



Ministry of Foreign Affairs

South Africa: An emerging market for Waste and Circular Economy

Commissioned by the Netherlands Enterprise Agency

*>> Sustainable. Agricultural. Innovative.
International.*

South Africa: An emerging market for Waste and Circular Economy



Highlights of the 24-28 July 2023 exploratory market assessment

Slide	Contents
3	Background and project team
4	The logical framework
5	South Africa in a glimpse
6	General situation on SWM and CE in South Africa
7	Doing business in South Africa
8-10	Dutch partners active in export of SWM and CE
11	How do we focus?
12	Focus 1: City cleaning and waste collection
13	Focus 2: Organic waste treatment
14	Focus 3: Plastics recycling
15	Focus 4: Construction and demolition waste
16	Focus 5: Sustainable landfilling
17	Other opportunities
18-19	What can we do?
20-21	The trade mission
22	References

Background and project team

- This exploratory market assessment was carried out during 24-28 July 2023 by Mr. Hans Breukelman of BreAd BV and Mr. Bert Keesman of MetaSus.
- The assessment was done at the request of Nadia van de Weem and Hans van Ek of the Netherlands Enterprise Agency (RVO)
- The team was supported by Mr. Chris Whyte of the African Circular Economy Network and Messrs. Don and Troy Govender of the Lindon Corporation
- Strong support was also received from the Embassy of the Kingdom of the Netherlands in Pretoria and the Consulate General in Cape Town
- The results are meant to inform Dutch entrepreneurs in Waste/CE in the preparatory phase of the Oct 16-20 Trade Mission To Cape Town and Johannesburg/Pretoria
- For more in-depth information, an additional report on opportunities in the circular economy in South Africa will be published by ACEN and the Lindon Corporation



Nadia van de Weem
RVO



Hans van Ek
RVO



Don
Govender
Lindon Corp



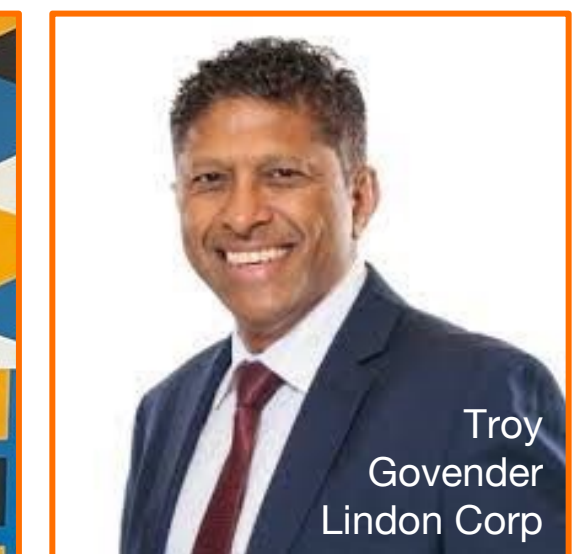
Some quick impressions of results were reported (in Dutch) on LinkedIn [Durban – Cape Town – Johannesburg – Pretoria](#)



With Ryan Johnson, Mapaseka Setlhodi and Johan van de Hoef at Dutch consulate in Cape Town



Hans Breukelman, Marlies den Boer, Michael Mackloet and Bert Keesman at the Dutch Embassy in Pretoria



Troy
Govender
Lindon Corp



Chris Whyte
ACEN

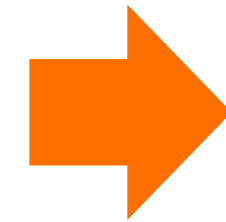
Slide 4-6

South African
situation and
opportunities



Dutch
businesses and
institutions

Slide 7-9



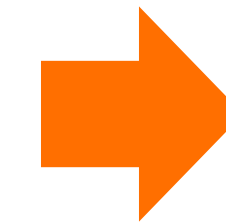
How do we
focus?

Slide 10



Where do
we match?

Slide 11-16

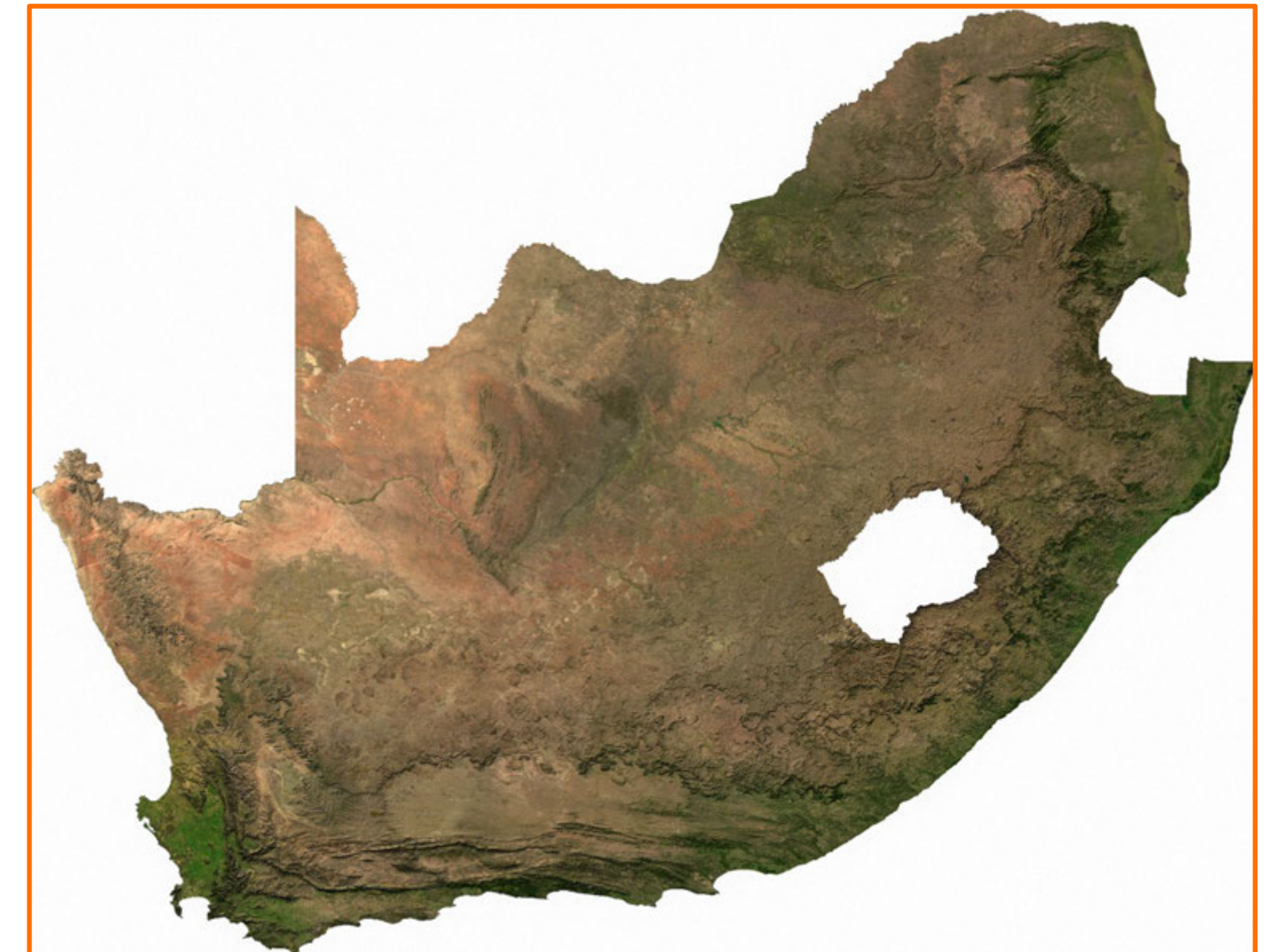


What can
we do?

