

Plastics 2023

An analysis
of the 2023
South African
plastics
industry data

*Published in
July 2024*

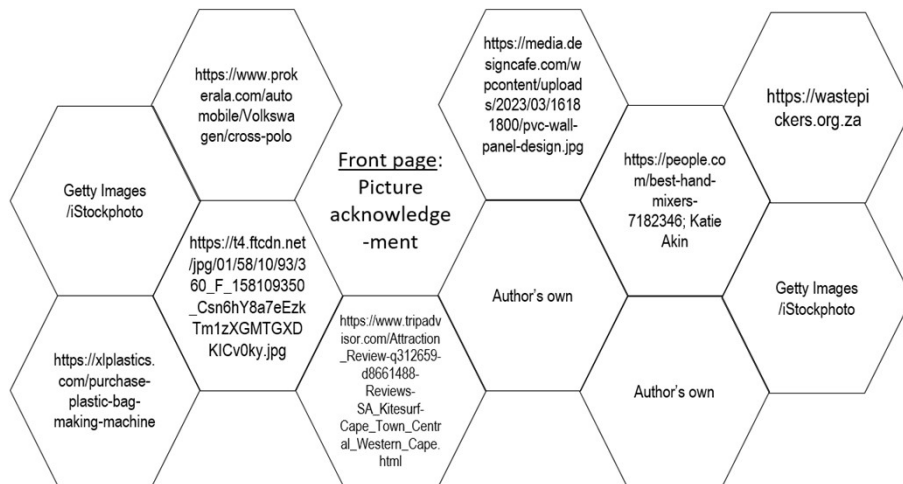
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About this report

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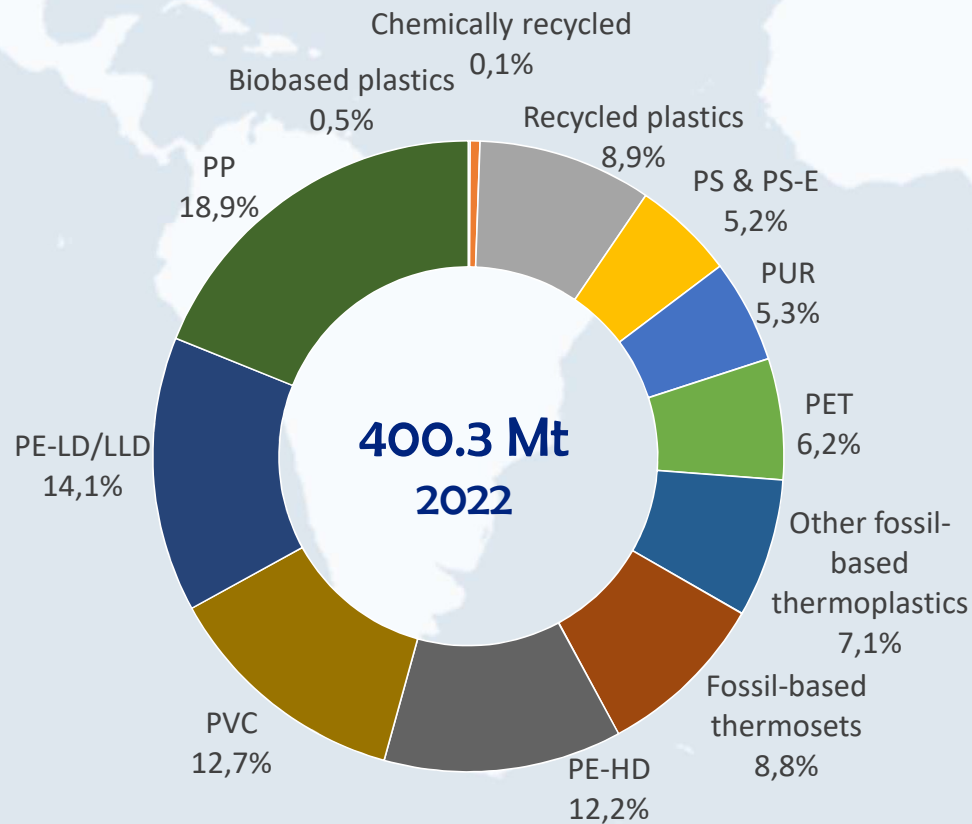


Table of content

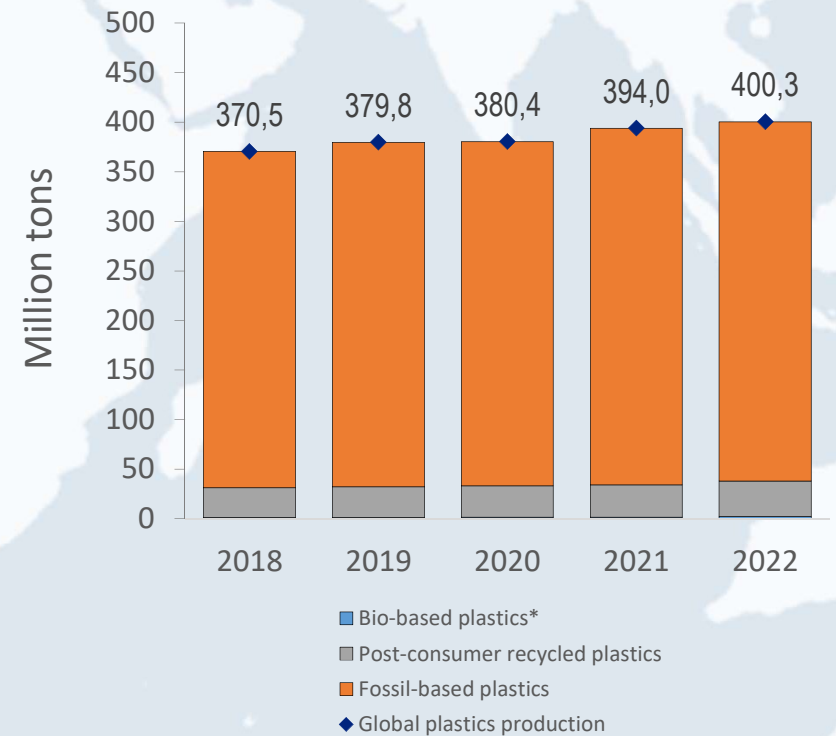
➤ World plastics data	4
➤ European plastics data	6
➤ South African plastics data	8
➤ Plastics Recycling in South Africa	14
➤ The Circular Economy for Plastics	27

