

COMBATting MARINE WASTE - CHALLENGES AND OPPORTUNITIES

Solutions and Opportunities: The Waste RDI Roadmap for South Africa



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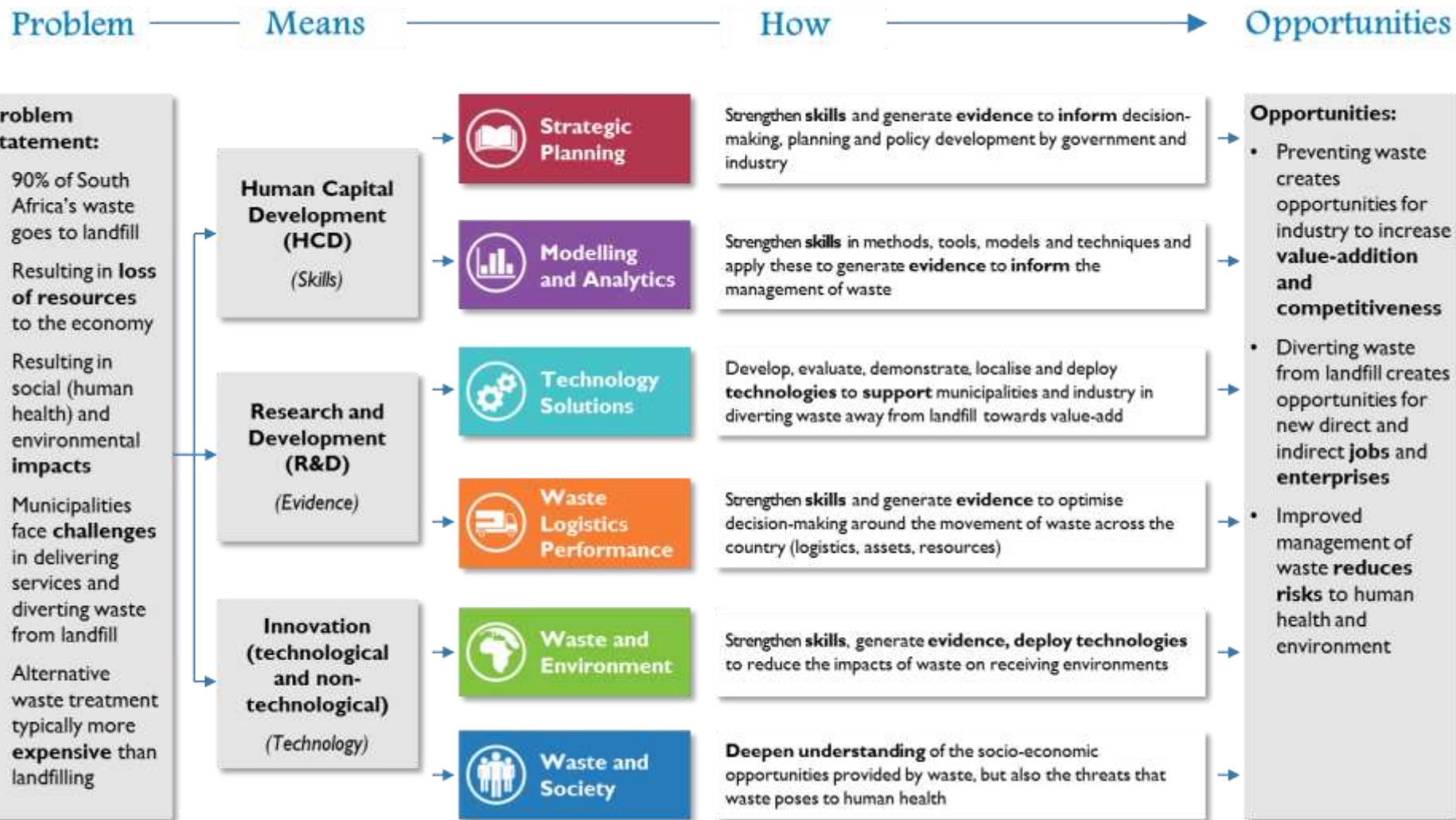
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Introduction to 10Yr Waste Roadmap