Slide 17-21

South Africa in a glimpse

- South Africa is 29 times larger than the Netherlands
- The country's population size is 60.5 million
- Around 65% of South Africans live in urban areas.
- It is the 6th country in Africa in terms of population
- And the 3rd country in Africa in terms of GDP
- Still, SA has two faces; well developed cities but poor informal settlements and rural areas
- A Circular Economy (CE) reference for many other countries in Sub-Saharan Africa
- Biggest cities Cape Town (3.4 million), Durban (3.1 million), Johannesburg (5.6 million), Soweto (3 million) and Pretoria (1.6 million)
- The apartheid regime was repealed in 1991 and the first democratic elections took place in 1994
- Next general elections: 2024
- Trade freedom: #116 in 2023 index of the Heritage Foundation
- UNDP Education index: #109



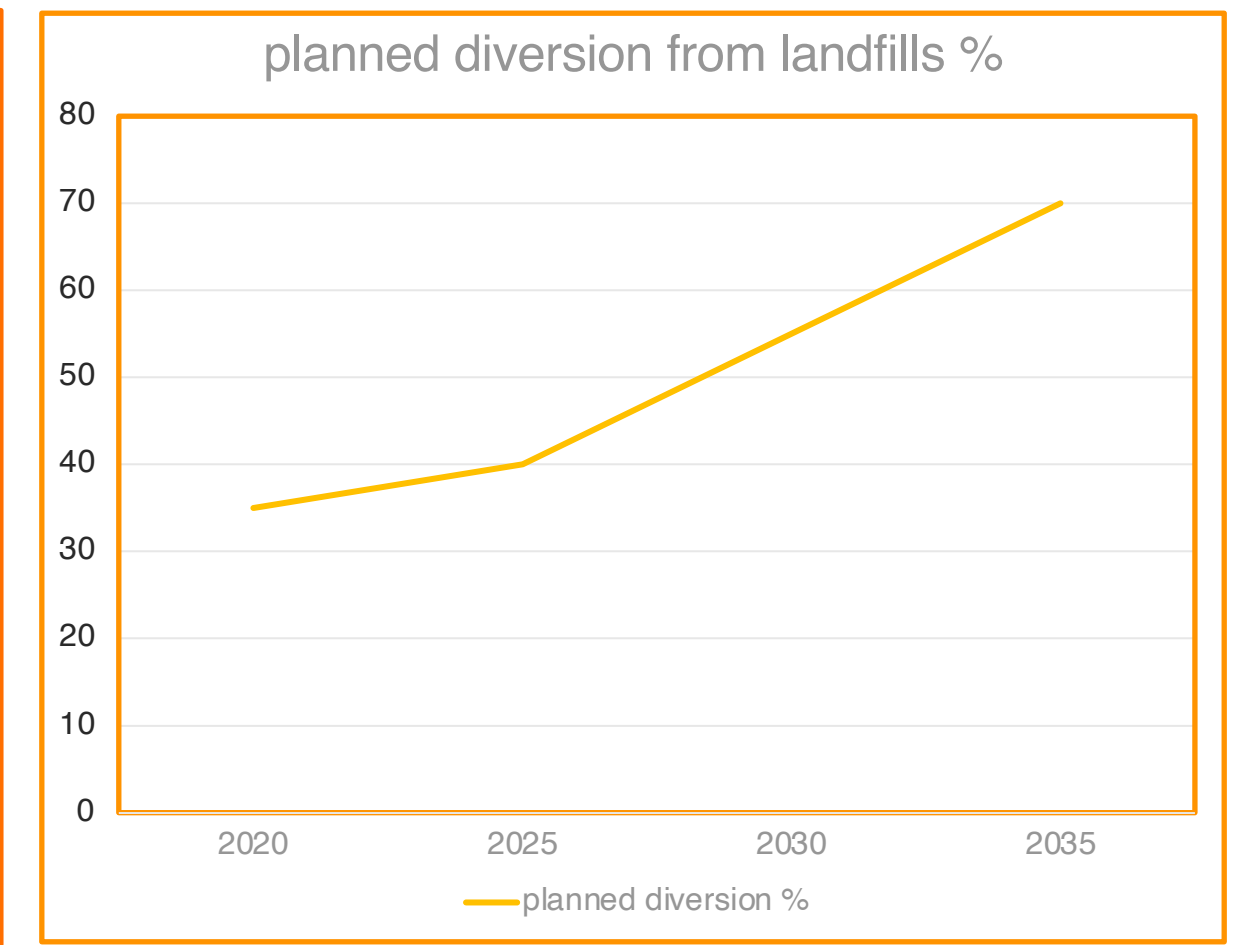
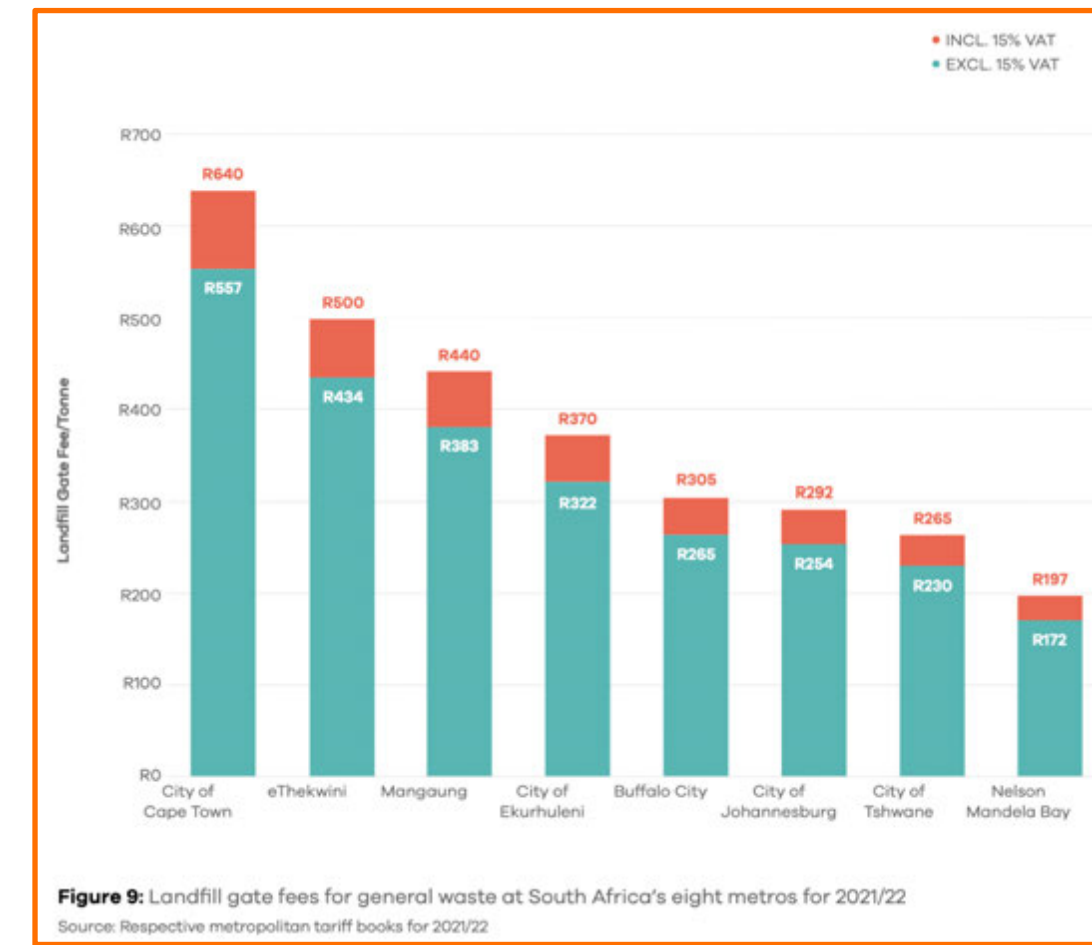
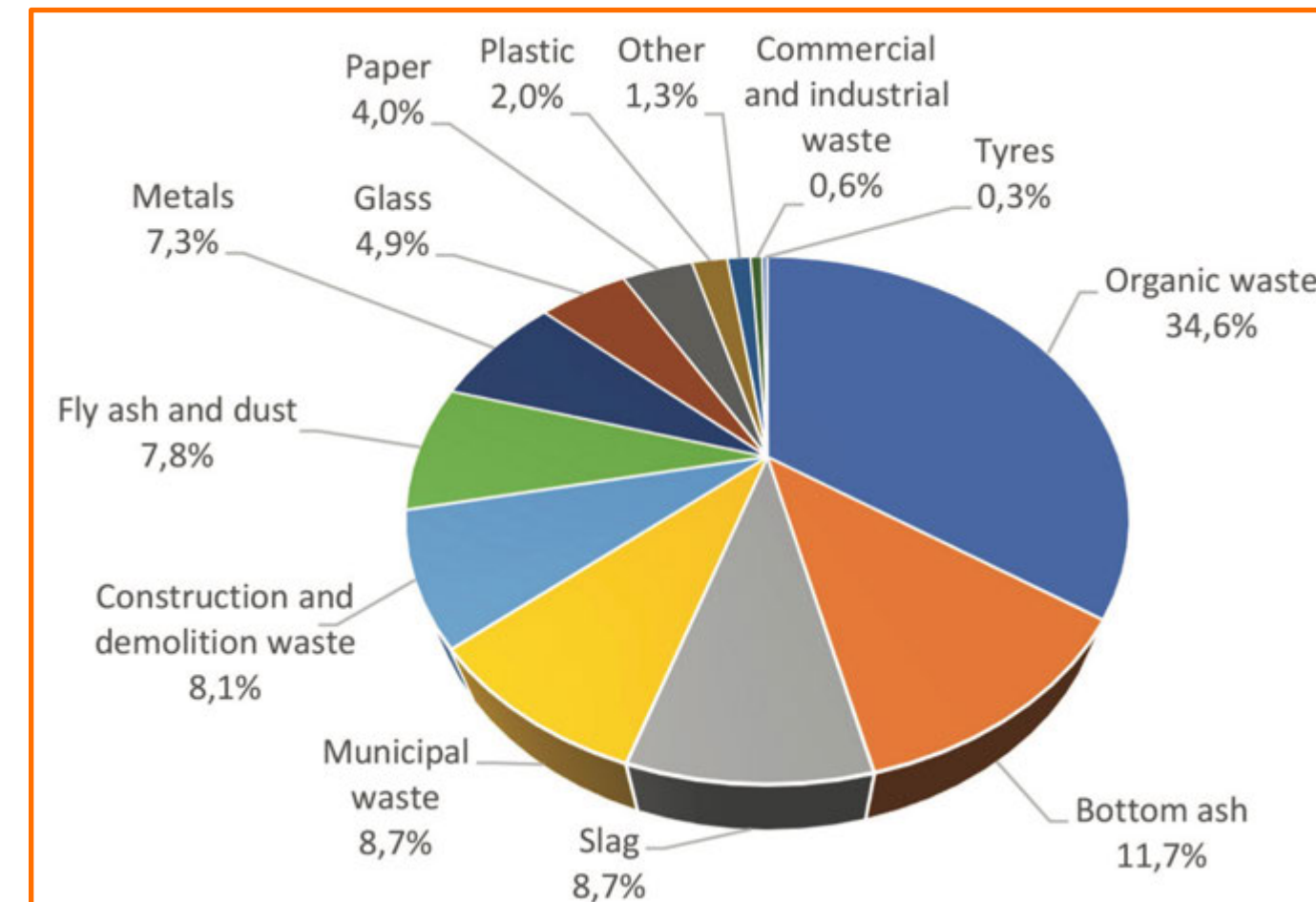
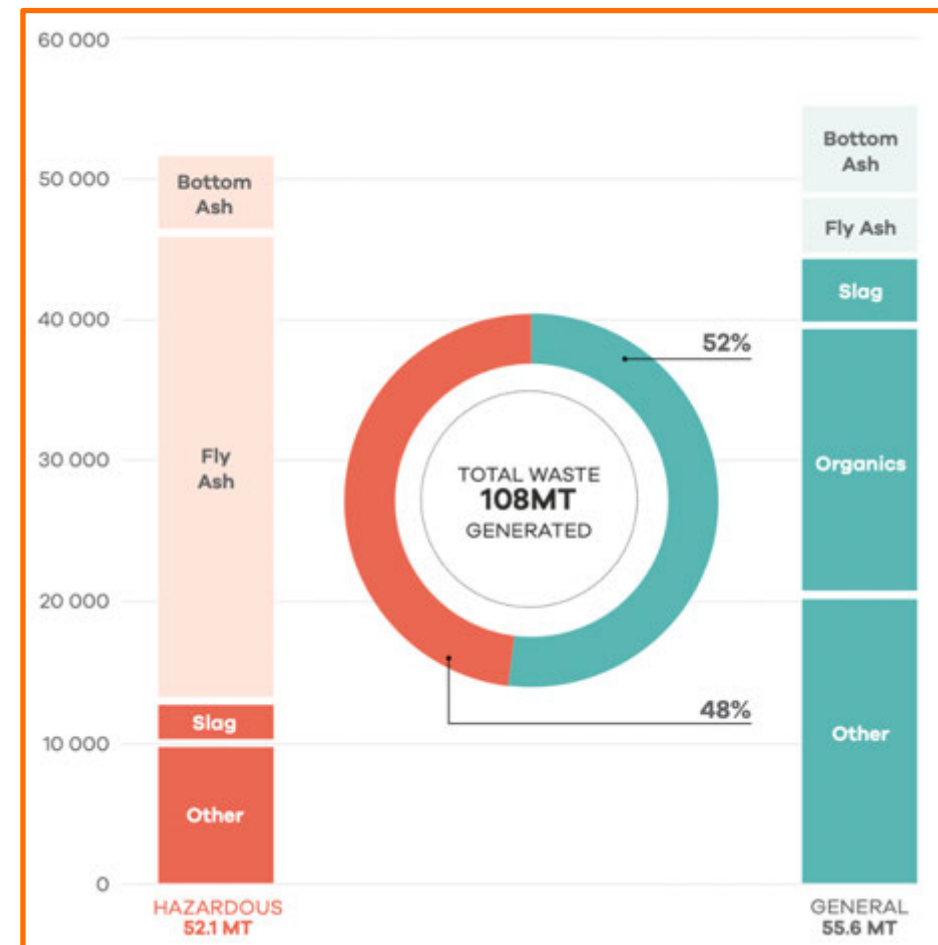
The International Solid Waste Association will hold its annual congress in Cape Town in 2024!

