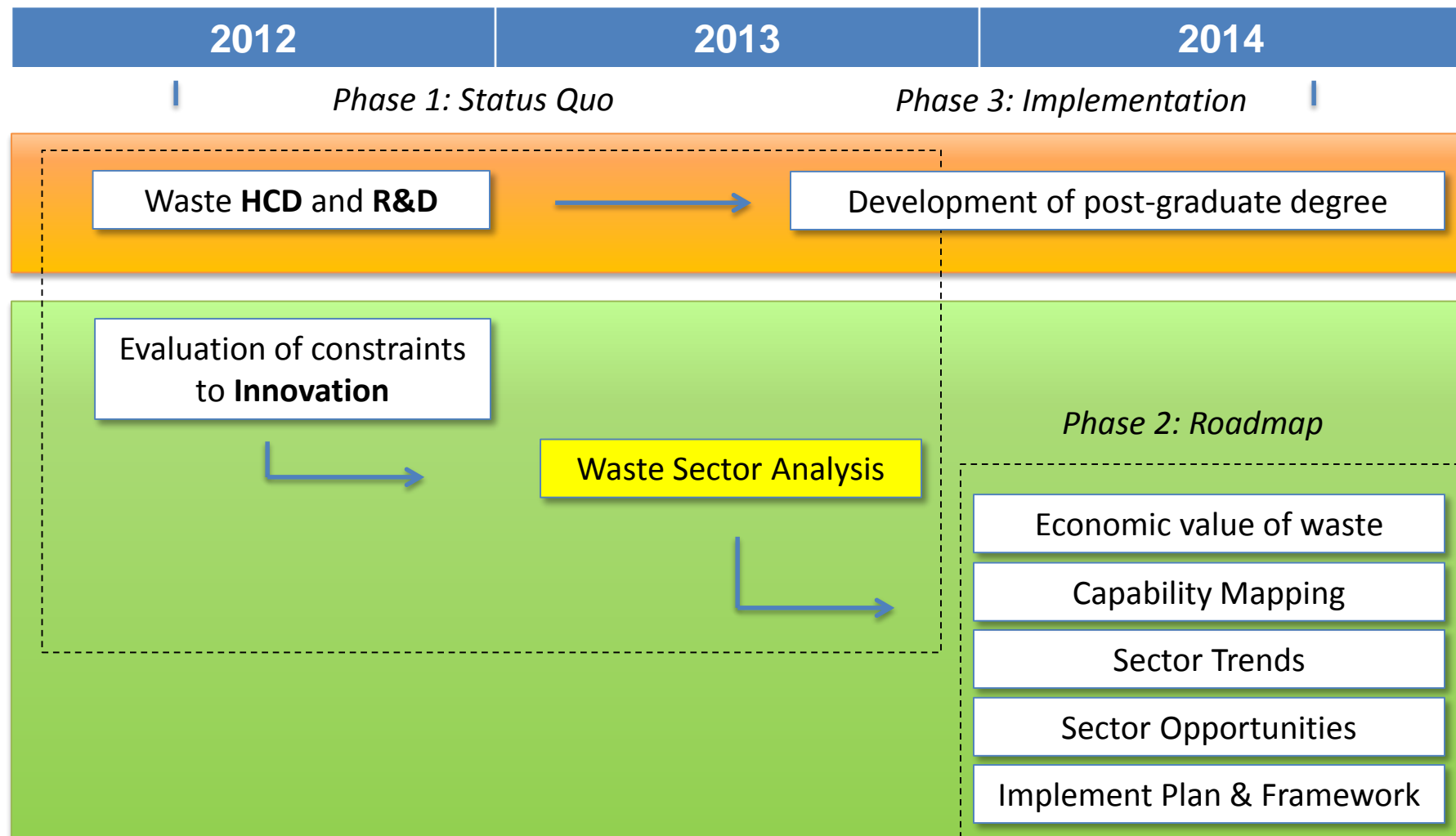
- Material flow analysis: input vs output
- Production and consumption - material
- Material recovery – resource efficiency
- Decouple GDP growth from waste growth
- Waste will quadruple by 2050: 9bn with 3bn middle class consumers
- Mass balance approach
- Industrial entropy – recycling & recovery rates
- Circular Economy – recycle targets

Evaluating Market Opportunities

- Market opportunities for each prioritised waste stream assessed through expert work sessions will be convened for each waste stream