- The Department of Science and Technology (DST)
 - Published South Africa's 10-Year Waste Research Development and Innovation (RDI) Roadmap in 2014
 - Aimed at providing **strategic direction** to guide South Africa's **portfolio investment**, for the next 10 years, in **six identified clusters** of waste and secondary resources research, development and innovation activity
 - That would lead to (1) More effective **decision-making**, (2) Faster insertion of **context-appropriate Technology**, (3) **Export** of Know-How and Technology, (4) Strengthened **RDI capability** and capacity
 - An ultimately supporting South Africa's implementation of the National Waste Management Strategy and the waste hierarchy

Introduction to 10Yr Waste Roadmap



Introduction to 10Yr Waste Roadmap



- **Municipal Solid Waste**

e.g. paper and packaging, C&D waste, OFMSW, residual waste



- **Waste Plastic**

e.g. pre- and post-consumer plastics (all)



- **Waste tyres**



- **Electronic Waste (WEEE)**

e.g. all fractions, metal, plastic, glass, etc.



- **Organic Waste**

e.g. industrial biomass, OFMSW, food waste

Maximising the diversion of waste away from landfill **towards value-adding opportunities**, including **prevention** of waste and the optimised **extraction of value** from reuse, recycling and recovery, in order to create significant social, economic, and environmental **benefit** for South Africa.

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www.wasteroadmap.co.za

The challenges facing Africa wrt waste



- Globally –
 - Over 80% of marine plastic from **mismanagement of waste inland**
 - Of that, 75% comes from uncollected waste (poor city cleansing)
- In Africa –
 - Five (5) of the top 20 countries ranked by mass of mismanaged plastic waste (in 2010) were in Africa (Egypt, Nigeria, South Africa, Algeria, Morocco)
 - Limited city cleansing and waste collection services, uncontrolled dumping, growing population, and growing consumption creates significant risk of marine pollution



DST Waste RDI Roadmap **partnerships** with business, governments and academia to raise awareness and generate evidence

Allsopp, et al. (2006)
Ocean Conservancy (2015)
Jambeck et al. (2015)