ISWA World Congress 2024

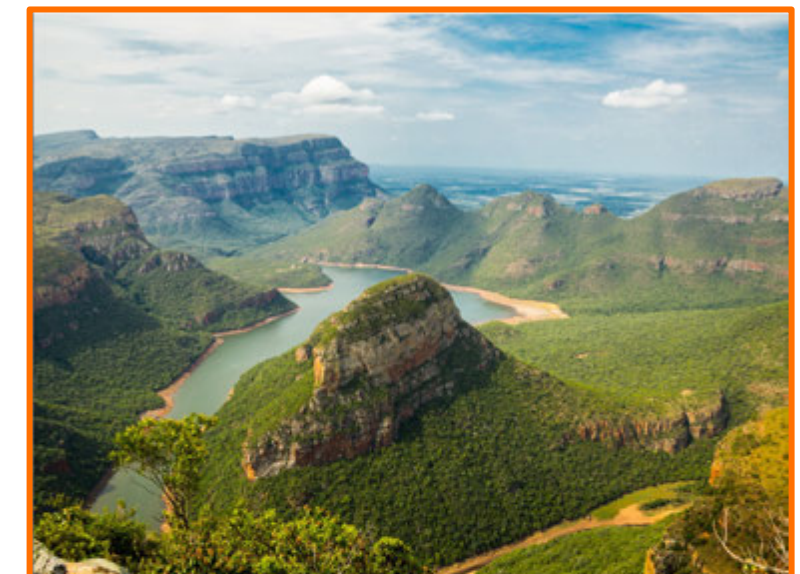
ISWA World Congress
Dates: TBD
Venue: Cape Town, [Cape Town, South Africa](#)

General situation on SWM and CE in South Africa^{1, 2, 3, 4, 5}

- Good legal framework for waste management, Extended Producer Responsibility (EPR) and carbon credits (see references in foot notes)
- Nevertheless, most experts and reports observe a general weakness in the governance and enforcement of this framework
- The Department of Forestry, Fisheries and Environment DFFE is the national overarching department for all waste topics.
- South Africa (SA) generates ~110 Mtons of waste/year of which 60 Mtons (~3 times more than NL) is general waste and the rest is industrial waste
- 35% of this 110 Mtons of waste is organic (from households and agriculture). 28% is residues from energy production and metallurgy.
- Of this general waste, 35% is recycled and the rest is landfilled (35 Mtons)
- West Cape (WC) generates 7,7 Mtons of waste per year of which 2,4 Mtons is Municipal Solid Waste. Rest is Construction and Demolition Waste (C&DW), commercial and agricultural waste.
- Landfill tipping fees are at a good level, meaning they suggest an adequate level for cost coverage of sanitary landfills (see figure below)
- Waste-diversion-from-landfill policy: see figure below, right hand side.
- Laws and policies demand a full coverage of waste services to all citizens but this is far from reality (see slide 11)
- The market shows a strong position of large (Solid Waste Management)SWM companies such as Averda, Wasteplan, WasteMart and Interwaste
- Electricity market is planned to be more liberalized with easier access to the national grid for new power suppliers



- Businesses can be started at selected banks within 24 hrs. There's good legal protection of company ownership and of workers rights
- The country is an upper middle income country where 73% of all households are middle-income, 16% are low-income and 11% are high-income.
- GDP per capita (2022) is at US\$ 6,776.50/year (right after Thailand and Albania), growing at 2% per year
- Vast differences: Only 6.4 million (a little over 10% of the population) submitted income tax returns in 2021
- The country's GDP is mainly produced in the Province Gauteng with main cities Johannesburg and Pretoria (35%), followed by Kwazulu Natal with its main city Durban (16%) and Western Cape with main city Cape Town (14%).
- The use of electricity comes at a cost of between 1.0-1.7 Rand per kWh (€ 0,05-0,08). Prices increased with an average 15% per year over the last 10 years. A common phenomenon nowadays is "load shedding" (switching off parts of the electric grid in controlled manner)
- Minimum wage is at ~25 Rand per hour (€1,3)
- The corporate tax rate is at 28%. A bracketed income tax system is used with a maximum at 45%. VAT is at 15%.
- Broad-Based Black Economic Empowerment (B-BBEE) is a policy meant to enhance the economic participation of black people in the South African economy
- SA is a member of the African Continental Free Trade Area and the Southern Africa Customers Union
- The country has a Trade, Development and Cooperation Agreement with the EU
- The country shows a lack in skilled and semi-skilled workers.
- There is a strong and enduring concern about corruption and violent crime in the country.
- Trade and investment support organisations and Green funding options can be found by clicking the figures below.