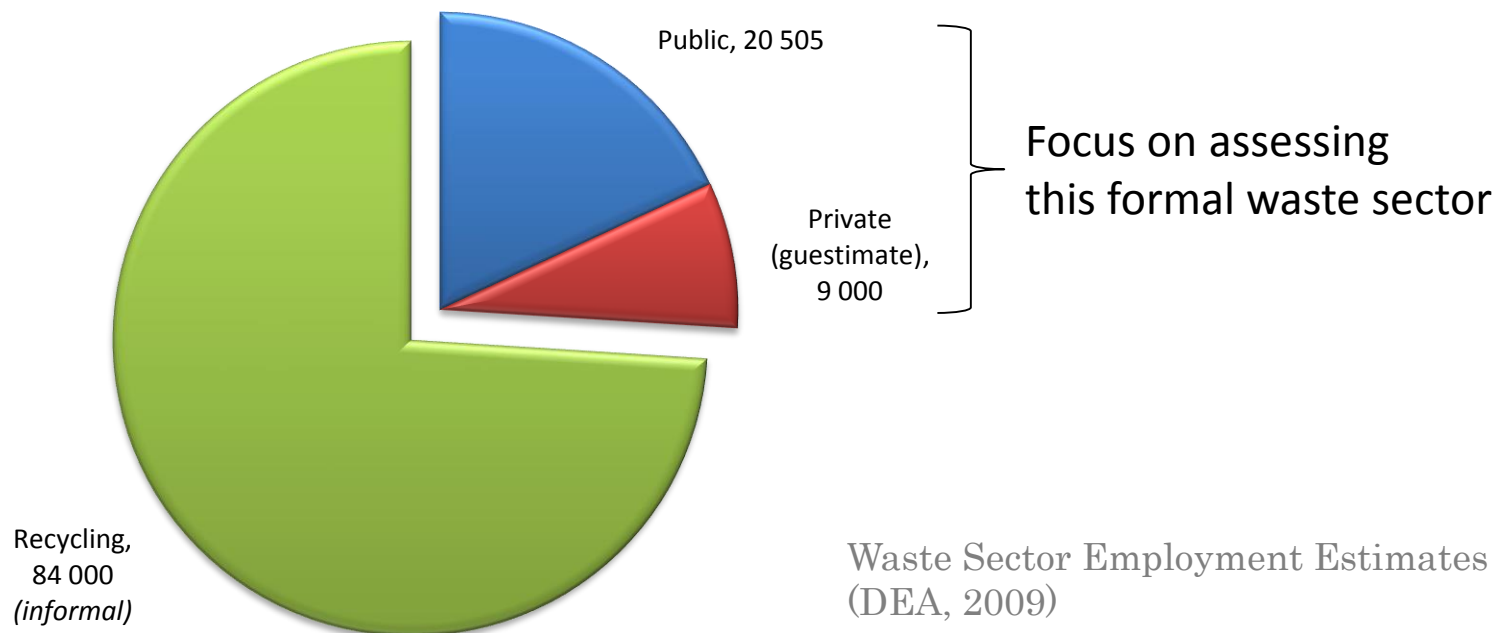


Waste RDI Roadmap: Process



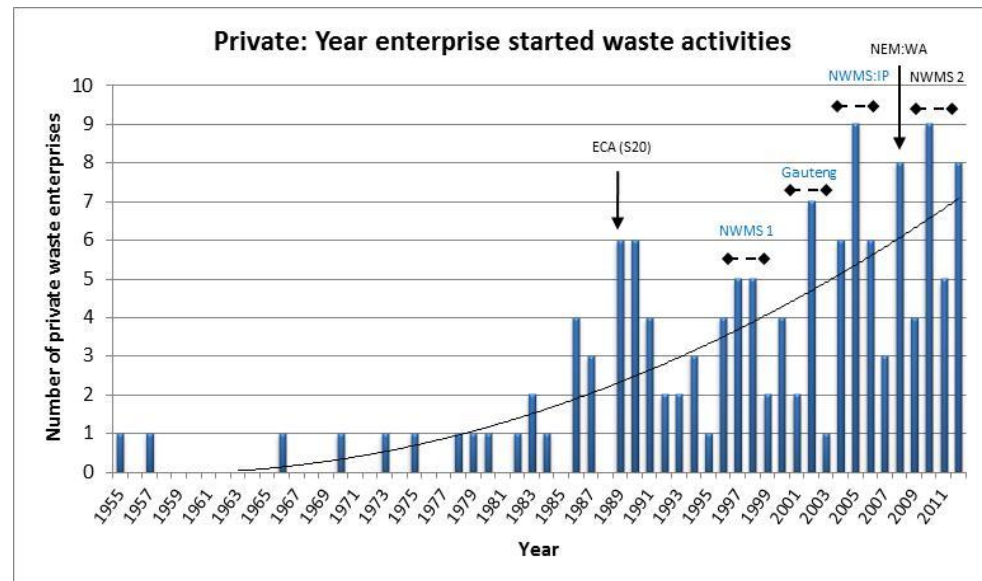
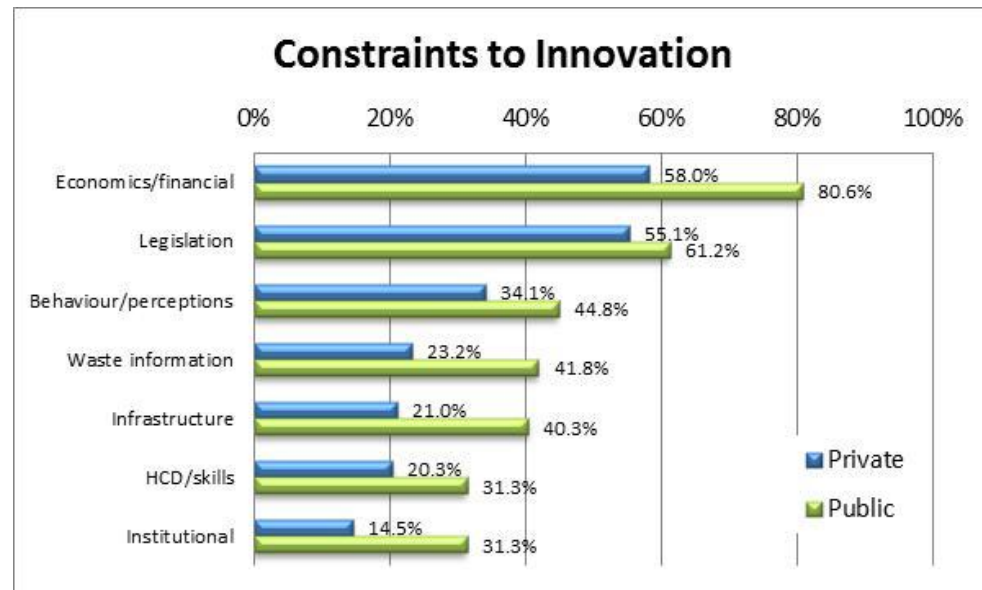
SA Waste Sector Survey

- Aim of the waste sector survey was to –
 - “Define” the formal South African waste sector
 - Establish a “baseline” of the organizational and innovation status of the formal waste sector



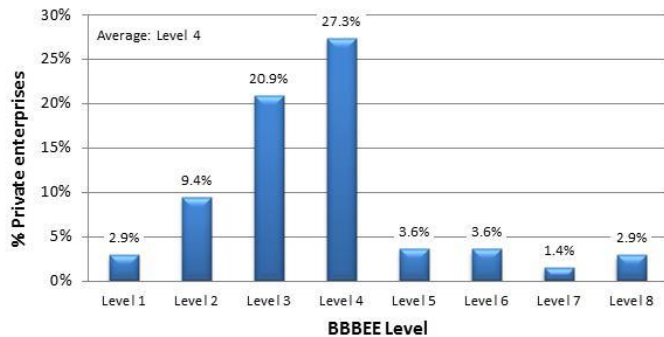
Opportunities and constraints

- Financial and Legislative issues remain the biggest two constraints to waste innovation
- While 'Financial' came out highest for both public and private sector –
 - Private sector – system economics
 - Public sector – budget / funding
- Influence of policy and donor funded projects on stimulating waste sector
- Legislation (and government commitment) has the potential to stimulate new sector development, growth and resultant innovation
- If over-regulated it can hinder or slow this innovation
- Trick is to find a balance between 'encouraging' and 'controlling'

