

Circular Economy in South Africa

Opportunities for reusable packaging systems and women's participation



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Project Description

The project *Circular City Labs (CCL) – Testing reusable packaging systems in cities* aims to reduce greenhouse gas emissions through waste prevention by promoting reusable packaging systems and strengthening women participation in local circular economies. The selected partner cities for this challenge are Tirana (Albania), Tbilisi (Georgia), and Medellín (Colombia).

The project is carried out by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in collaboration with ICLEI on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). It is funded through the BMZ Initiative for Climate and Environmental Protection (IKU).

Report on Circular Economy in South Africa

This report was led by an ICLEI Africa team, comprising Jokudu Guya, Kelley Rowe, Kiera Crowe Pettersson, Luka Dreyer, Paul Currie, and Zakiyya Atkins. It was set to establish a baseline and assess the landscape for the potential rollout of their Circular City Lab programme in a South African City.

This report synthesises the economic and waste landscape of three South African cities (Cape Town, Ekurhuleni, and uMhlatuze) with a focus on enabling environments for circular economy engagement and support for women's participation. Firstly, we would like to acknowledge Elena Rabbow, Jana Schwalm, Jonas Kertscher and Lea Derr from GIZ for their invaluable input to the project. We would also like to thank and acknowledge Adetola Okunlola Browning, Alison Evans, Bongani Mnisi, Brenda Strachan, Bronwen Griffiths, Caiphus T. Netshishivhe, Candice Webb, Douglas Mdleko, Estelle Naidoo, Lance Greyling, Liezel Kruger-Fountain, Lizz Mey, Lorryn Steenkamp, Matlakala Segole, Matthieu de Gaudemar, Mpho Nche, Nokubonga Khumalo, Nyelethi Mahlaule, Petro Myburgh, Sam Smout, Saul, Alexander Roux, Shirley Malema, Sthembiso Garane and Tamsin Faragher for their support and contribution to this report and the furthering of circular economy in South Africa.

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Disclaimer

The findings in this report do not necessarily represent the views of the individuals and organisations interviewed in this research.

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Executive Summary

This study, commissioned by GIZ and led by ICLEI Africa, explores the economic and waste landscape of three South African cities—Cape Town, Ekurhuleni, and uMhlathuze—with a focus on enabling environments for circular economy engagement and support for women's participation. The report aims to assess the landscape for the potential rollout of GIZ's Circular City Lab (CCL) project in a South African city, which seeks to test and implement innovative reusable packaging systems in urban settings.

The global waste crisis and climate emergency necessitate a shift from the linear 'take-make-dispose' model to a circular economy, where products and materials are kept in circulation for as long as possible. Reusable packaging systems are identified as a crucial strategy in this transition. The CCL project by GIZ aims to reduce greenhouse gas emissions through waste prevention and strengthen women's participation in the local circular economy in four selected partner cities globally.

The study employs a mixed-method approach, combining quantitative and qualitative methodologies, to assess the baseline opportunities, challenges, and impacts of reuse in South Africa, with a focus on women-led businesses and the informal sector. Primary and secondary research was conducted, including reviews of relevant publications, economic data, and interviews with municipalities, start-ups, businesses, and third-sector representatives. Through this approach, the report highlights the growing momentum of effective reuse practices worldwide, driven by consumer demand for sustainable solutions, businesses recognizing the economic benefits of reducing waste, and evolving policy and regulatory frameworks. The packaging industry is seen as having a high potential for reuse interventions.

It finds that South Africa's waste management situation presents challenges and opportunities, with a large portion of waste ending up in landfills or illegally dumped. The National Waste Management Strategy (NWMS) 2020 aims to transition to a circular economy by diverting waste from landfills. Extended Producer Responsibility (EPR) regulations, introduced in 2021, play a significant role in this transition. The report emphasizes the potential of the circular economy to address gender equality by promoting women's economic empowerment through innovative small, medium, and micro-enterprise (SMME) development. Women-led reuse initiatives are highlighted as examples of how women are driving the reuse economy in South Africa.