Dutch partners active in export of SWM and CE

What are we offering?

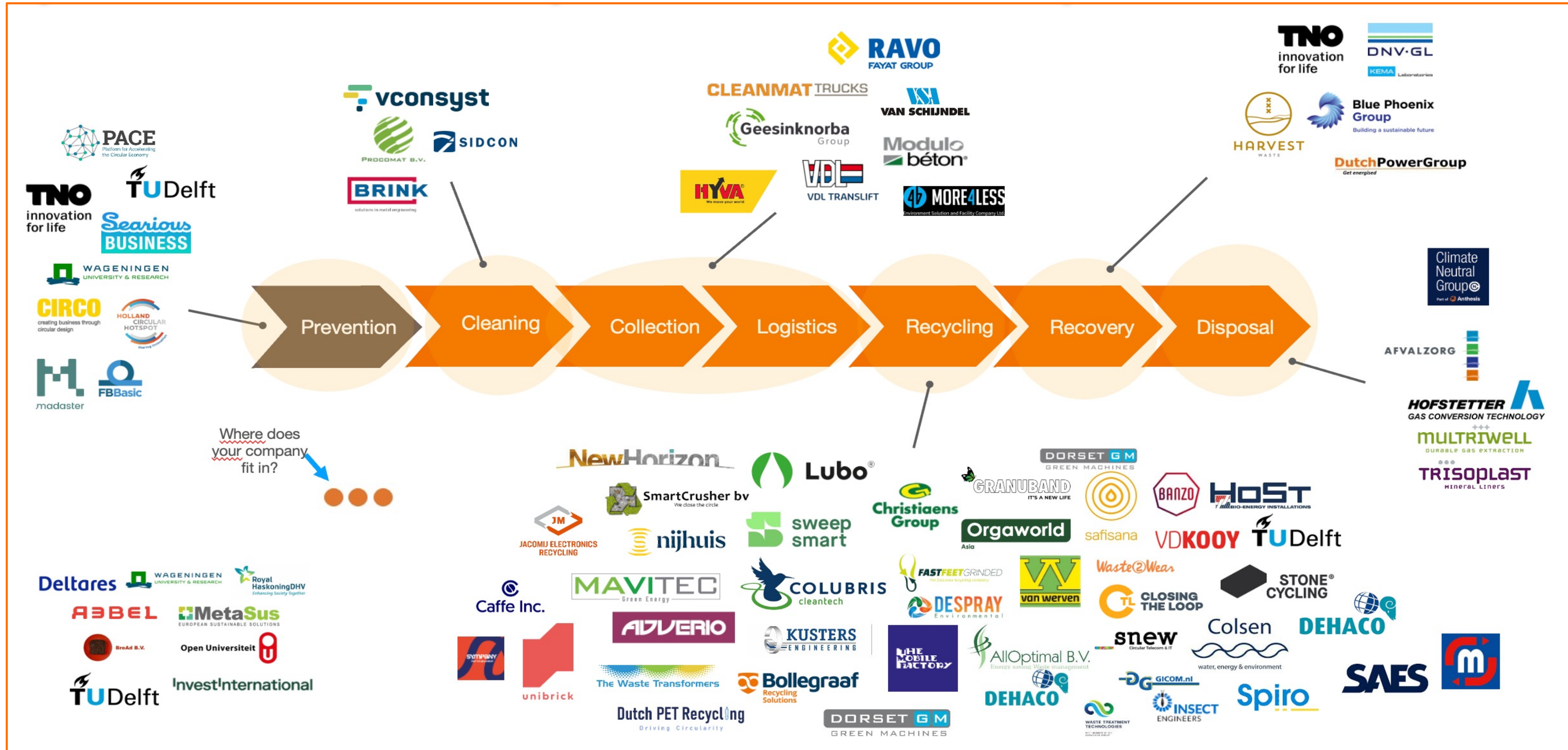
And more!

The collage includes logos for the following entities:

- DORSET GM GREEN MACHINES
- SAES
- BANZO
- WASTE TREATMENT TECHNOLOGIES
- Colsen
- Caffe Inc.
- HOST
- SYMPHONY
- water, energy & environment
- GRANUBAND NEW LIFE
- STONE CYCLING
- The Waste Transformers
- COLUBRIS cleantech
- Waste@Wear
- snew Circular Telecom & IT
- GD GICOM.nl
- VDI TRANSLIFT
- Geesinknorba Group
- DutchPowerGroup Get energised
- vconsyst
- HYVA
- SmartCrusher bv We close the circle
- MULTRIWELL BUBBLE GAS EXTRACTION
- nijhuis
- ADVERIO
- van werven
- unibrick
- Mind the Zebra bv
- DNV-GL
- CIRCO creating business through circular design
- KEMA Laboratories
- CLEANMAT TRUCK!
- DEHACO
- FASTFEETGRINDED
- Blue Phoe Group Building a sustainable future
- INSECT ENGINEERS
- Dutch PET Recycling Driving Circularity
- RAVO FAYAT GROUP
- HOFSTETTER GAS CONVERSION TECHNOLOGY
- Spiro
- Harvest
- sweep smart
- TU Delft
- Deltares
- FBBasic
- PACE Platform for Accelerating the Circular Economy
- TRISOPLAST MINERAL LINERS
- AFVALZORG
- MetaSus EUROPEAN SUSTAINABLE SOLUTIONS
- madaster
- SIDCON
- Lubo
- MAVITEC Green Energy
- NewHorizon
- Gemeente Rotterdam
- WAGENINGEN UNIVERSITY & RESEARCH
- Climate Neutral Group Part of Anthesis
- JACOBI ELECTRONICS RECYCLING
- DESPRAY Environmental
- KUSTERS ENGINEERING
- VAN SCHIJNDEL
- Orgaworld Asia
- Open Universiteit
- TNO innovation for life
- Royal HaskoningDHV Enhancing Society Together
- VDKOOY
- Bollegraaf Recycling Solutions
- BRINK solutions in metal engineering
- WAGENINGEN UNIVERSITY & RESEARCH
- AFABEL BreAd B.V.
- InvestInternational
- DORSET GM GREEN MACHINES
- PROCOMAT B.V.
- HOLLAND CIRCULAR HOTSPOT
- More4Less Environment Solution and Facility Company Ltd.

Cooperation Knowledge Consultancy Services Hardware Technology Operations

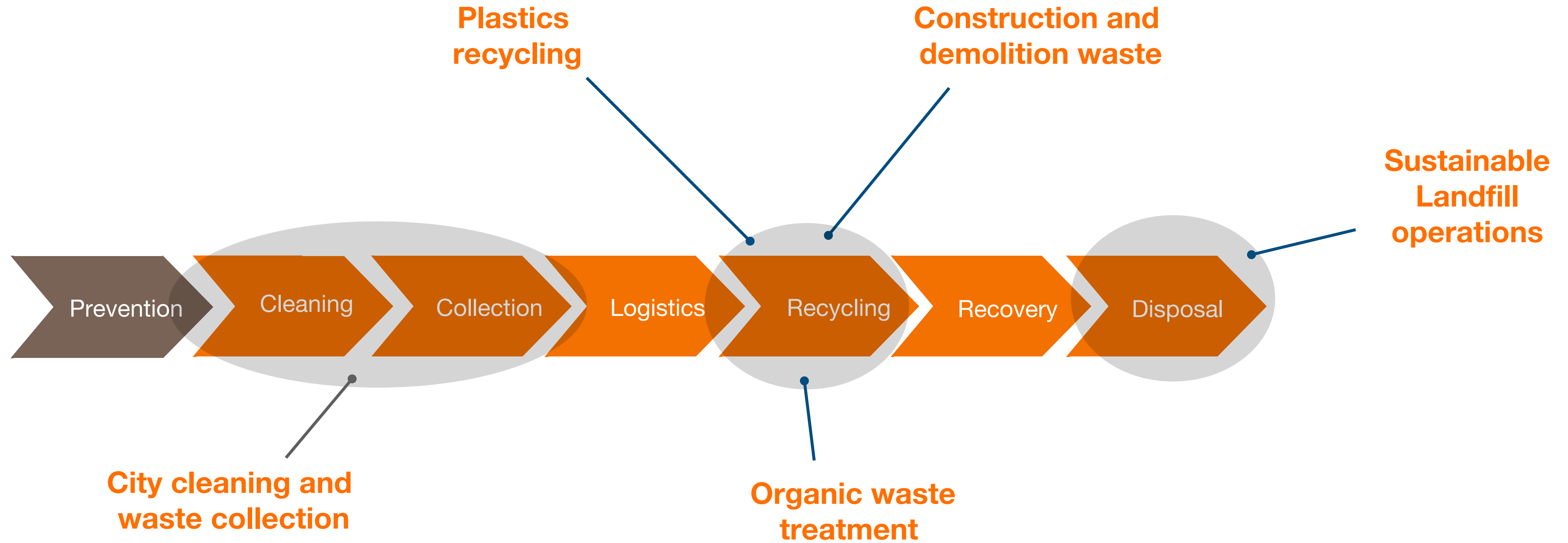
Where in the **value chain**?