World plastics data – 2022

Global plastics by type

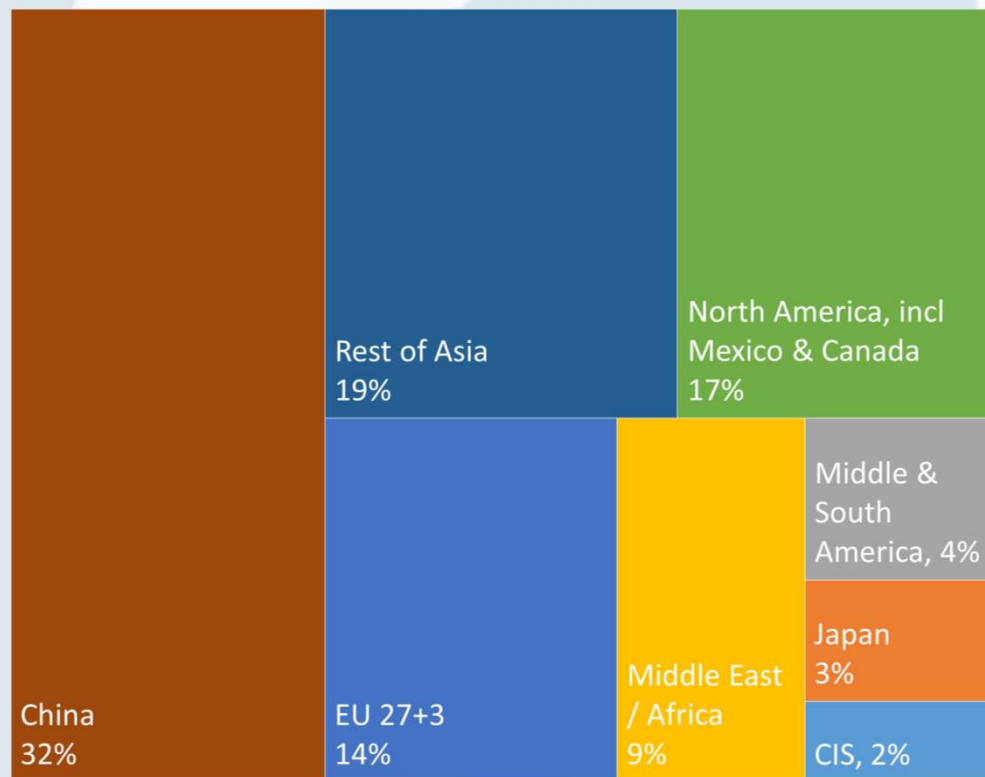


Global plastics production



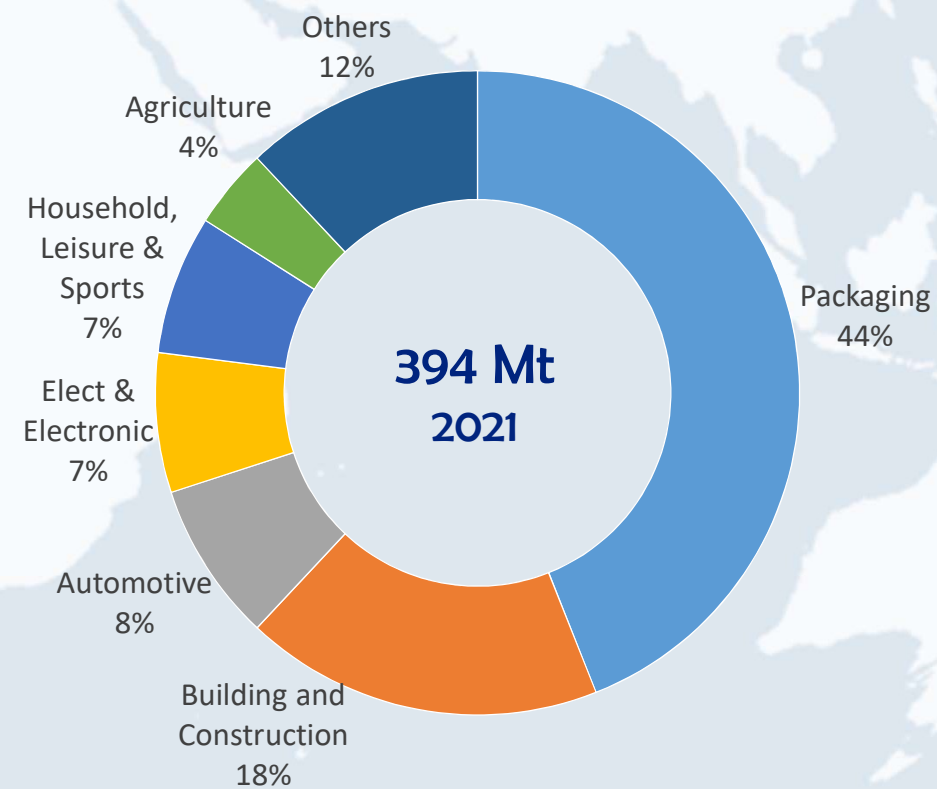
* Only plastics related tonnages were included

Plastics production by regions of the world in 2022



1. Production scope including fossil-based, recycled (mechanically and chemically), bio-based and bio-attributed plastics
2. CIS: Commonwealth of Independent States : Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan and Uzbekistan.
3. Rest of Asia includes Asian countries (except China & Japan), Oceania, Turkey and Ukraine

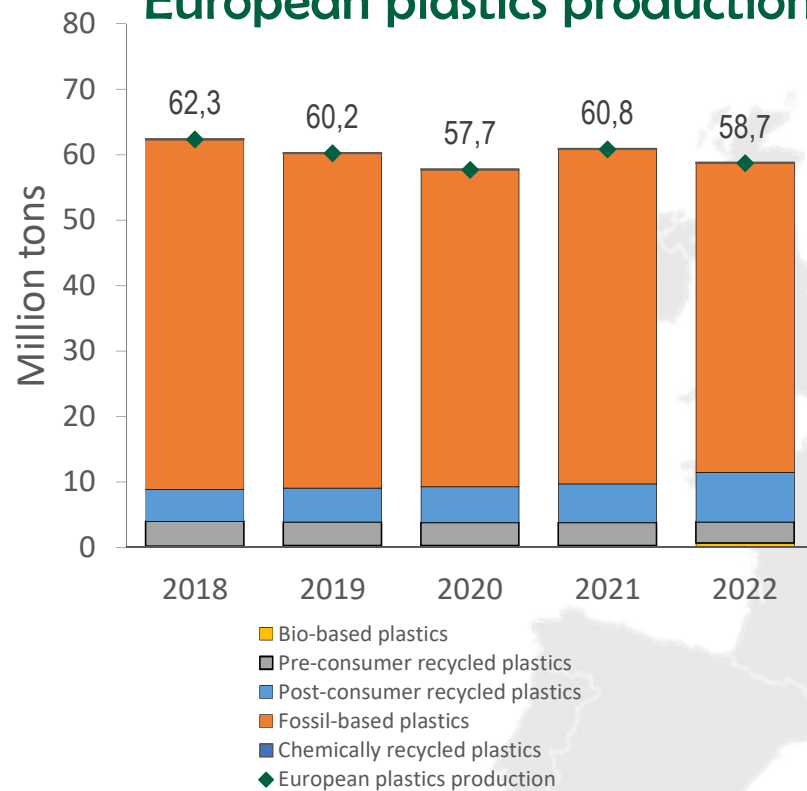
Global plastics by application



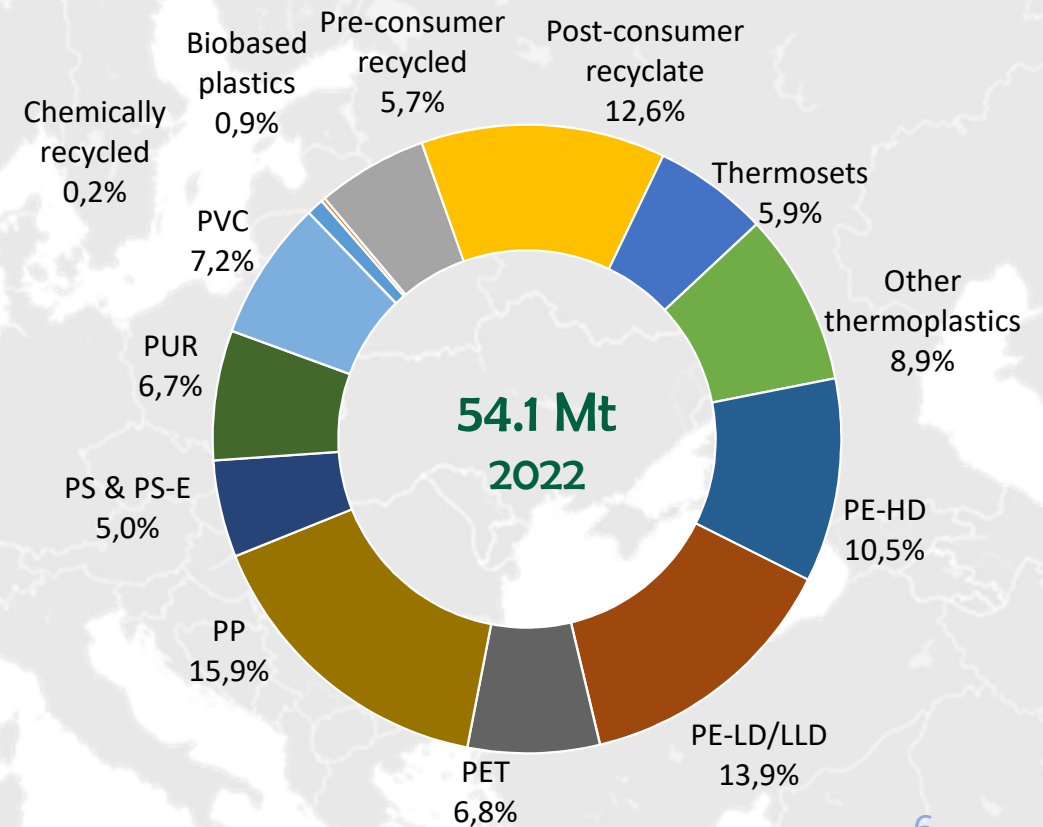
Source: Plastics - the fast Facts 2023 – Plastics Europe

