Skills Development for the Green Economy

Presenter: Rebecca Maserumule

Occasion: Skills Development Summit

Date : 6 March 2018

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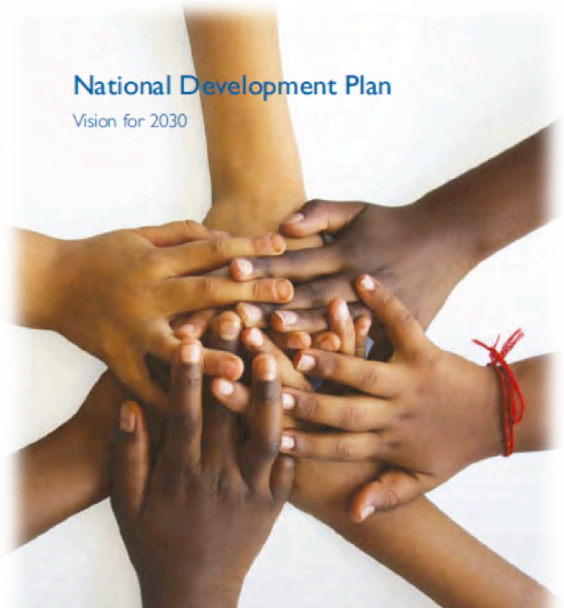
- Vision
  - Increased well-being and prosperity through science, technology and innovation.
- Mission
  - To provide leadership, an enabling environment, and resources for science, technology and innovation in support of South Africa's development.

"one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" **(UNEP, 2011).**

Green Economy Coalition (a group of NGOs, trade union groups and others doing grassroots work on a green economy) succinctly defines green economy as "a resilient economy that provides a better quality of life for all within the ecological limits of the planet".

Government transitioning to a Greener Economy

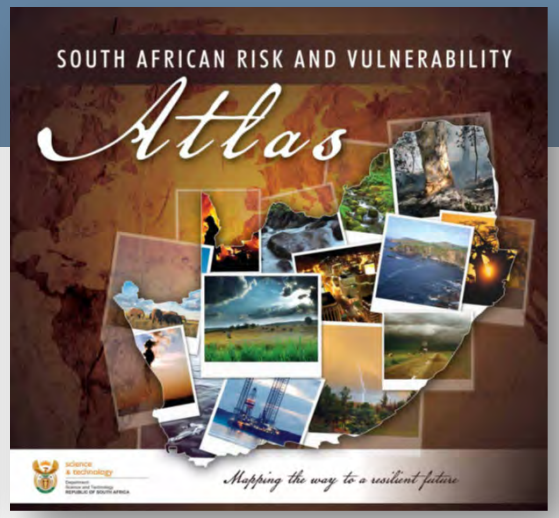


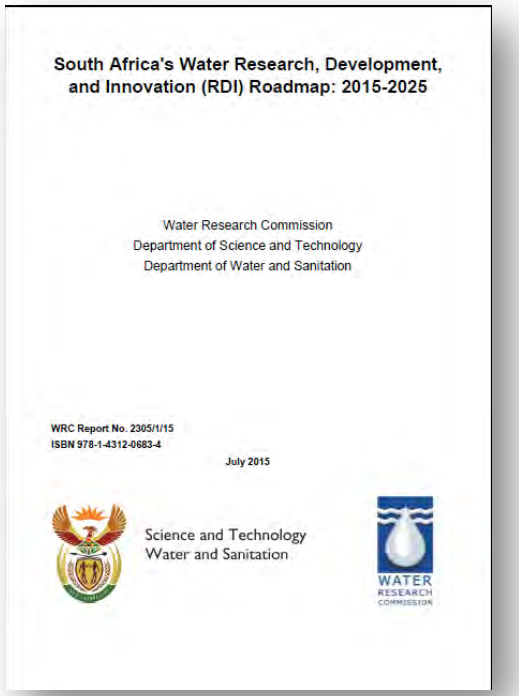
Vision 2030 – to transition towards a low carbon society