Where in the **development stages**?



How do we focus?



Focus 1: City cleaning and waste collection

Situation in South Africa

- Cities (centers) look tidy and well kept. Rural areas/settlements are often not serviced
- 65% of SA households have access to proper waste collection services
- Services are often sourced out for only 2-3 years through procurement procedures
- The waste collection tariff in West Cape (WC) is at 180 Rand (€9) per week (for one collection of one bin)
- Separate collection is not practiced, apart from some small urban projects
- Cape Town plans to introduce separate collection, municipality-wide
- Some 25 transfer stations are used nationally, more are planned
- Bags, bins, street containers .. all systems are in use
- Drop-off points (sometimes mini MRF's) are a common part of infrastructure
- 60-90.000 informal waste pickers are active in collecting recyclables nationally
- The collection market is growing; both in terms of volume and quality

Opportunities

- The market for vehicles already has a good basis for replacement of older equipment
- HWRCs and drop off centers can be an interesting market ([here's an impression](#))
- Interest in waste transfer/logistics because of inclusion of the rural areas
- Separate collection will receive more attention, especially in the Western Cape.

Matches

- Good opportunities for all relevant Dutch businesses, from high-end to lower-end (including second hand) equipment

Next steps

- Establish links with big waste companies: [Averda](#), [Wasteplan](#), [WasteMart](#) and [Interwaste](#)
- Design a basic waste system for rural SA and pilot this (including waste pickers)
- Hook on to pilots for separate collection in big cities (starting with Cape Town)
- Consider G2G exchange on expertise for introducing separate waste collection



Focus 2: Organic waste treatment

Situation in South Africa

- SA generates some 30 Mtons of organic waste per year. 11% of municipal waste is food waste
- Focus on composting/digestion/biofuels of organic waste/biomass with a good legal framework ^{5,6}.
- Good connection to Carbon Credits systems
- West Cape (WC) plans 70% diversion of organic waste from landfills by 2027 and Cape Town (CT) plans city wide introduction of separate collection
- Acceptance of Sewage Sludge and slaughterhouse waste at landfills is more and more restricted; the aim is 100% diversion from landfills. Treatment of faecal sludge is a prominent need around rural areas
- There's good Black Soldier Fly (BSF) knowledge and experience in the country
- Active players in this market are Green Create, Bio2Watt, SustainPower and Okran38
- Well developed supportive associations ORASA, SABIA, FERTASA and SAMIRO
- Developments in torrefaction of large volumes of bush encroachments and use of Napier grass

Opportunities

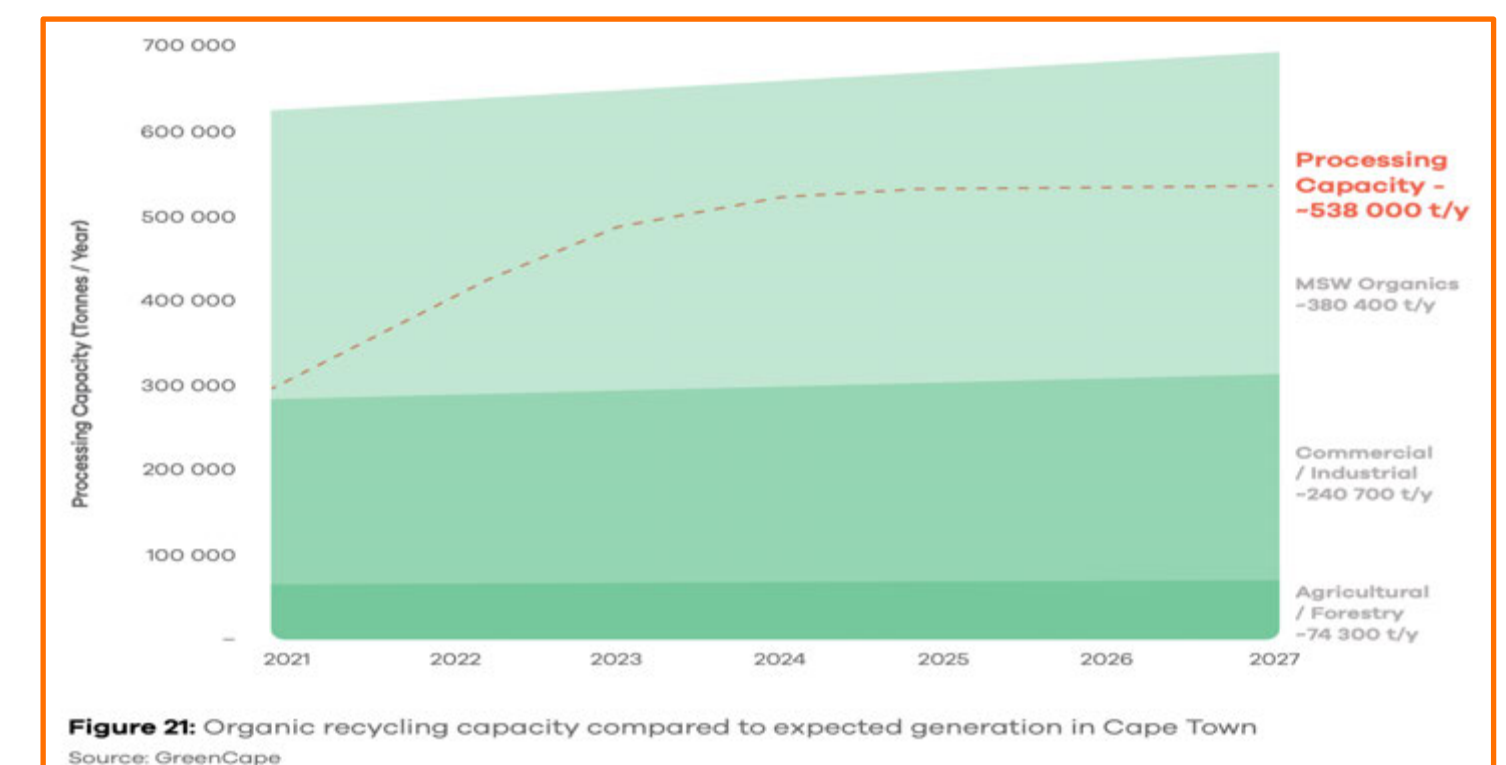
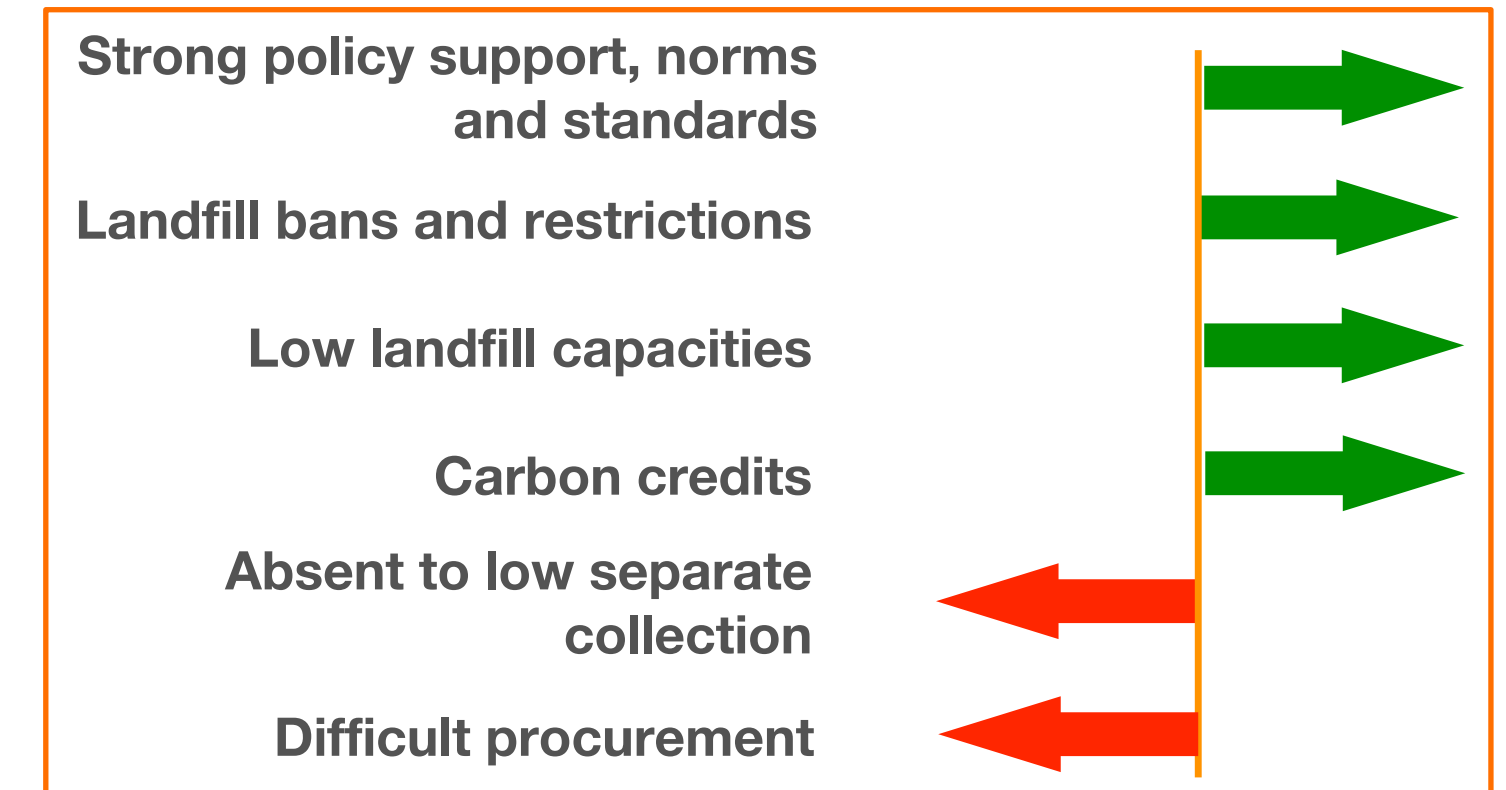
- Organic waste processing is clearly a priority in South Africa. In the Western Cape province, organic material is banned from landfill in 2027, other regions will follow
- The organic waste processing sector is well advanced in terms of companies and sector organizations, creating higher-end and reciprocal business opportunities
- Good opportunities for treatment of bulk organic waste and specialties such as abattoir waste and faecal sludge