The challenges facing Africa wrt waste



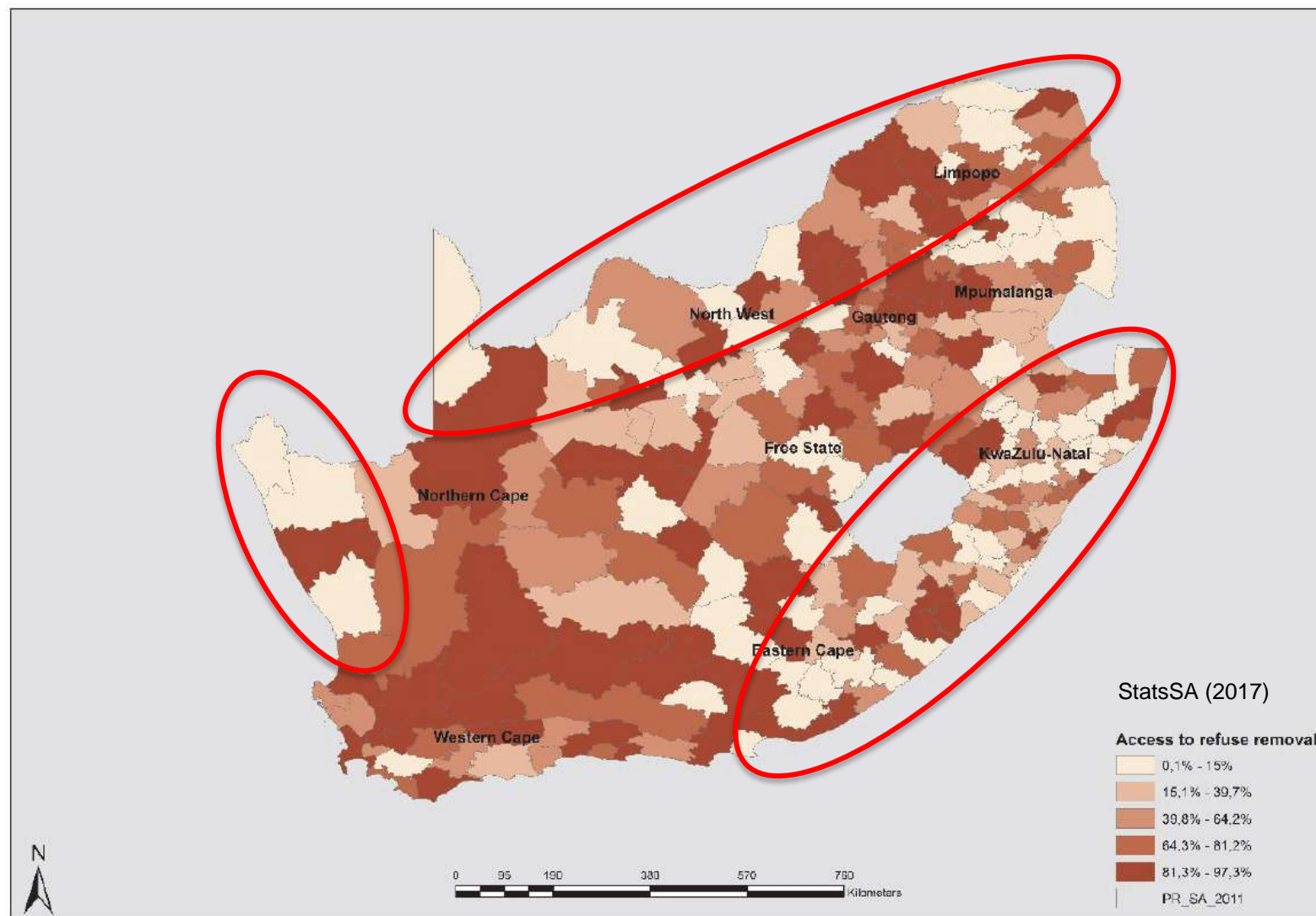
- In Africa –
 - The average waste collection coverage is only 55%
 - More than 50% of the collected waste is disposed of to **uncontrolled dump sites** (19 of world's biggest dumpsites in Africa)



- In South Africa –
 - Collection
 - 30,1% of households lack any kind of refuse facilities (2016)
 - Only 12,6% of households in rural municipalities received removal services (75,2% of households used own dump)
 - Use of own dumps (or no facilities) highest in Limpopo (71,8%), Mpumalanga (50,5%), Eastern Cape (50.3%) and KwaZulu-Natal (42,9%) (*all of which have major rivers draining to Indian Ocean*)
 - Disposal
 - Illegal dumping of waste is prevalent across SA cities and towns
 - 90% of all waste generated goes to landfill (often dumpsites)

The challenges facing Africa wrt waste

Map 7.1: Percentage of households whose refuse were removed by local municipalities, 2016







ISWA Marine Task Force Report

- Marine litter is a challenge of **planetary scale** and implications, with plastic particles having been detected in all of the world's oceans
- One of the main reasons for **marine pollution** is that over two (2) billion people globally don't have access to adequate **municipal waste collection services**

<http://marinelitter.iswa.org/marine-task-force-report-2017/>



ISWA Marine Task Force Report

- Proposed short-term solutions to reduce the leakage of waste from inland to our oceans –
 - Prevent **uncontrolled dumping** by providing **collection services** for all
 - Prevent **littering** and stop fly-tipping
 - **Close dumpsites** and provide waste treatment and engineered waste disposal facilities for all communities
 - Work with the **maritime sector**
- How the waste sector can contribute to **solving marine litter**?
 - Invest in **waste infrastructure** in global south
 - Invest in **circular economy** in global north