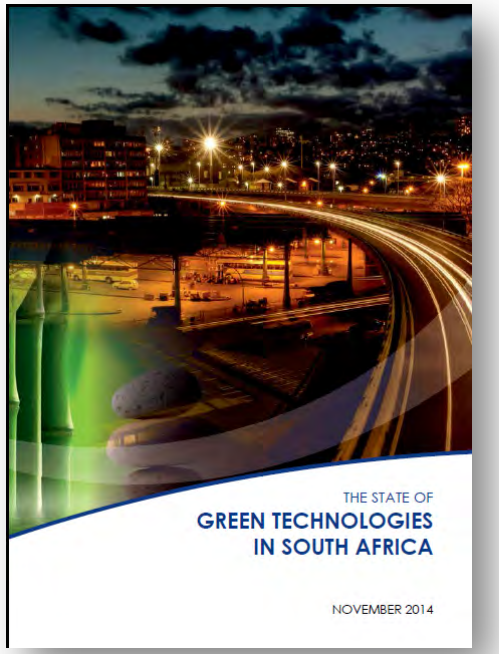
Green economy is one of 10 jobs drivers

Government, business and labour

Department of Science and Technology (DST): Role in the Transition (Ten Year Innovation Plan)







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Energy Grand Challenge

- The race is on for safe, clean, affordable and reliable energy supply and South Africa must meet its medium – term energy supply requirements while innovating for the long term in clean coal technologies, nuclear energy, renewable energy and the promise of a hydrogen economy.
- Progress towards a knowledge – based economy will be driven by four elements:
  - Increased knowledge generation and exploitation
  - Human capital development
  - Knowledge infrastructure
  - Enablers to address the “innovation chasm” between research results and socioeconomic outcomes
- Flagship Programmes
  - Hydrogen South Africa
  - Renewable Energy Hub and Spokes
  - Energy Storage Research Development and Innovation Initiative
  - Advanced Biofuels Programme
  - Centre for Energy Systems Analysis and Research
  - Energy Efficiency and Demand Side Management Hub

Partnerships based on Market Pull

Public Private Partnerships (PPPs)

Nedbank

Solar Turtle

- Solar turtle used to provide access to banking services in a rual area in Eastern Cape.

Impala Platinum

Fuel cells in material handling equipment

- Fuel cell powered forklift
- Hydrogen refueling infrastructure
- Increase in productivity due to reduced refueling time
- Improved air quality

South African Post Office

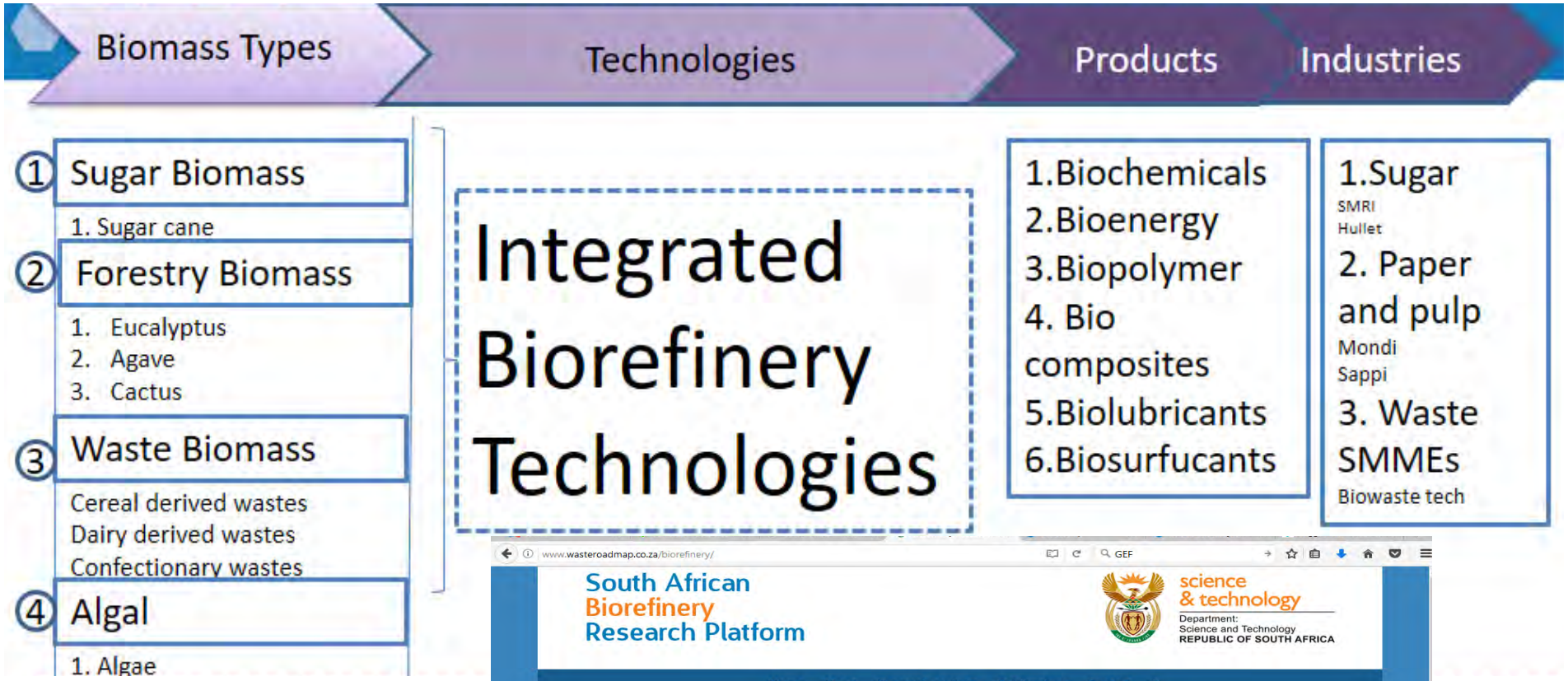
Fuel cells as range extenders in Electric mobility