Matches

- Good matches with all relevant Dutch businesses

Next steps

- Establish B2B contacts on organic waste processing in South Africa and look for joint business opportunities in South Africa (and the Netherlands?)
- Consider G2G cooperation on experiences for compost-use



Focus 3: Plastics recycling

Situation in South Africa

- SA produces 1,1 Mtons of plastic waste per year
- WC produces 250,000 tons of plastics yearly
- Plastics SA is a multi-stakeholder platform aiming at 70% plastic packaging recycled and 30% recycled content by 2025
- The plastics recycling sector is already fairly well developed; SA recycles almost 500,000 tons of plastics yearly
- There is a system of Extended Producer Responsibility for packaging in place with two PRO's: PetCo (for PET) and Polyco

Opportunities

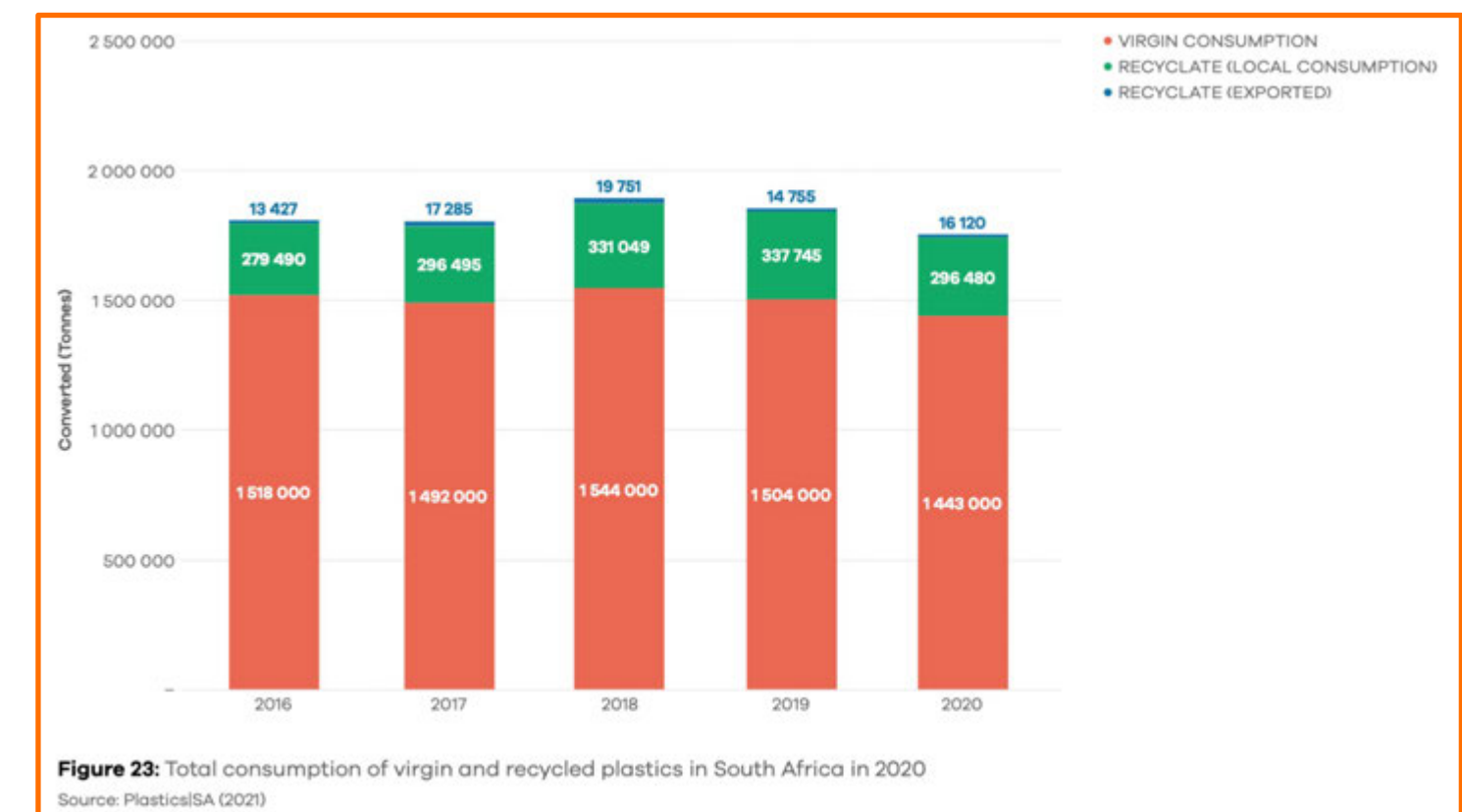
- The PRO's are under pressure from their members to do more on collection and recycling. Dutch companies with knowledge and experience in this field may find good opportunities for trade and cooperation
- Low tech (manual) sorting plants for rural areas are welcomed because of the effect on employment
- Integrating the informal recyclers into more formal schemes of waste recycling is needed
- SA companies are looking for partnerships with foreign companies in order to enhance trade (Extrupet for PET and Mpilenhle for PE/PP)

Matches

- Sourcing of recovered plastics materials can be an interesting option for multiple Dutch companies
- The same holds for possible joint ventures to process recovered plastics in South Africa

Next steps

- A more in-depth study into the quantities and qualities of waste plastics that become available in SA (PET, HDPE, LDPE, PP, ABS, PVC, PS) and possible applications
- Direct contacts between Dutch and South African businesses



Focus 4: Construction and demolition waste

Situation in South Africa

- Strong construction activities are visible throughout the urban areas of SA
- In 2018, the generated volume was estimated at only 5 Mtons per year and, in 2022, the volume for Cape Town MA was reported to be less than 2 Mtons⁷.
- Other sources mention up to 20 Mtons of C&DW⁸
- Based on international experiences: the volume could even be a factor 10 higher
- 20% of all landfilled waste is C&DW, but there are vast differences across the country
- In Durban most C&DW is being littered and dumped
- The landfill gate fee for general waste is at €15-20 per ton; much higher than recycling costs. This means there must be a good market here
- Currently only 50% of this waste is reported to be recycled

Opportunities

- Expected interest for Dutch equipment providers
- Consultancy Services to further explore and finetune the business case

Matches

- Good matches with Dutch providers of equipment and knowledge
- Expectedly there will be no interest from Dutch operators to invest in this branche in SA

Next steps

- Direct contacts with SA recycling and construction companies
- Teaming up with landfill, MRF and drop-off operators
- G2G options: Linking to CE policies through Dutch product standards, circular procurement and Green Deals with the construction sector