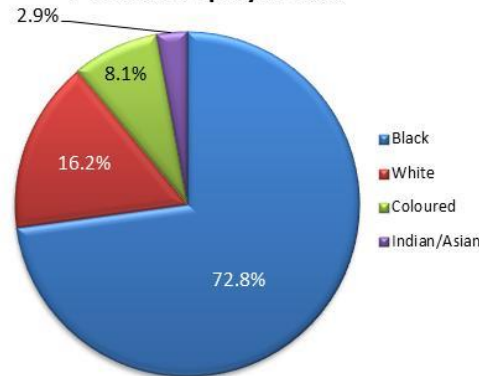


Transformation of waste sector

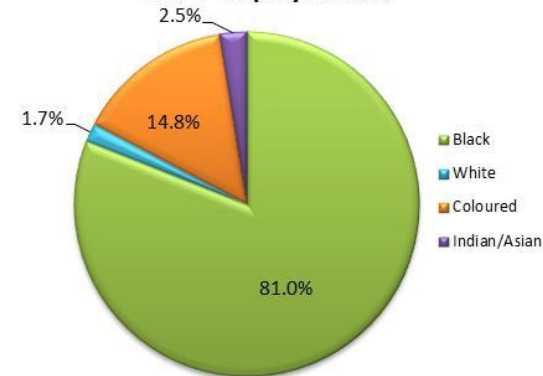
Private: BBBEE Level



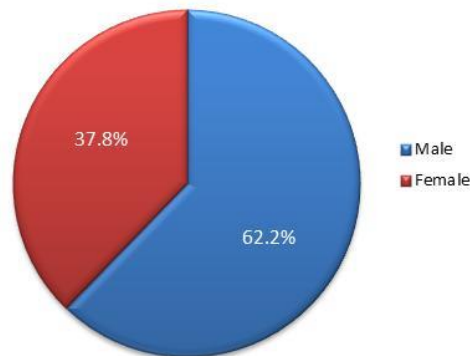
Private: Employee race



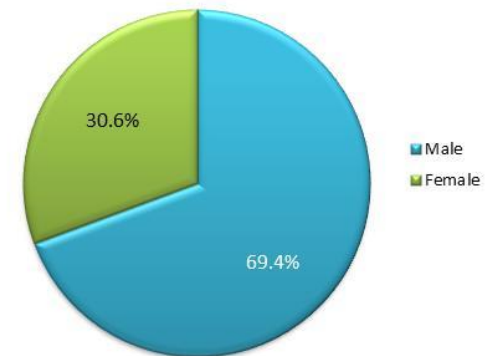
Mun: Employee race



Private: Employee gender



Mun: Employee gender



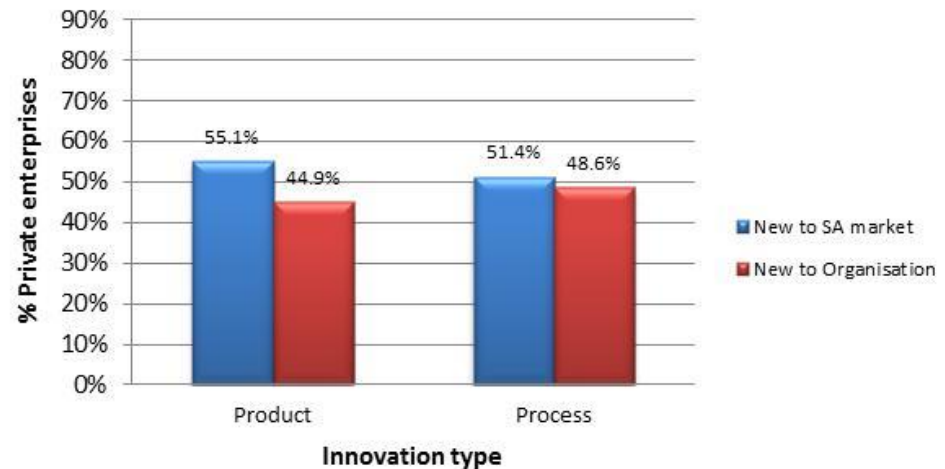
- Positive transformation of the waste sector –
 - BBBEE – 77.2% of private organisations BBBEE certified, Average BBBEE - Level 4
 - Race – 83.8% of private sector employees and 98.3% of municipal employees being people of colour
 - Gender – 37.8% of private sector employees and 32.1% of municipal employees being female