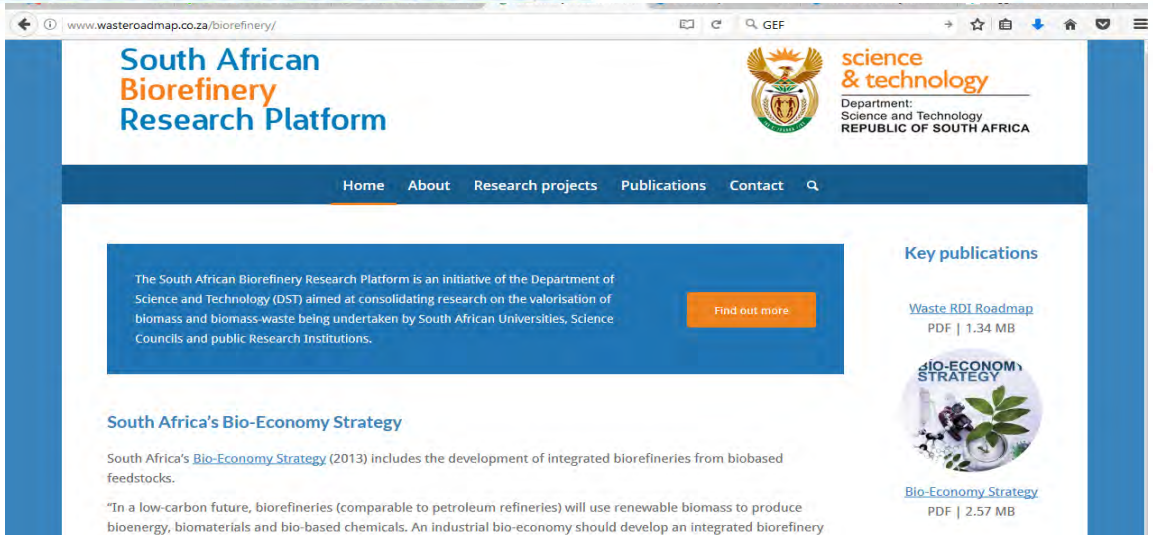
- Limited range of electric scooters impacting on productivity
- Fuel cells will be used to extend the driving range

Biomaterials and Biochemicals Feasibility studies

- The Bioeconomy Strategy calls for the establishment of of biomass transformation value chains
- The DST commissioned two studies to explore the biochemical and biomaterial markets based on biomass feedstocks:
  - Biomaterials Techno-Economic Feasibility Study
  - Biochemicals Feasibility Study
- Recommendations from the two studies:
  1. Need to diversify biomass feedstocks
  2. Adoption of the value chain approach in the implementation of bio-based programmes
  3. Establishment of biorefinery flagship programmes
  4. A shortlist of twenty potential platform biochemicals for South Africa
  5. Investment in Biorefinery infrastructure and human capital
- It is proposed that 5-year biorefinery thematic programmes be rolled out along various feedstock categories

National Biorefinery Platform - to be launched by Minister Pandor in 2018





http://www.wasteroadmap.co.za/biorefinery/

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Current RSA policies – informing Environmental Innovation

Waste RDI Roadmap

The Strategy calls for informed decision-making supported by scientific research. Further to this the document indicates the allocation of funds to support research

National Waste Management Strategy – 2011, DEA

2011

Water RDI Roadmap

Ch14: Research & Innovation

- National Plan
- Improve utilization of outputs
- Clarify roles & mandates of participants in R&D in RSA

National Water Resource Strategy II – 2013, DWS

2013

SARVA

Informed decision-making and planning underpinned by research, knowledge generation and information management

Environmental Services - Adaptation

Technology, research, development and innovation. Promote research and innovation partnerships for climate change resilience

National Climate Change Response White Paper – 2011, DEA

2011

Global Change Grand Challenge

The Global Change Research Plan identifies four major cross-cutting knowledge challenges and 18 key research themes.