European plastics data - 2022

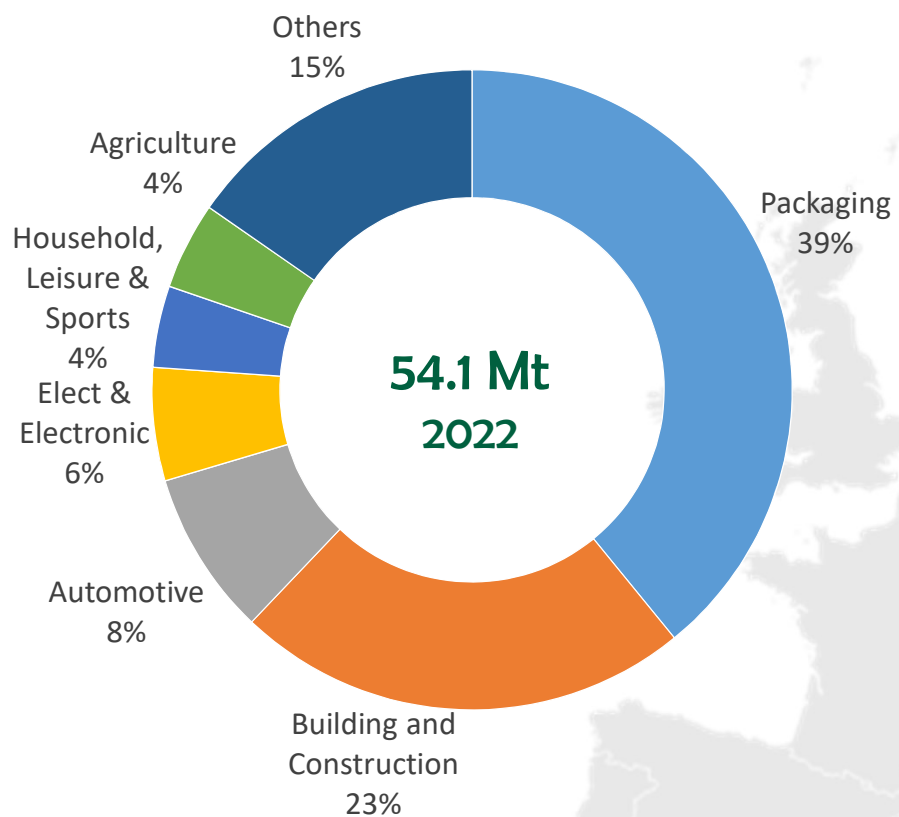
European plastics production



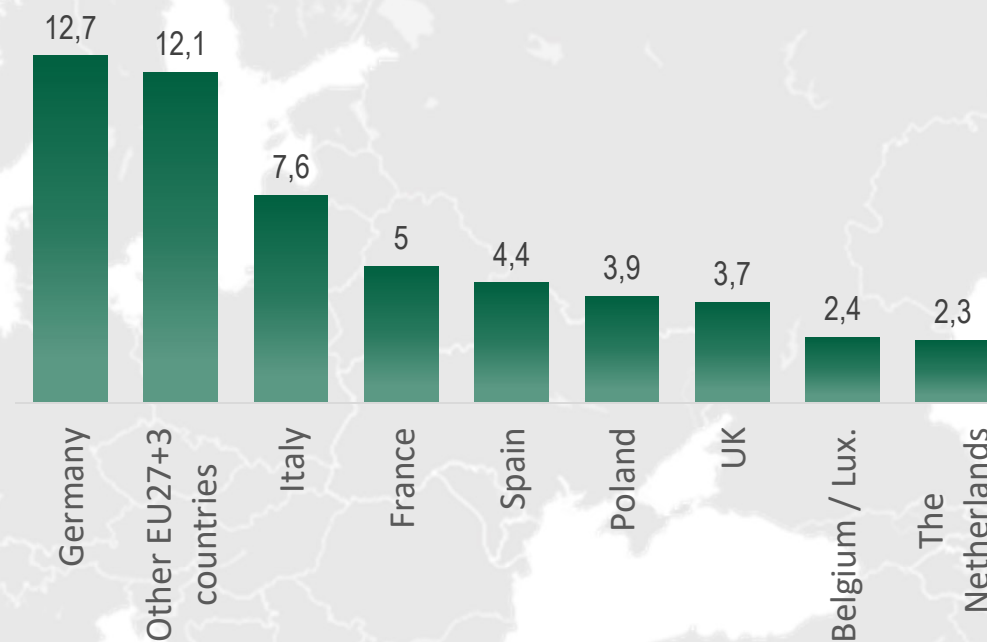
European plastics demand by type



European plastics demand by application



EU Conversion by country - 2022



Source: The Circular Economy for Plastics, A European Analysis – March 2024



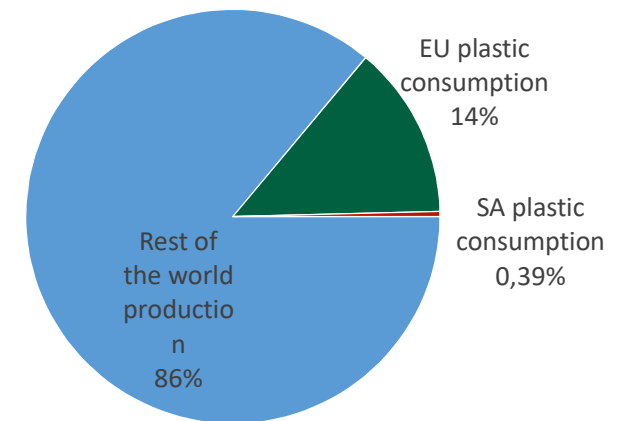
South African data

In a historic decision at the fifth United Nations Environment Assembly in March 2022, all 193 UN Member States decided to end plastic pollution. With negotiations on a binding legal agreement by 2024 now underway, the question is how to realise that goal.

How much plastic is produced and how is it treated at its end of life? To understand what is happening in South Africa, one needs to look at the bigger picture.

In global terms, the South African virgin plastics industry is significantly small – less than 0.4 %. South Africa's plastics industry is the largest of its kind in Sub-Saharan Africa.

The local plastics industry supplies a number of products into the neighboring countries, either directly or indirectly via its local customers.



South African domestic Consumption - 2023



Market sectors – virgin only

	SA (2023)	Global (2021)	EU27+3 (2022)
Packaging	48,2%	44,0%	39,0%
Building & Construction	12,5%	18,0%	22,9%
Agriculture	9,4%	4,0%	4,4%
Automotive	6,3%	8,0%	8,3%
Other	12,8%	12,0%	15,6%
Electric & Electronic	6,4%	7%	5,7%
Household, Leisure & Sports	4,3%	7,0%	4,1%

The packaging industry is by far the biggest user of plastics, both flexible and rigid packaging. South Africa lacks a strong non-packaging sector. Very few companies are serious about the engineering sector and even those that can be classified as *engineering suppliers*, have some packaging products in their product range.

Plastics packaging is a known and established market with very little risk involved.