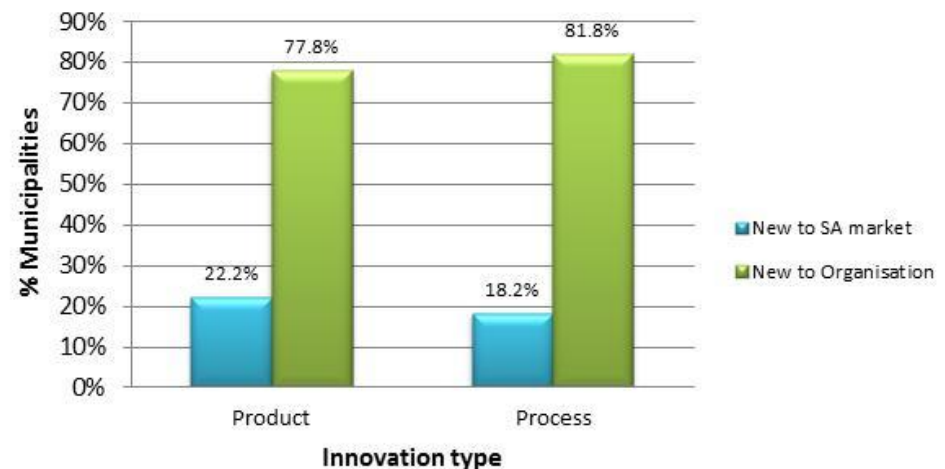
Waste innovation - Market

- Levels of innovation
 - New to organisation
 - New to market of the firm
 - New to South Africa
 - A world first
- Private waste sector showed a greater tendency to introduce new technological innovations to the South Africa waste market, compared to municipalities who typically introduced technological innovations to their own operations
- Nature of the private sector (competitive advantage)

Private: Market for innovation



Mun: Market for innovation



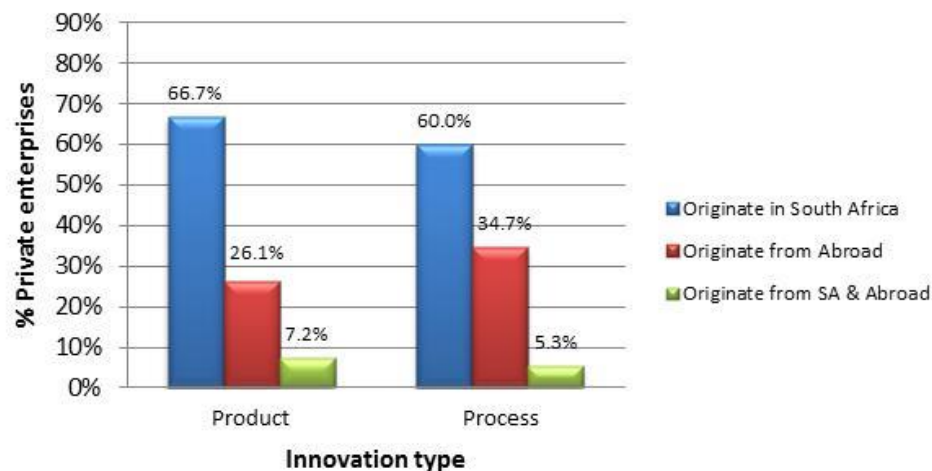
Waste innovation - Origin

- Private waste sector showed a higher tendency than municipalities to introduce technological innovations from overseas

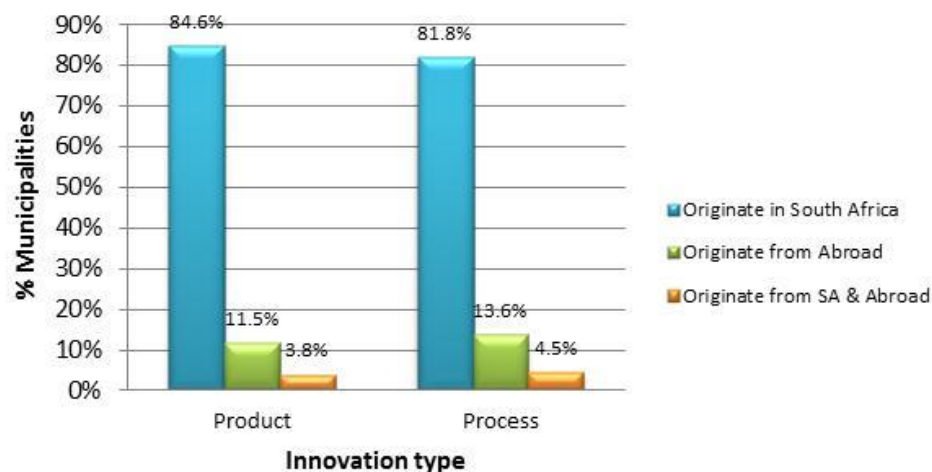
Key insights -

- The private waste sector has an important role to play in transferring waste innovations into the public sector – potential partner to support the transfer of technological innovations from supplier (local and abroad) into municipalities
- Mechanisms to support partnerships between the public and private sectors must be explored
- Support uptake of innovation by micro, very small and small enterprises in the waste sector

Private: Origin of innovation



Mun: Origin of innovation



CURRENT REFORMS IN THE WAR ON WASTE

- Legislative reform
 - Amendments to waste legislation
 - Development of regulations for effective implementation
- Institutional reform
 - Formation of entities that have been
 - Internal Committee on IndWMPs
- Revenue collection reform
 - Redesigning the waste revenue collection systems such that government plays a role
 - National Pricing Strategy for Waste Management is also there to guide the process



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THANK YOU