SARVA

Environmental Services

Waste RDI Roadmap

Water RDI Roadmap

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Water RDI Roadmap

Water secured for the Future and a highly competitive SA Water RDI Community

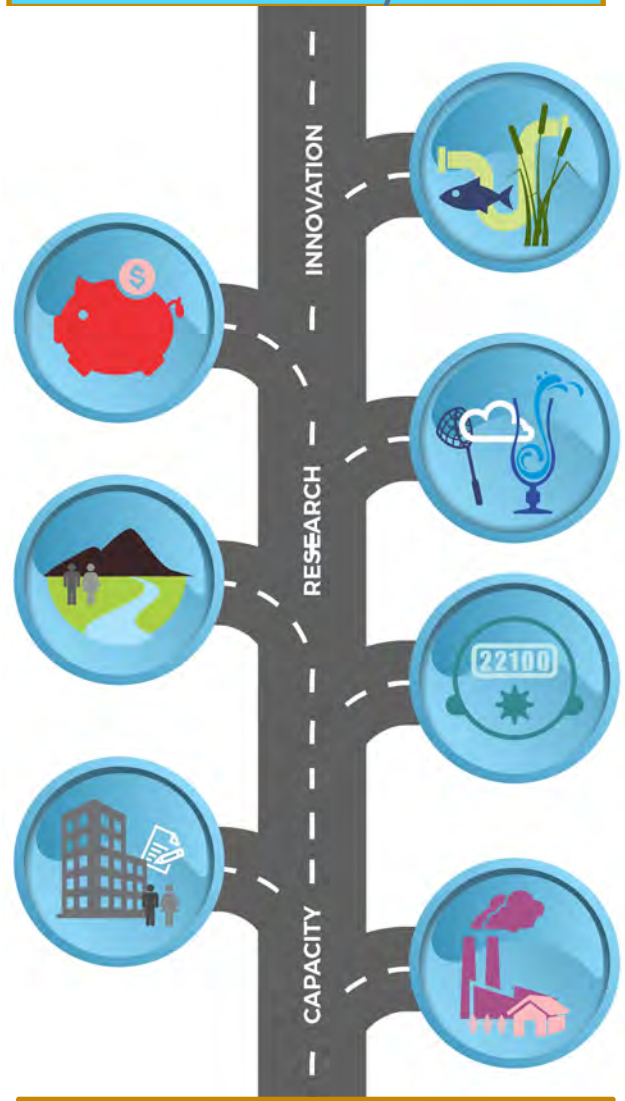
Identify and Address Knowledge Gaps (Applied & Action Research)

De-risk new innovations

Research into policy

Accelerating solutions: More products and services

Skilled people for jobs of the future



Better coordinated RDI Community & Partnerships

Increase national spend on water RDI

National savings through targeted investments

Water industry - future

Secure a sustainable environment

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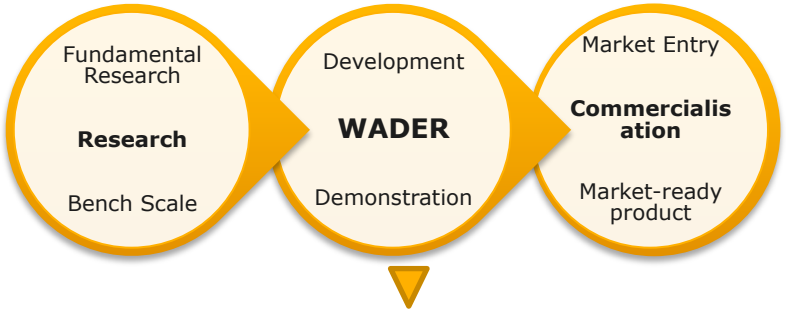
WATER TECHNOLOGIES DEMONSTRATION PROGRAMME | A KEYSTONE FOR WATER TECHNOLOGY INNOVATION



Taking technologies out of the laboratory and proving them in real-world test situations

Scanning public sector R&D and private sector
Match-making
Demonstrators
Central Repository