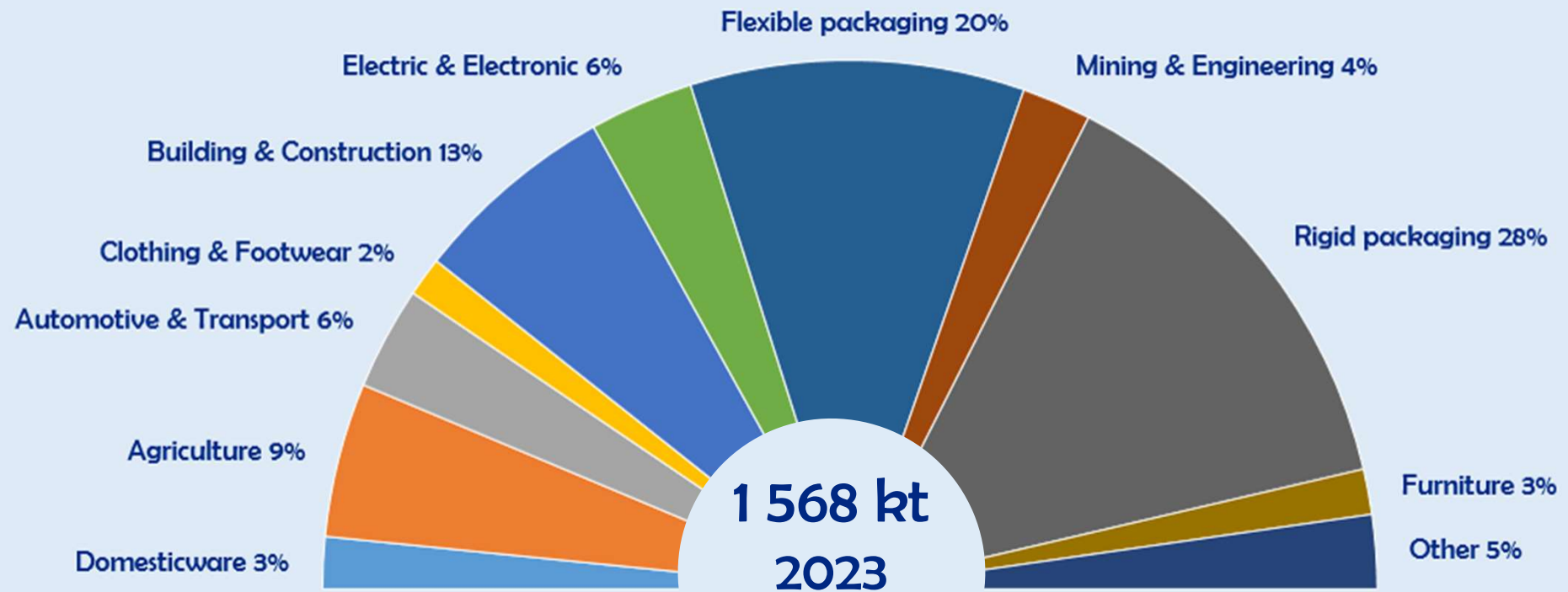


www.polyopakpackaging.co.za

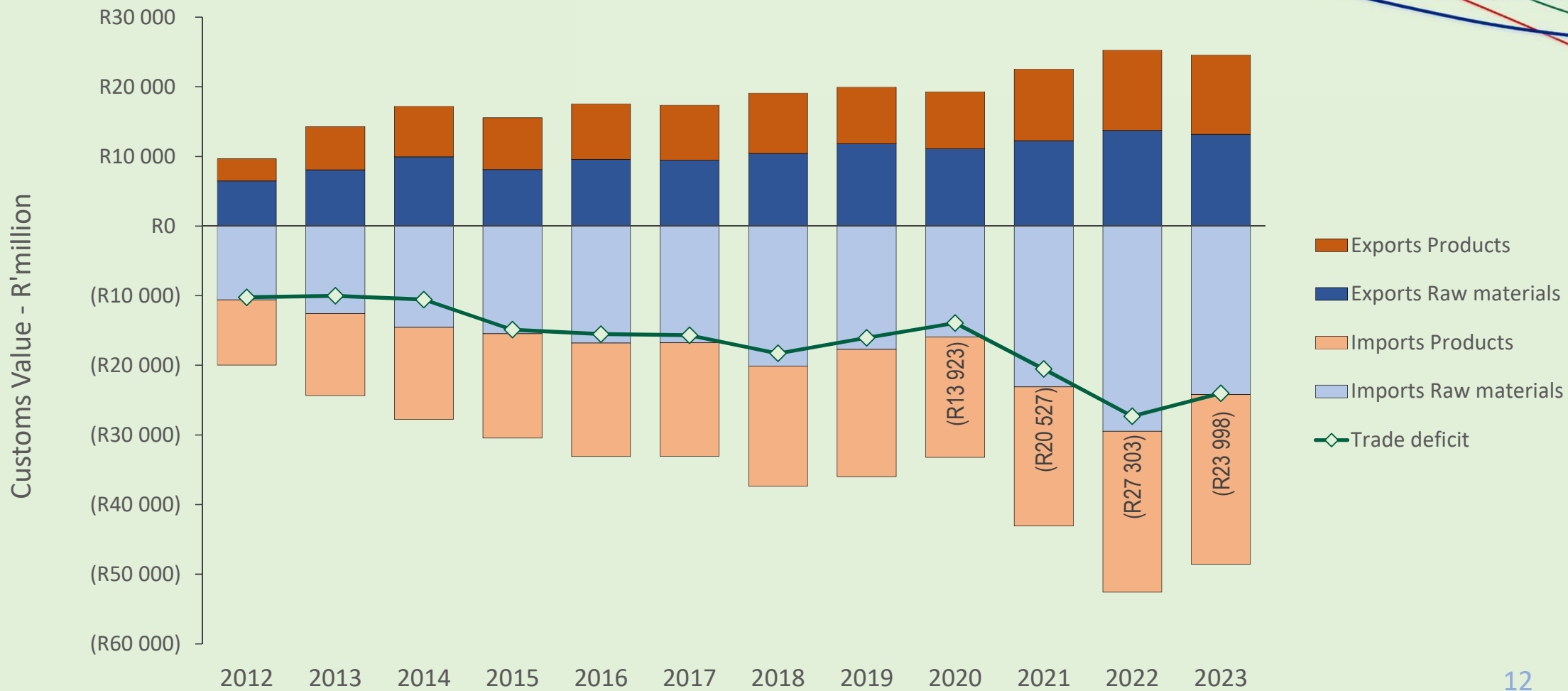


www.peakpak.co.za

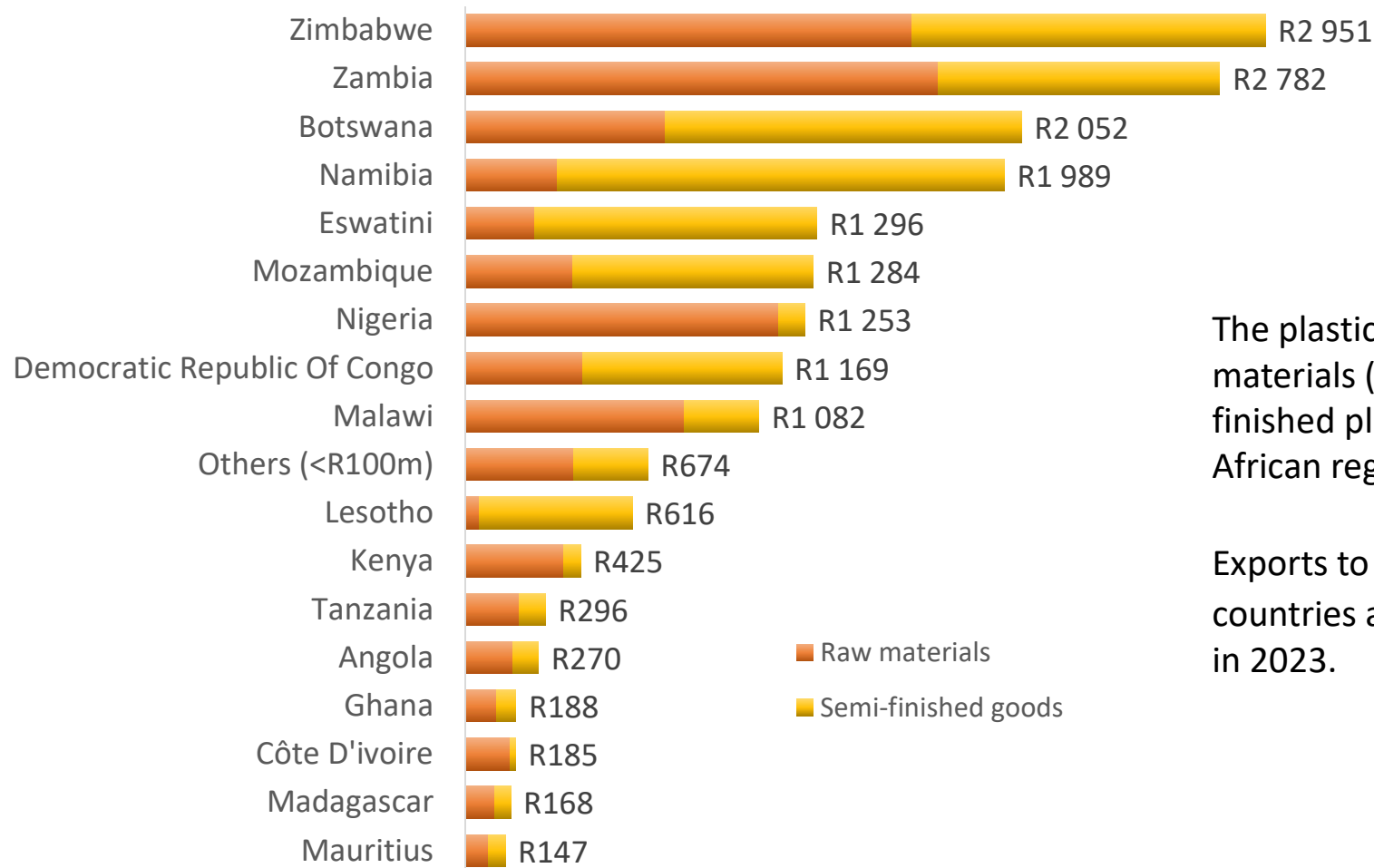
Virgin consumption by application



Trade



Exports into Africa – R'million



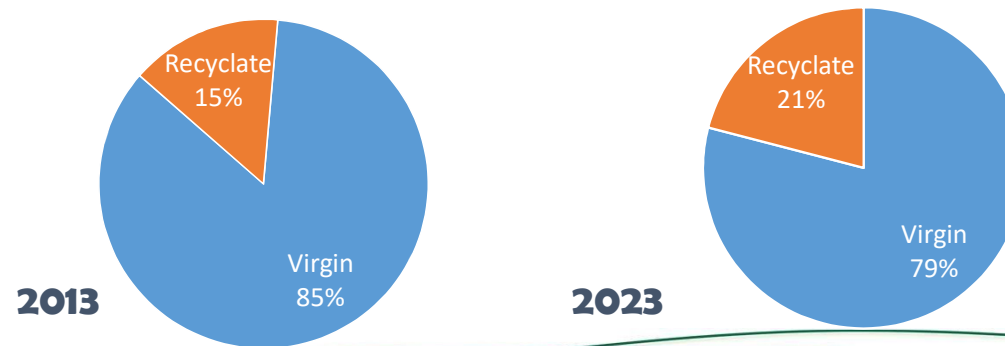
The plastics industry trade raw materials (polymers) as well as semi-finished plastics goods within the African region.

Exports to the 15 other **SADC** countries amounted to **R16 150 million** in 2023.

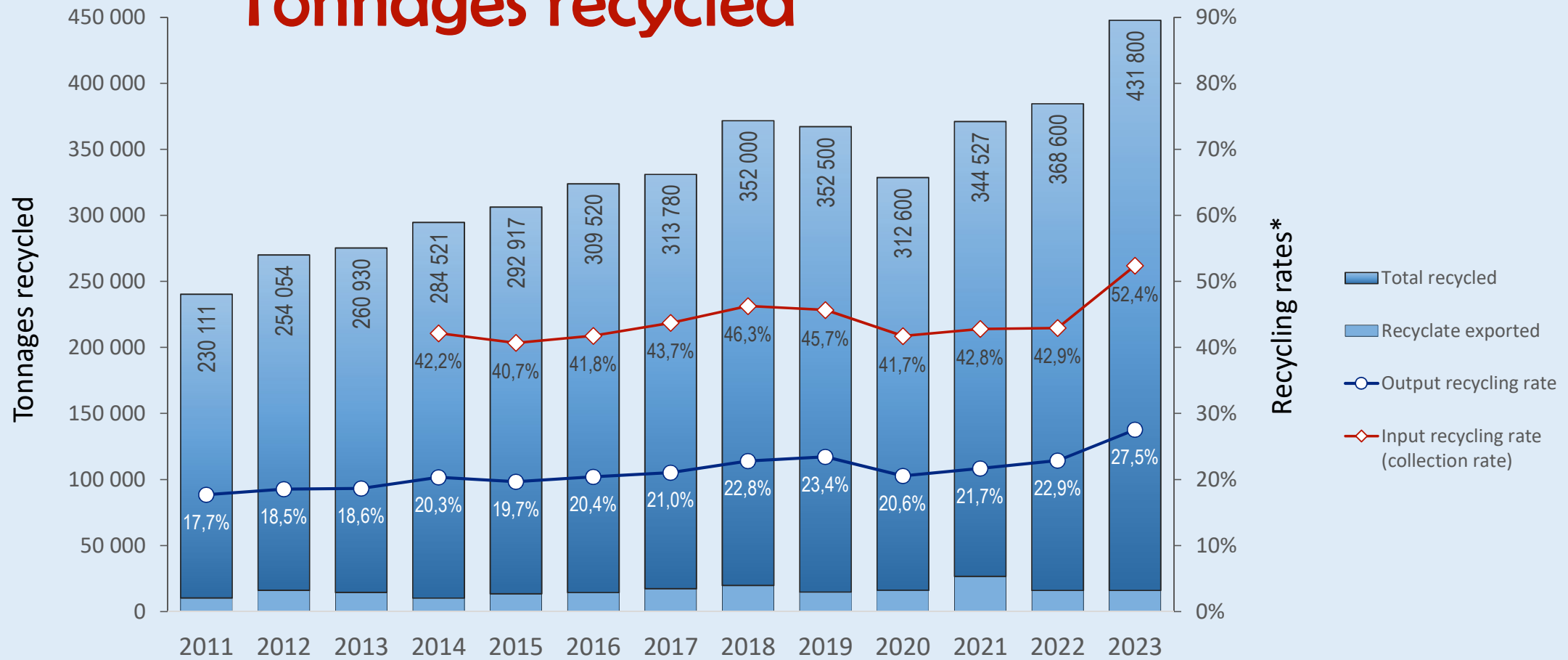
Plastics Recycling

Recycling is one of the most important actions currently available to reduce the impact of plastics waste and represents one of the most dynamic areas in the plastics industry today. Recycling provides an opportunity to reduce petrochemical usage, CO₂ emissions and the volume of waste to be disposed of.

South Africa ranks amongst the best in the world in terms of mechanical plastics recycling. First world countries with sophisticated collection systems are not achieving anything near what South Africa has achieved, especially with regards to thin polyethylene films and contaminated post-consumer plastics. Across South Africa, popular materials are collected and recycled into new raw material. However, lots of waste, including recyclable plastics waste, is still ending up in landfill and in the environment.



