

Capacity building in the Waste Sector in South Africa



Presenter: Henry Roman (PhD)

**Occasion: African Marine Waste Conference – Nelson Mandela Bay
Metropolitan**

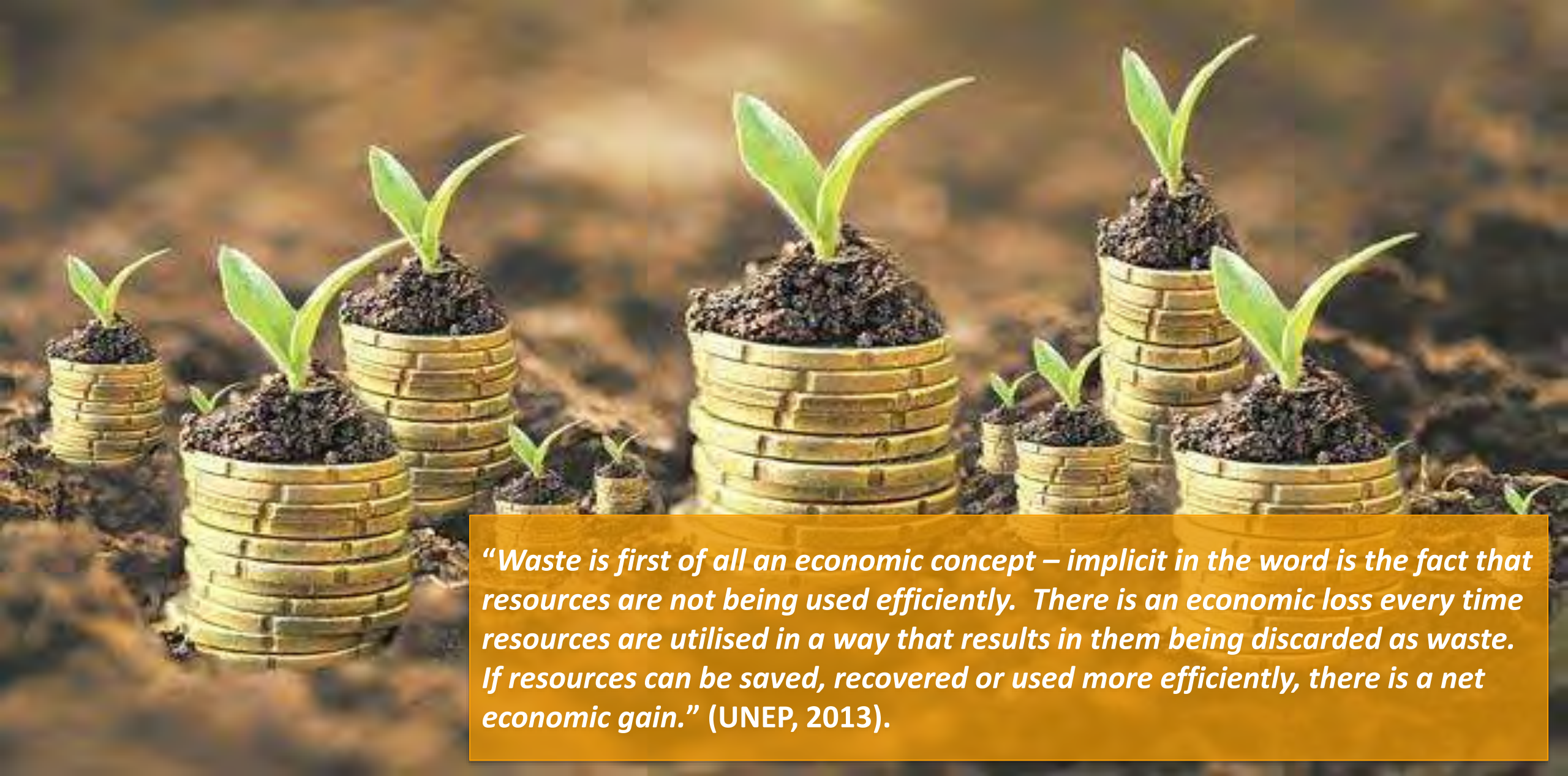
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**science
& technology**
Department
Science and Technology
REPUBLIC OF SOUTH AFRICA

Department of Science and Technology (DST)

- **Vision**
 - **Increased well-being and prosperity through science, technology and innovation.**
- **Mission**
 - **To provide leadership, an enabling environment, and resources for science, technology and innovation in support of South Africa's development.**



“Waste is first of all an economic concept – implicit in the word is the fact that resources are not being used efficiently. There is an economic loss every time resources are utilised in a way that results in them being discarded as waste. If resources can be saved, recovered or used more efficiently, there is a net economic gain.” (UNEP, 2013).

Skills in / for the **Waste Sector**

Waste RDI Roadmap – 2015, DST

The Strategy calls for informed decision-making supported by scientific research.

National Waste Management Strategy – 2011, DEA

Drivers in Waste Management



- **July 2012 – HCD Workshop**
 - Purpose was to discover current and required human capital development programmes to support the **Waste RDI Roadmap**
 - To note: focus on tertiary level qualifications
- **Identified the overwhelming need for waste management skills at local government level**
 - Lack of understanding of the green economy and innovation
 - Existing graduates lacked sufficient skills and practical knowledge to be functional within the sector upon graduation
 - Thus a need existed to develop competent waste management professionals
 - Limited funding in the waste sector, thus a need to create a network of researchers



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How do we create professional waste managers?

- **Status Quo**
 - **No post-graduate qualification purely in waste management**
- **Invited universities to submit Expressions of Interest in developing such a qualification**
 - **Respondents included North West University, University of Kwa-Zulu Natal and the Cape Peninsula University of Technology**
- **The degree would require a trans-disciplinary approach to meet the needs of the sector**
 - **A purely social science or engineering degree would not be sufficient**

- **University of North West**
 - **Introduction to Env Management (existing module)**
 - **Fundamentals of Waste Management (new module)**
 - **Waste Management Law and Governance (new module)**
 - **Environmental Analysis I (existing module)**
 - **New Waste Management Solutions (new module)**
 - **Research Project**
- **Progress**
 - **10 full-time graduates**
 - **8 current full-time students**
 - **6 part-time students in progress**
- **MSc**
 - **8 current full-time students**

- **Status Quo**
 - Too few researchers in South Africa active in waste management research
- **Initiated two types of calls to increase capacity**
 - Research grants with studentships embedded within the call
 - Scholarships
- **Progress**
 - 4 Hons
 - 26 Masters (2016), 12 Masters (2017) = 38 Masters supported
 - 10 PhDs (2016), 2 PhDs (2017) = 12 PhDs supported

RDI Clusters defined



Driving a Secondary Resources Economy to unlock approximately R17 Billion per annum to the GDP of RSA

Concluding Remarks

- **Don't just increase the skills base**
 - **Do so with purpose – use evidence to inform research and scholarships calls**
 - **Work with industry to understand needs**
- **High level skills will unlock innovations and technologies that will allow South Africa to catch up with the developed world**
- **To innovate in a complex world requires a systems approach to developing innovation policy**

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Waste RDI Roadmap

Outlines the proposed interventions, progression paths and the related instruments, and the required RDI investment over time



Trends

Describes the local and global trends in waste management and approach adopted in arriving at the priority waste streams for the Roadmap



Capabilities

Maps the nature, availability and maturity of waste RDI capability and capacity in South Africa



Opportunities

Provides an overview of the Market Opportunities we see, how attractive they are and what is required to realise them

www.wasteroadmap.co.za