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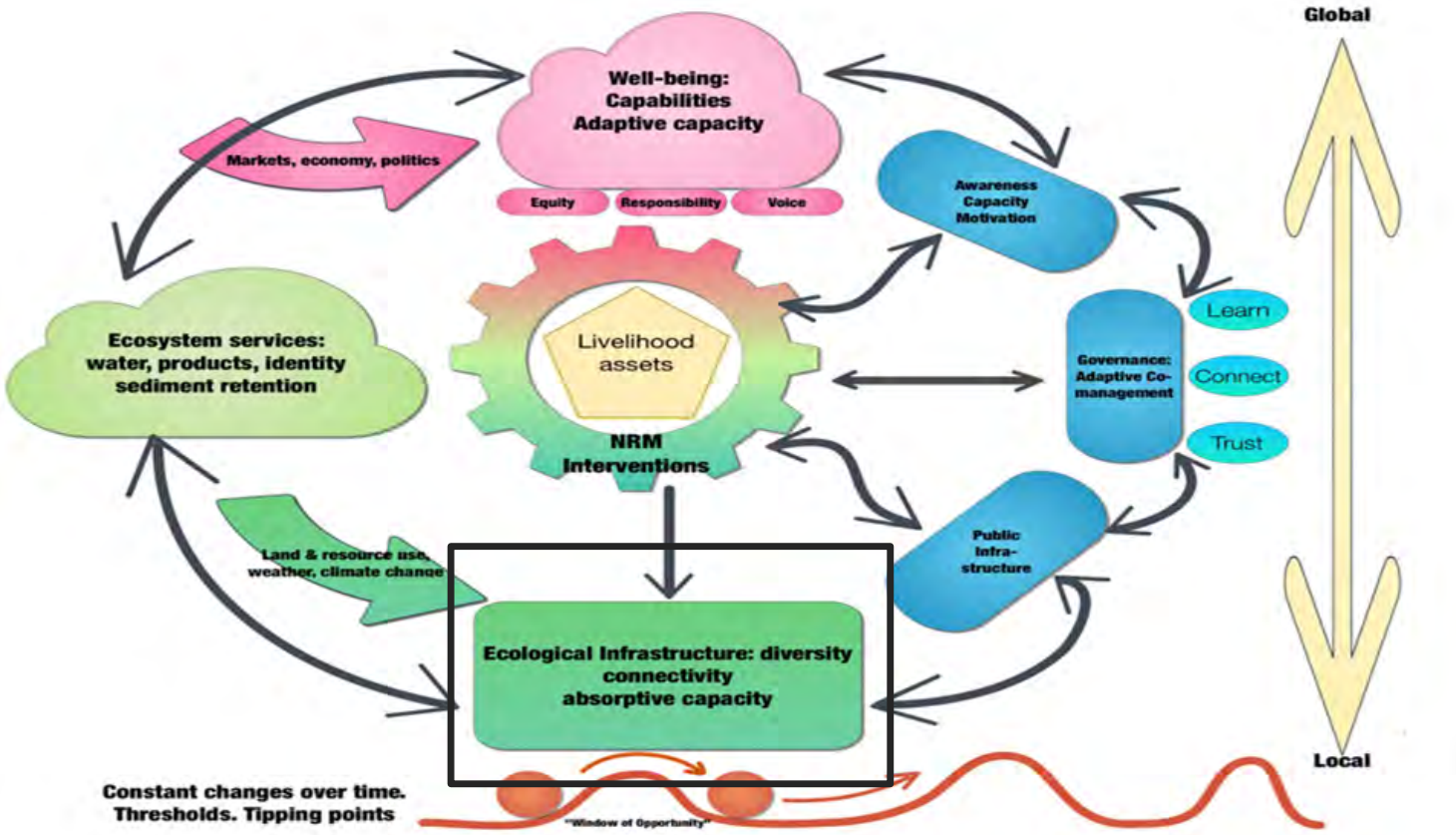
Waste RDI Roadmap

www.wasteroadmap.co.za

Environmental Services – Partnership with DEA NRM

- Model for catchment management
  - Look at impact of land management practices on water resources.



Concluding Remarks

- Green Jobs:
  - The implementation of the Ten Year Innovation Plan will help South Africa to increase the size of the Knowledge Economy.
  - New products will have to be locally manufactured and this will create new jobs in the Green Economy.
  - DST funds Masters and PhD students however there is a need for technical employees at all levels. There is a need to ensure that TVETs and UoT are also training technical personnel for the emerging sectors.


Thank you...