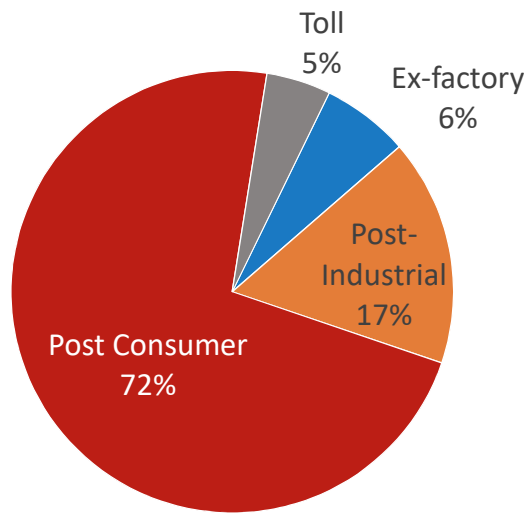
Tonnages recycled



* Output recycling rate = recycled tonnages divided by virgin consumption

Input recycling rate = collected tonnages divided by recyclable virgin and recycled consumption

Origin of recyclables



The increased competition and poor quality of incoming recyclables result in more processors sourcing from waste generators directly. These materials are classified as “post-industrial”. Post-consumer recyclables sourced from the solid municipal waste stream and landfill dropped from 75% in 2022.

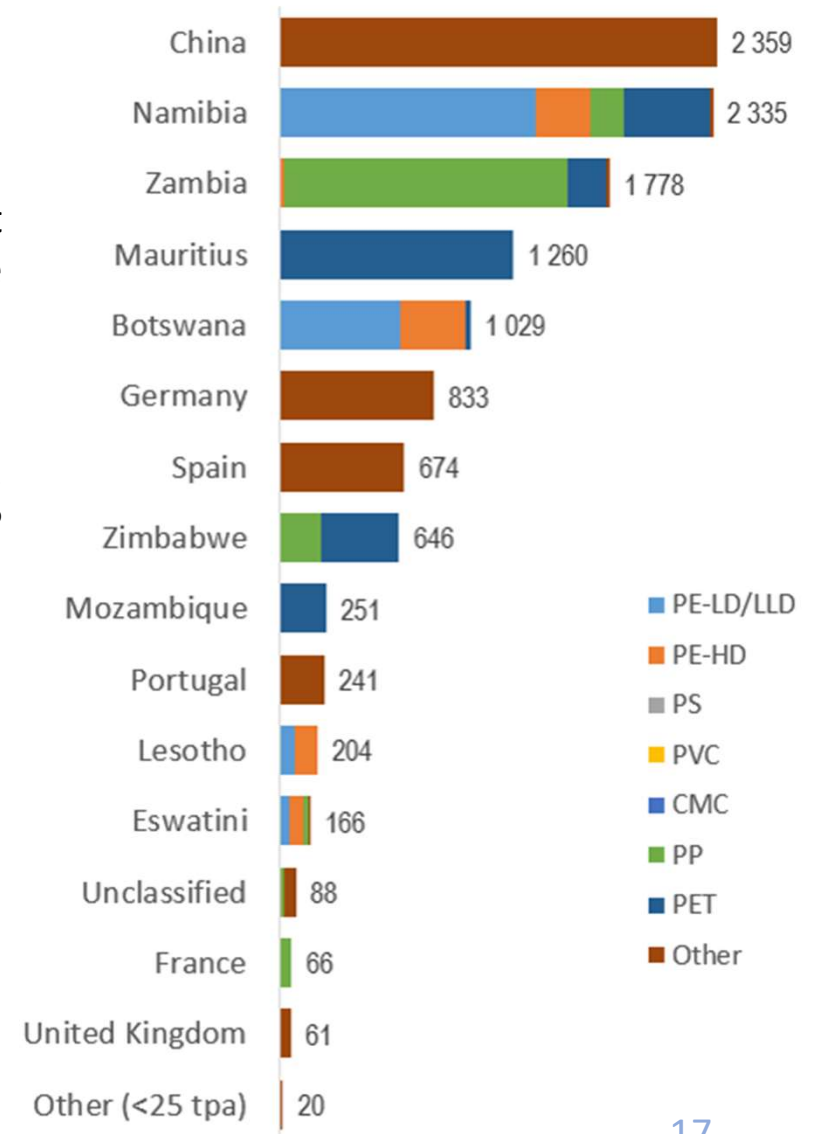
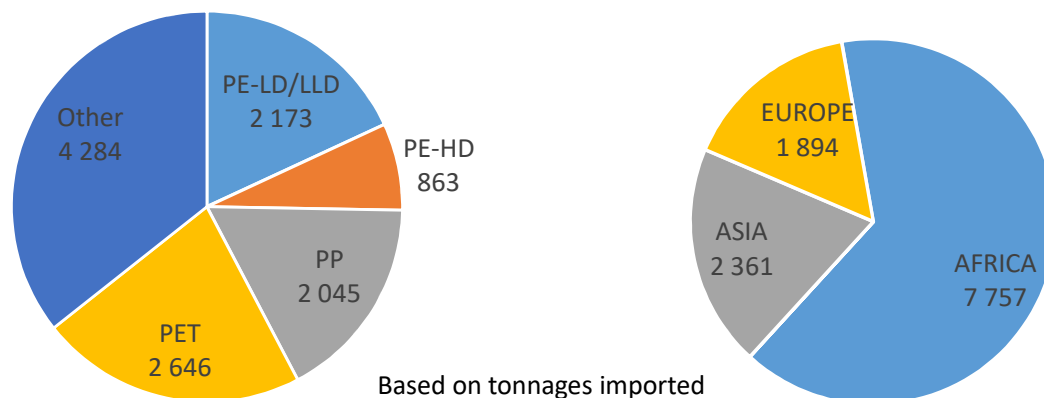


Waste imports

South Africa is closely guarding its own collection of waste and import permits are required for recyclable waste originating from anywhere else. In 2023, only 2% of the materials collected for recycling by South African processors, have been imported.

The waste from Europe contributed 41% to the overall import value. This is predominantly high value PUR foams. Under investigation is PP from France amounted to R21.4 million.

12 012 tons of waste imported in 2023



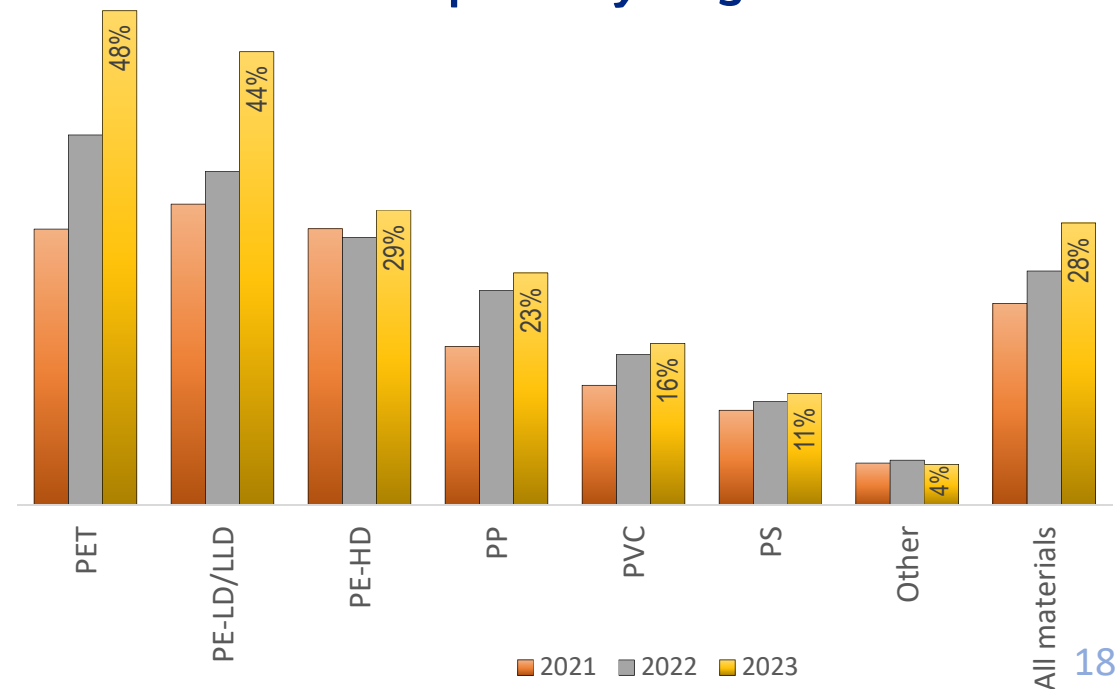
Materials recycled

Increasing the quantity and the overall quality of recycled plastics is required to accelerate the circularity of plastics. Internationally, mechanical recycling is the recycling process providing the highest quantities of recycled plastics.