Material category	Construction waste estimate (Mt)	Demolition waste estimate (Mt)	Construction and demolition potential waste estimate (Mt)	Composition (%)
Timber	0.166	0.793	0.959	4.74.
Glass	0.00180	0.102	0.103	0.511
Metal	0	0.144	0.144	0.711
Concrete	1.58	6.16	7.74	38.2
Masonry	1.85	5.39	7.24	35.8
Plastic	0.00405	0.0968	0.101	0.498
Gypsum	0.0394	0.0460	0.0854	0.422
Asphalt	0.175	1.97	2.15	10.6
Other	0.211	1.51	1.72	8.49
Total	4.02	16.2	20.2	100

Focus 5: Sustainable landfilling

Situation in South Africa ^{1, 2, 3}

- Number of landfills has strongly grown over the last 20 years.
- Landfill tipping fees vary between 170-560 Rand per ton (ex VAT) equalling €9-29 per ton (see slide 4)
- Already now, these rates could therefore cover costs of good operations
- Both public and private players own and operate landfill sites
- The West Cape has already installed gas extraction on all of its landfills
- Landfill capacity is in each province below 5 years

Opportunities

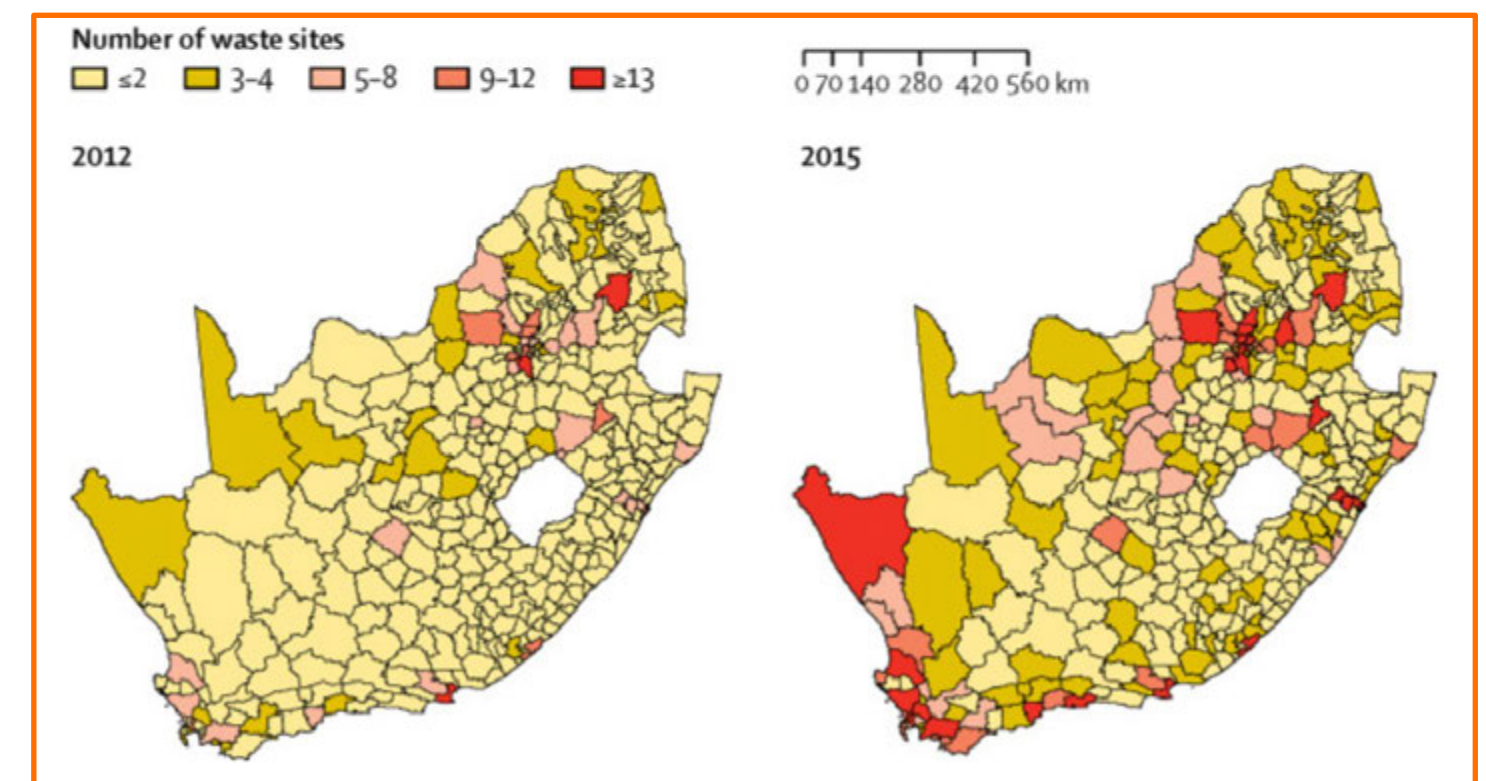
- The lack of remaining airspace on landfills in South Africa is seen as an urgent problem
- Waste diversion, optimization of landfill operations and LFG extraction are in focus in SA
- South Africa is working on its own system of carbon credits trading which can be a solid basis for the profitability of landfill gas extraction projects in the future

Matches

- Good matches with Dutch businesses for teaming up with local landfill developers to optimize current landfill design and operations
- This holds especially for landfill gas extraction
- Exploring the business case for landfill gas extraction projects under the upcoming carbon credits trading regime

Elaboration

- Matchmaking activities with developers and operators of landfills in South Africa
- Introducing Dutch knowledge on national landfill planning, LFG generation models, optimized LFG extraction and LFG treatment



Other opportunities

Tires

- SA produces close to 200,000 tons of spent tires yearly and only 25% of this volume is recycled currently
- After a failed EPR for tires (REDISA) the government has now restarted a state-run EPR with the fund paying €100 per ton of recycled tire material.
- What is needed now is recycling options for this material (described as a huge opportunity) as like available through Granuband

Batteries and electronics

- SA produces approximately 0,3 Mtons of WEEE per year. Currently, 10% of this waste is recycled
- An EPR for batteries and electronics is in place but there's a risk of cherry picking and transboundary movement

Waste-to-Energy (Incineration)¹⁰

- There's some sentiment against incineration as a waste processing alternative within SA
- Also, SA's SWM strategy does not show a receptive environment for this type of WtE
- Nevertheless, Cape Town is on a track to using WtE through incineration as one of the recovery options for its waste
- Strong push may come from SA's troublesome electricity production capacity ("load shedding")
- In case of new interest in this type of WtE, SA may need G2G support on introducing PPP structuring and procurement in this field
- Waste to Energy through incineration is promoted by the organization WT4E, located in Johannesburg

Glass

- SA has a well developed glass industry. The average content of recycled glass in new products is 40%.
- Glass consumption is at 2,5Mtons per year of which 1,7 Mtons are already reused or recycled.
- Still 0,5 Mtons of glass are landfilled yearly; a volume that may hold some promises for Dutch companies active in this field

Textiles

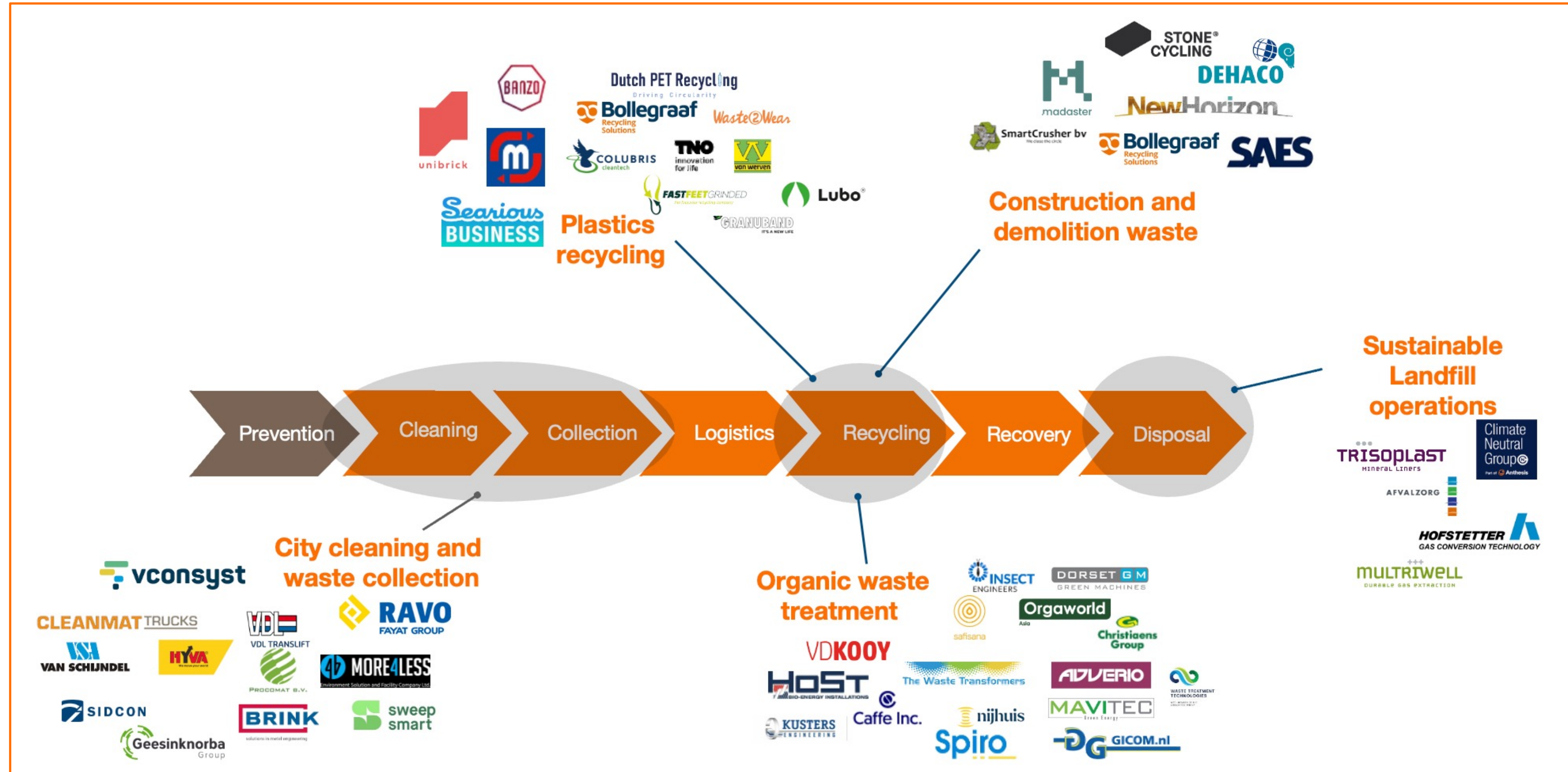
- South Africa is a net importer of fibers, so recycling could be beneficial (e.g. Sympany)
- Textile producers are especially in the Province of KwaZulu-Natal