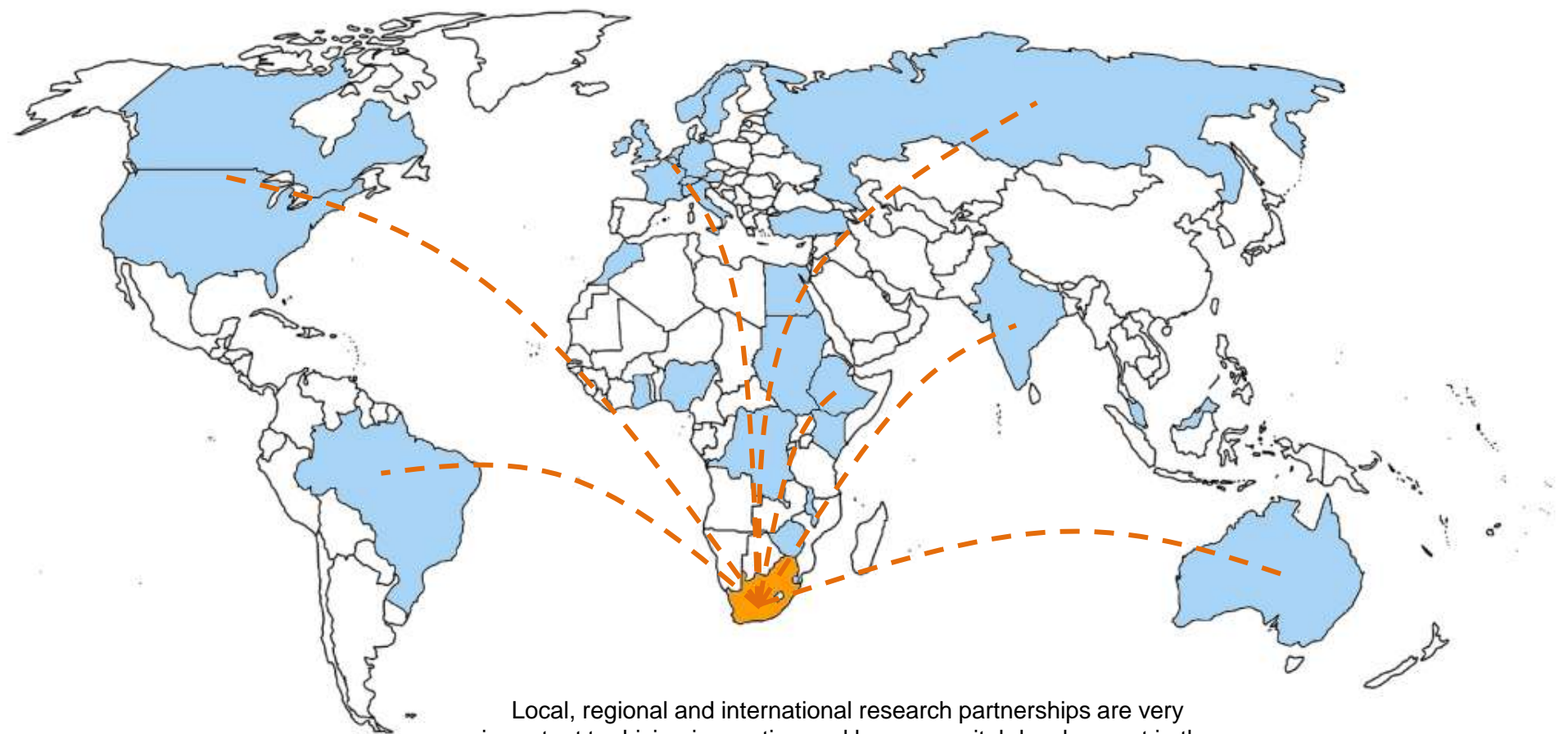
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ISWA Assessment of Global Challenges

- Challenges facing developed and developing countries –
 - Developed – waste **prevention**, increasing **recycling** rates
 - Developing – **sanitary disposal** of waste



Partnerships for Waste RDI



Local, regional and international research partnerships are very important to driving innovation and human capital development in the South African waste sector

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