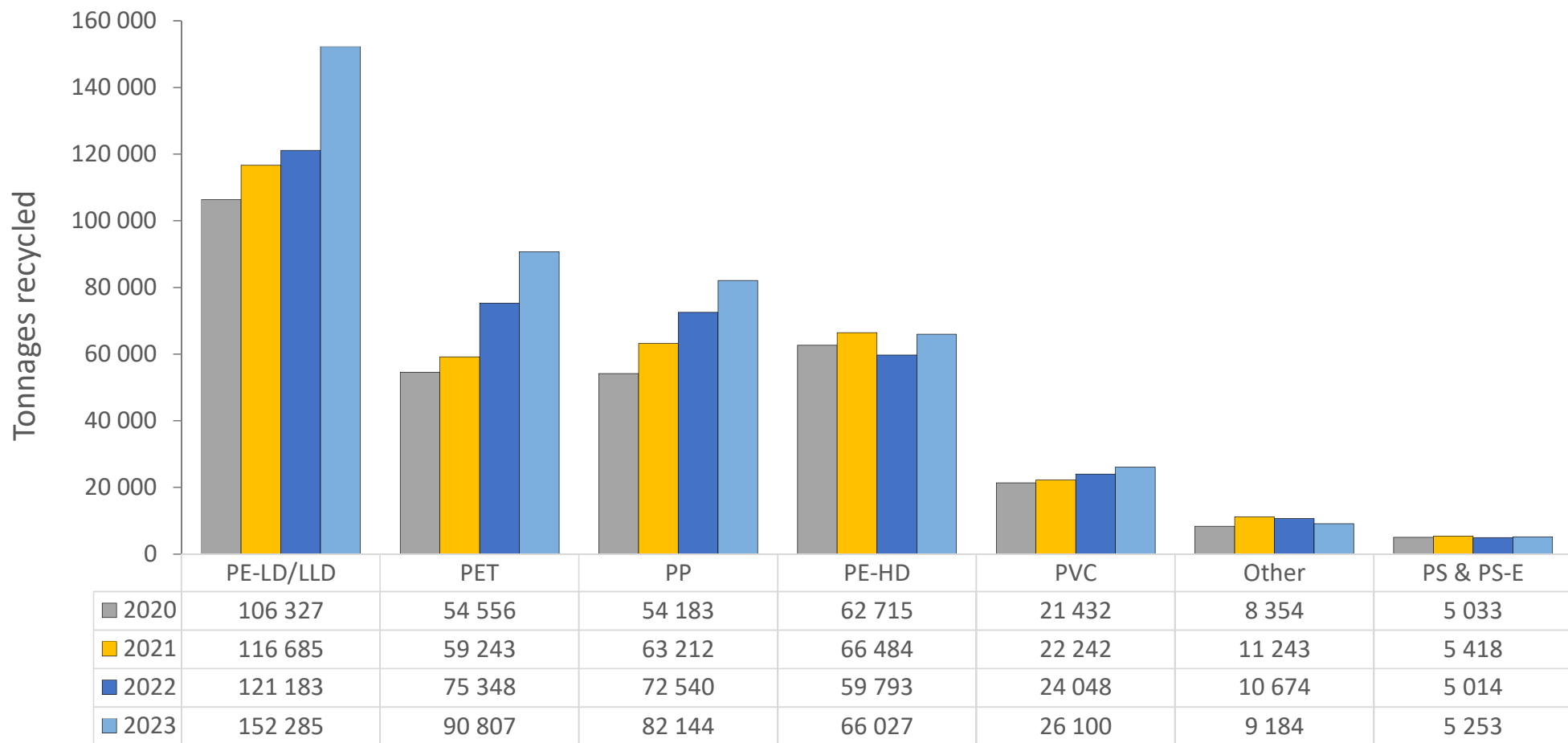
For recycling to be effective, certain principles need to be in place:

- ◆ Products need to be designed for recycling,
- ◆ Systems need to be in place to collect all recyclable waste from the solid waste stream as early as possible,
- ◆ Specifications need to be in place for incoming recyclable waste,
- ◆ Standards need to be developed and adhered to for the recycling processes and subsequent recyclate, and
- ◆ Environmental claims need to be substantiated.

Output recycling rates



Tonnages recycled



Employment opportunities

It is estimated that **95 900 informal jobs** were sustained in the collection industry. These include waste pickers and employees of smaller entrepreneurial collectors. (The figures are based on 70 kg* of plastics waste handled per person per day and 200 good collection days per annum. On average, two people handle recyclable waste before it is baled for transport to the recycler.)

Just more than **R 4.7 billion** was contributed to the informal collection industry for collecting **671 200 tons** of recyclables, first to the waste picker but also to the buyback centres and collectors supplying the recyclers reprocessing the material.

* The 70kg/day has been updated (60kg/day before) to accommodate the increased levels of plastics in the waste stream.



Waste picker selling recyclables to Buyback Centre



Sorters at Buyback Centre

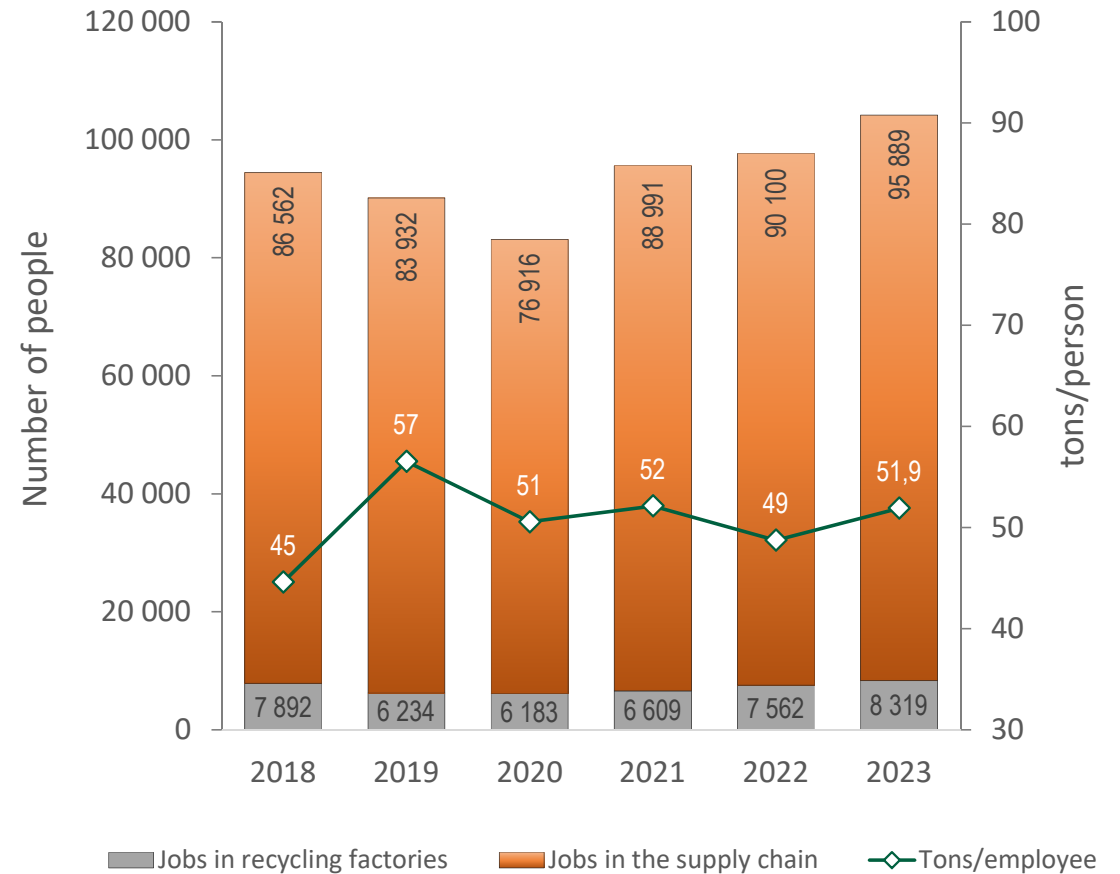


Pelletiser operators



Operator at conveyor

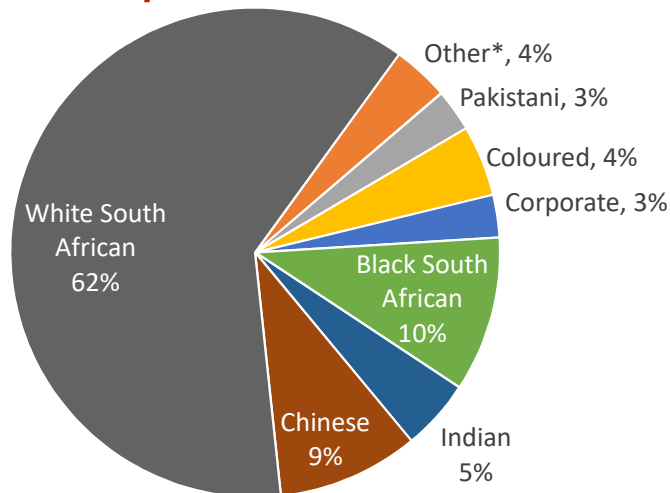
Formal and informal jobs



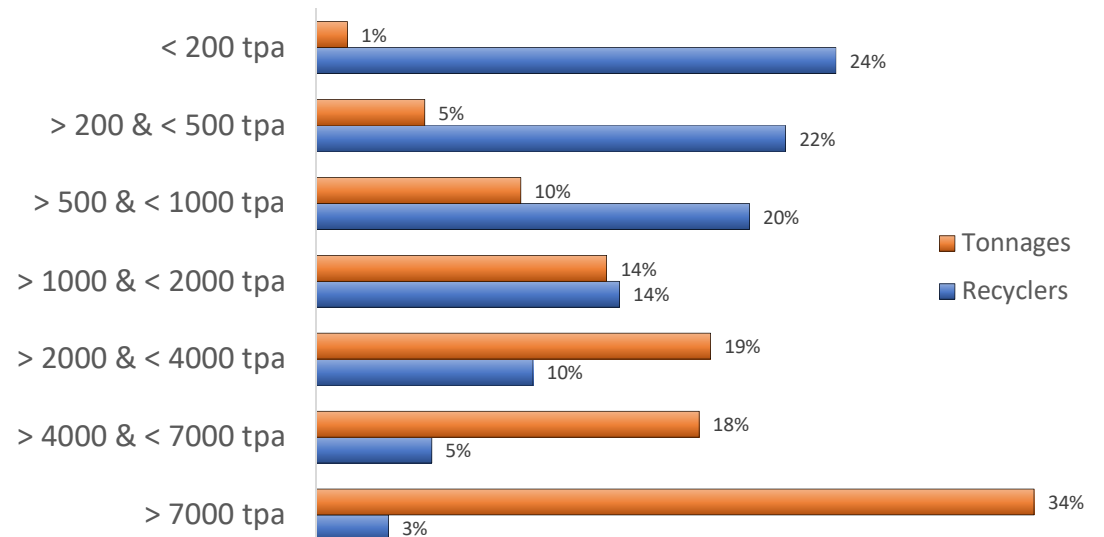
Recycling operations

There were **295 recycling operations** recorded in South Africa at the end of 2023. Of the recyclers surveyed, **40%** processed post-consumer materials and granulated, washed and pelletised. Only a portion of these recyclers can successfully process landfill-sourced material. The high capital investment cost of proper wash plants is feasible only for larger operations. Of the 273 recycling operations from the previous year, 6.2% ceased operation and 39 new companies were recorded.