Fly ash

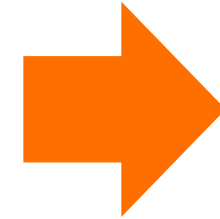
- Very large quantities of fly ash from coal fired power plants are produced and deposited
- SA is urgently searching for cheap innovative solutions in this field



In which focus areas?



What's the **follow up?**



Dutch trade mission to South Africa



Partners for International Business
Impact Cluster
G2G
B2B
K2K

16-20 October: Join the Trade Mission to South Africa



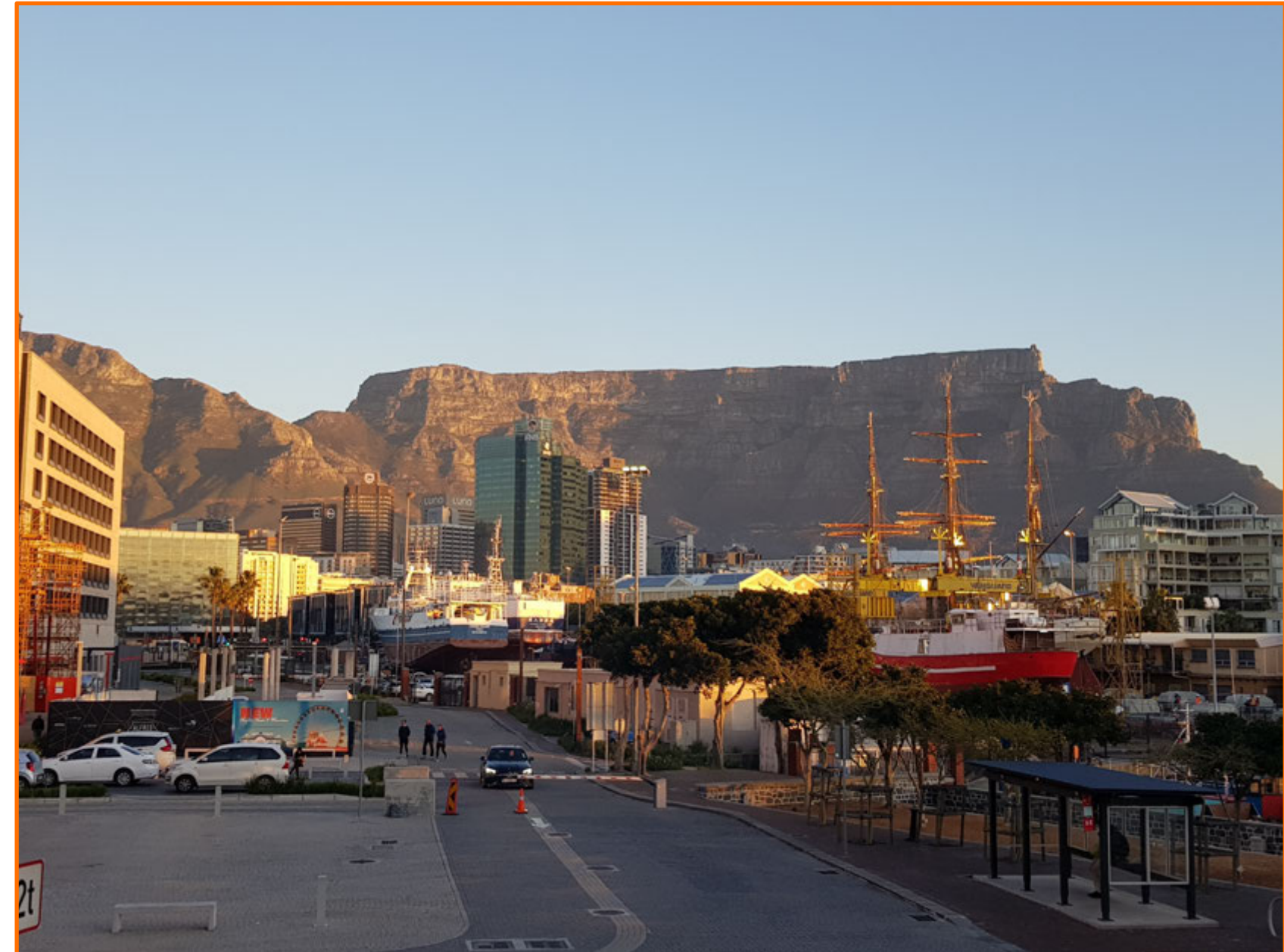
- In week 16-20 October 2023, RVO together with the Embassy network in South Africa is organizing a trade mission to South Africa
- The focus areas will be (1) circular waste management, (2) green hydrogen and (3) innovative agriculture practices
- The Circular Waste delegation will start in Cape Town (Monday – Tuesday), then join the green hydrogen and agriculture tracks in Pretoria on Wednesday, stay in Pretoria on Thursday
- There may be an option to additionally fly to Durban on Friday and have visits and meetings there too
- Depending on the outcome, the mission could be the start of a 2-3 year involvement of the waste/CE sector through a Partners for International Business or an Impact Cluster program



Sign up before the end of August



- Participation is open to Dutch companies and knowledge institutions active in green hydrogen, circular waste management and future oriented agriculture and horticulture
- The registration fee is EUR 950 per company (for max 2 participants)
- You're welcome to sign up by clicking [here](#)



- ¹ Green Economy Industrialisation in South Africa, Greencape, opportunity brief 2023,
- ² State of Waste Report 2018, DFFE,
- ³ National Waste Management Strategy 2020,
- ⁴ Waste Market Intelligence Report 2022, Greencape 2022,
- ⁵ Market Study for the Circular Economy of South Africa, Greencape, 2019
- ⁶ Improved food security in South Africa through a more circular agricultural sector, CSIR, 2022
- ⁷ Building a circular economy – reuse of construction and demolition waste in the built environment, Green cape
- ⁸ An estimate of construction and demolition waste quantities and composition expected in SA, SA Journal of Science, 2022
- ⁹ Exposure to waste sites and their impact on health: a panel and geospatial analysis of nationally representative data from SA 2008-2015, The Lancet 2020
- ¹⁰ Review of WtE policies in South Africa and International comparisons, IEA Bioenergy, 2023

This is a publication of
Netherlands Enterprise Agency
Prinses Beatrixlaan 2
PO Box 93144 | 2509 AC The Hague
T +31 (0) 88 042 42 42

[Contact](#)
www.rvo.nl

This publication was commissioned by the ministry of Foreign Affairs.
© Netherlands Enterprise Agency | August 2023

Publication number: RVO-183-2023/RP-INT

NL Enterprise Agency is a department of the Dutch ministry of Economic Affairs and Climate Policy that implements government policy for Agricultural, sustainability, innovation, and international business and cooperation. NL Enterprise Agency is the contact point for businesses, educational institutions and government bodies for information and advice, financing, networking and regulatory matters. Netherlands Enterprise Agency is part of the ministry of Economic Affairs and Climate Policy.