Ownership



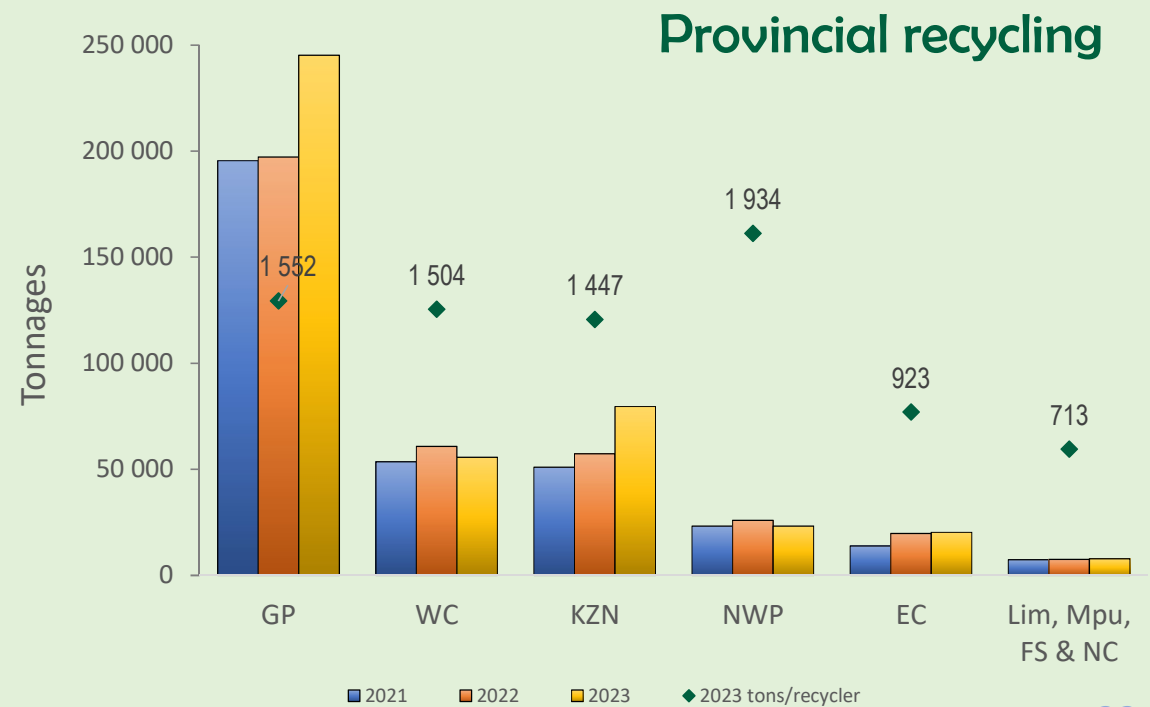
* Other incl. Portuguese, Cameroonian, Korean, etc.



Landscape

Provincial spread

In 2023, 54% of the recyclers were based in Gauteng doing 57% of the tonnages. On average, the recyclers in Gauteng, Western Cape and KwaZulu Natal are processing between 140 and 200 tons per month. There are no bona fide recyclers in the Northern Cape. Collected recyclables are supplied to recyclers in the Western Cape and Gauteng.



Recyclate markets

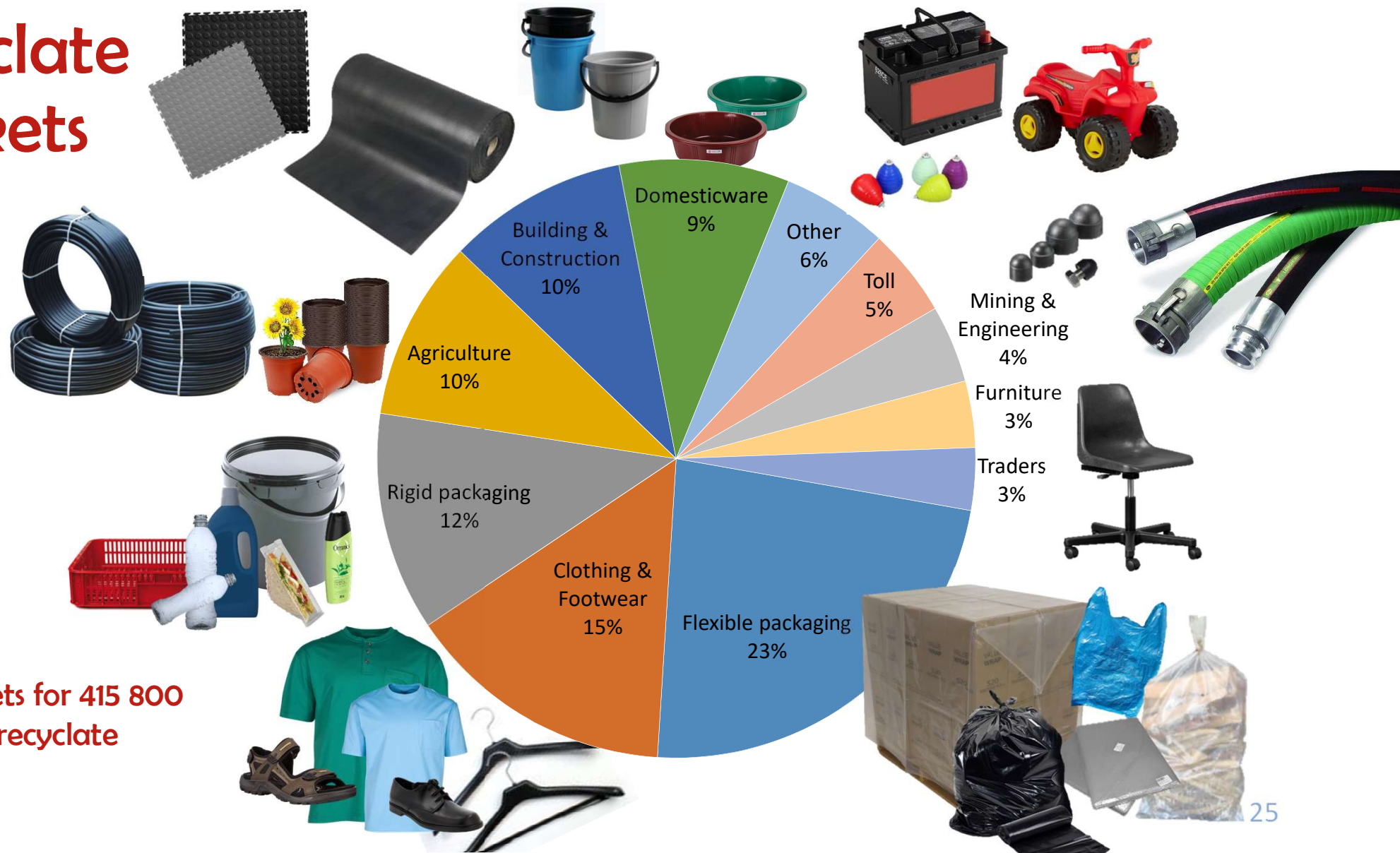
Since 2013, the amount of recyclate produced in South Africa increased by 69%. Consequently, the proportion of recycled content used in new products increased from 15.8% in 2013 to 21.8% in 2023. Individual company pledges, industry initiatives, recycler actions, etcetera, are fostering the use of recycled plastics in different sectors.

However, more needs to be done to increase recycling rates. Suitable end-markets are critical for the sustainability of the plastics recycling industry. Recyclate finds markets in almost all local market sectors. Only 3.7% of the recyclate was exported as raw material to plastics converters in Asia and in the SADC region.

Rigid and flexible packaging used 33.7% of all locally produced recyclate.

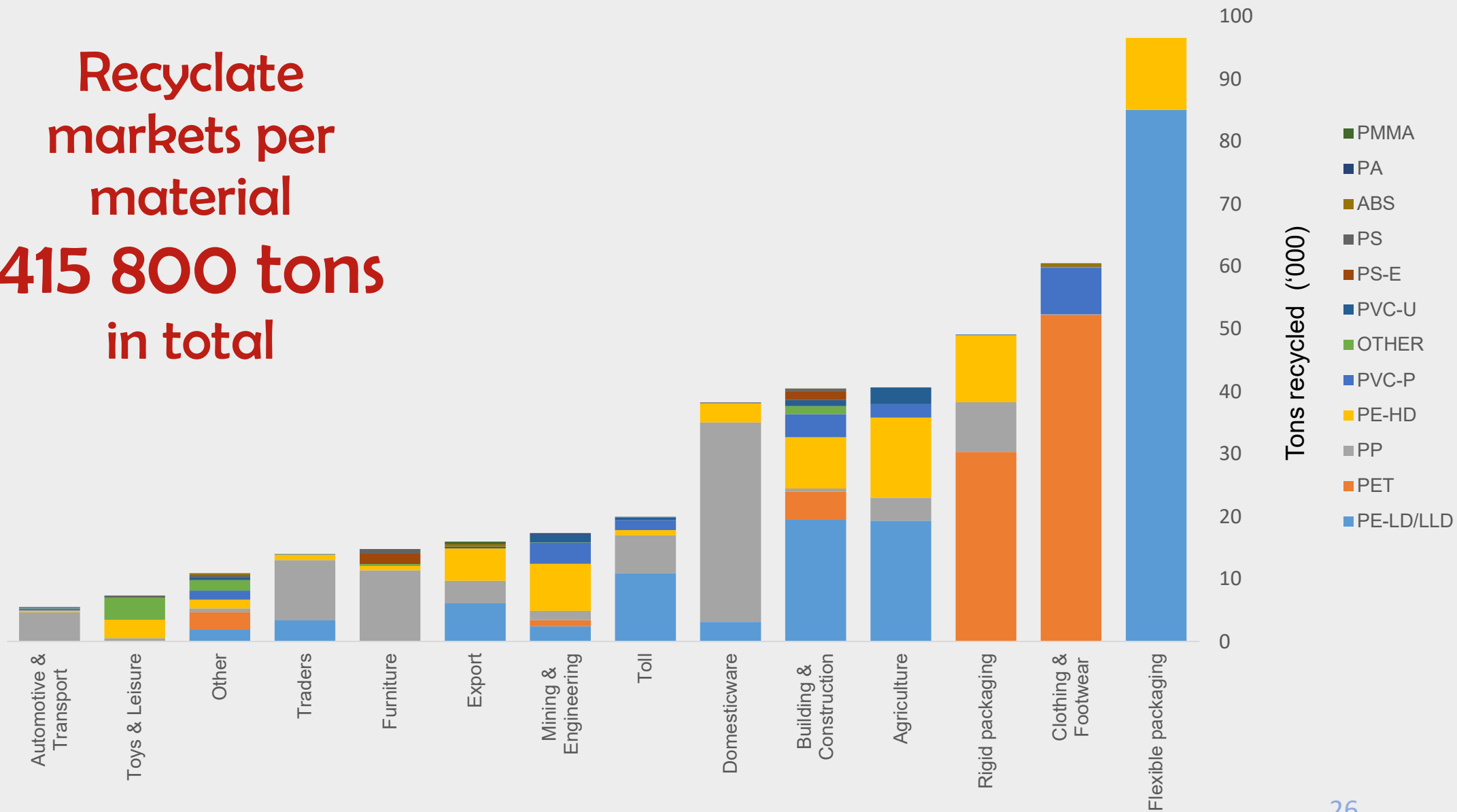


Recyclate markets

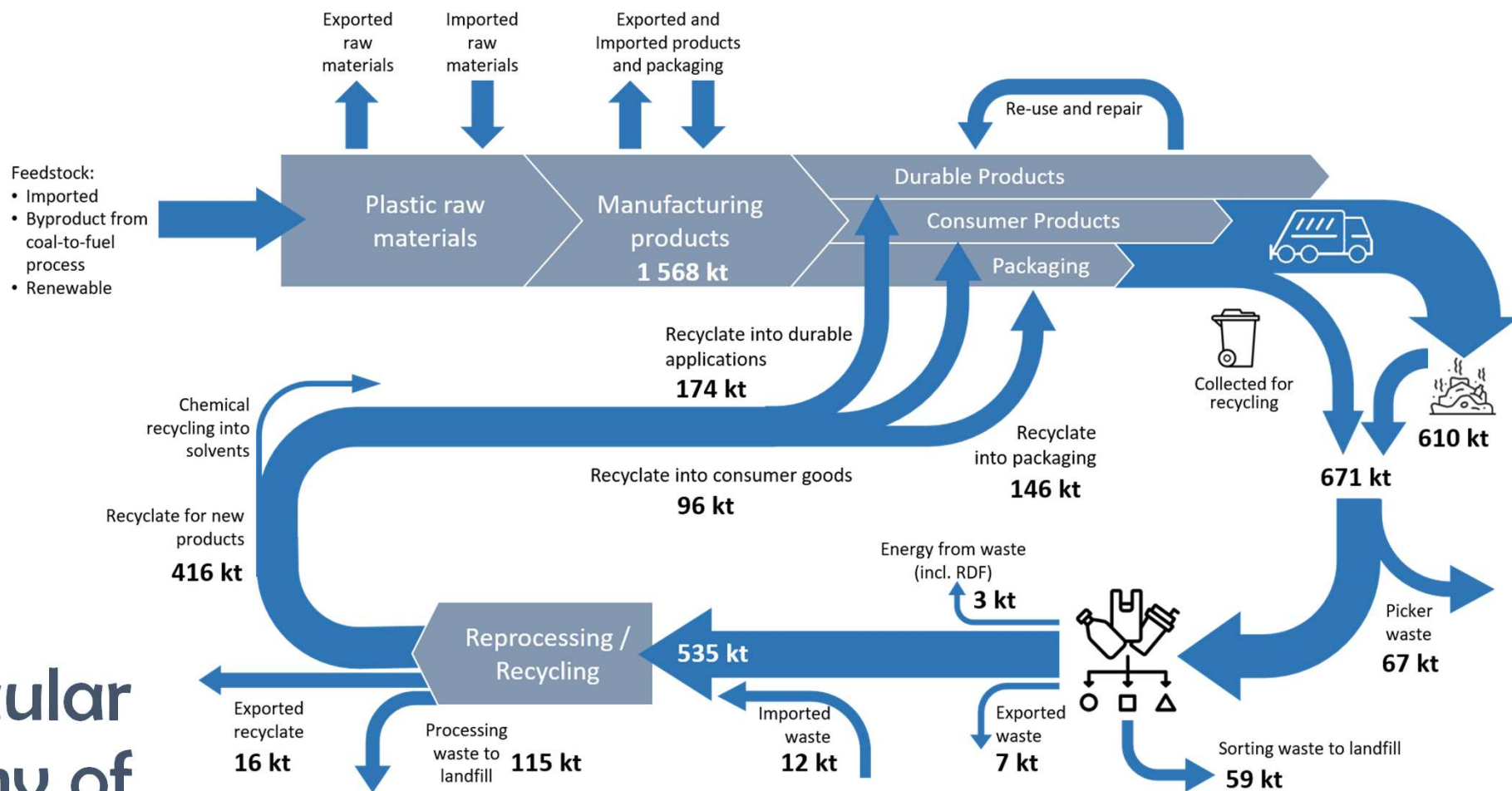


Local markets for 415 800 tons of recyclate

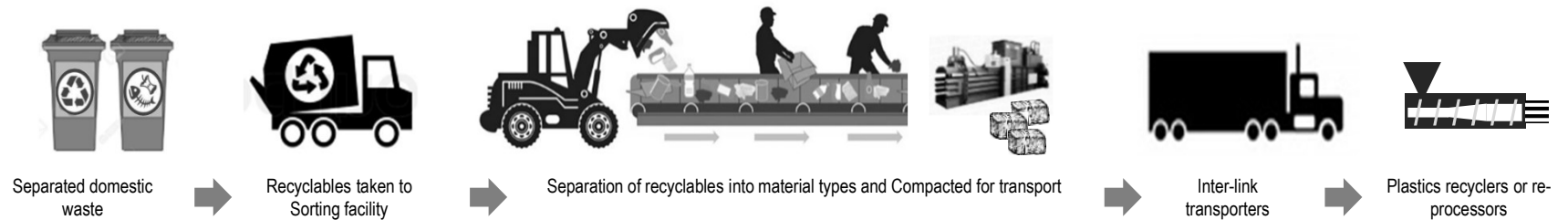
Recyclate
markets per
material
415 800 tons
in total



The circular economy of plastics



Fixing the broken system (alternative waste management)



LOCAL GOVERNMENT

1. Separation at source is essential / enforced to separate wet- and dry waste.
2. Local government to collect and manage wet waste as per the Constitution – landfill or composting facility.
3. Sub-contractors can be appointed to transport the dry waste to a central waste beneficiation centre as the municipality sees fit.
4. Sub-contractors for transport can be groups of waste pickers, existing Buyback Centres or new businesses. No informal picking to be allowed.
5. Home owners pay towards the service.
6. Municipalities will have reduced waste management activity and subsequent savings.

COLLECTION AND TRANSPORT

PRIVATE SECTOR

1. Dry waste is taken to a waste beneficiation centre or MRF.
2. Each centre is an independent economic hub. Location is based on number of houses, the volume of dry waste and the volume of recyclables.
3. Waste pickers enlist with a beneficiation centre to sort the recyclable waste in a dedicated area into the various waste streams for their own income.
4. Cherry-picking will continue but less popular materials will be in one spot and accessible for picking.
5. Private sector purchase the sorted materials from the waste pickers and beneficiate on site, e.g. baling, densification (ingot), size reduction and disassembly where necessary.
6. Residual waste is compacted by service provider for further processing.

WASTE BENEFICIATION

PRO's AND EPR SCHEMES

1. Private sector removes the separated and beneficiated recyclables and take it to the recycling or recovery site.
2. Private sector, through the PRO's establish more end-markets and grow existing markets for recycle.
3. Private sector is managing and beneficiating residual compacted waste, i.e. pavers, building blocks, road surface, solid or liquid fuels, WtE, etc.

RECYCLING

Literature & Publications

1. Plastics – the fast Facts 2023; Plastics Europe; March 2024
2. The Circular Economy for Plastics, A European Analysis; Plastics Europe; March 2024
3. Plastics 2022, an analysis of South Africa latest plastics production and waste data, Plastics SA
4. P0441 Statistical Release; Gross domestic product, Fourth quarter 2023; Stats SA; Department; Statistics South Africa; published March 2024.

Other Sources

1. Visits and personal interaction with 115 recyclers representing 50% of the final tonnages
2. Information from Polyco, Petco, SAVA and EWASA representing 34 recyclers with 25% of the final tonnages

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