Delving deeper, the study assesses the suitability of Cape Town, Ekurhuleni, and uMhlathuze for the CCL project based on criteria such as private and public sector engagement, awareness of waste issues, gender empowerment, and collaboration potential. The City of Cape Town is identified as the best location for the CCL due to its enabling environment for reuse and circularity, high levels of engagement with sustainability, and strong support for women's economic empowerment.

The report recommends that the CCL project in South Africa should focus on building partnerships with local stakeholders, promoting awareness of reusable packaging systems, and supporting women-led businesses in the circular economy. The collaboration between GIZ, ICLEI Africa, and the selected city will be crucial for the successful implementation of the project.



List of Abbreviations

Abbreviation	Definition
BMZ	German Federal Ministry for Economic Cooperation and Development
CCL	Circular City Labs – Testing Reusable Packaging Systems in Cities, a project implemented by GIZ
CCL CCT	Circular City Labs - City of Cape Town
CCT	City of Cape Town
CE	Circular Economy
DFFE	Department of Forestry, Fisheries and the Environment
ESG	Environmental, Social, and Governance
EPR	Extended Producer Responsibility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GHG	Greenhouse Gas Emissions
GDP	Gross Domestic Product
GVA	Gross Value Added
NWMS	National Waste Management Strategy
PIC	Public Investment Corporation
PROs	Producer Responsibility Organisations
SMME	Small, Medium, and Micro-Enterprise
StatsSA	Statistics South Africa
WWF	World Wide Fund for Nature



Definition of Terms

Term	Definition
Circular Economy	A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible (reduce), maximum value is extracted from them whilst in use (reuse), then materials are recovered and products are regenerated at the end of each life (recycle; Africa Circular Economy Network [ACEN], n.d.).
Extended Producer Responsibility	EPR is a policy approach where producers volunteer to take responsibility for the entire life cycle of their products, including post-consumer disposal.
Gross Domestic Product (GDP) at Market Prices	The total monetary or market value of all the finished goods and services produced within a country's borders in a specific period. As a broad measure of overall domestic production, it serves as a comprehensive scorecard of a country's economic health. When employing the income approach, GDP is calculated as the sum of all incomes earned in the process of producing goods and services, including payments for salaries, gross operating margin, and mixed-income. Additionally, it includes taxes on production and imports, with subsidies subtracted (Callen, n.d.).
Gross Value Added (GVA) at Basic Prices	GVA measures the value of goods and services produced in a specific area, industry, or sector of an economy. GVA is used to determine gross domestic product (GDP) at factor cost. As the value-added by the sectors is initially calculated at purchaser value, GVA is derived by subtracting net product taxes from GDP. GVA is sometimes alternatively referred to as value added at basic prices (The World Bank, n.d.).
Reuse	Reusable packaging is intentionally designed for repeated use in the same context for which it was initially created. Employing a circular system, reuse systems facilitate the cleaning, refilling, and repeated utilisation of packaging. Reusable packaging is not transformed for a different purpose but is instead meant to endure multiple stage cycles without undergoing alteration for alternative purposes. Reuse systems are integral to a circular economy and are supported by a functional system that ensures the packaging can consistently serve its original purpose (World Wildlife Fund [WWF], 2022).
Reverse Logistics	The process involves diverting usable material from linear disposal for the purpose of reusing it or capturing its value. This process necessitates the development and execution of systems that not only divert materials but also require initial resources. Reverse logistics is integral to circular economy models, with a strong focus on product life cycles. It includes activities such as product returns for reuse/redistribution, remanufacturing/refurbishment, recycling, and the overall optimisation of the product recovery process (Ellen MacArthur Foundation, n.d.[a]).



1. A Paradigm Shift towards Reuse: Exploring the Potential of Reusable Packaging Systems in South Africa

Our planet faces twin crises: the global waste crisis and a looming climate emergency. These challenges demand a fundamental shift in how we produce and consume. In response, we are at the brink of a paradigm shift, moving from a linear 'take-make-dispose' model to a circular economy. This model prioritises resource conservation and waste prevention, essentially keeping products and materials in circulation for as long as possible. Within this context, reusable packaging systems have emerged as a crucial strategy to create and enable a more sustainable future.

Recognising this critical need, GIZ has launched the 'Circular City Labs – Testing Reusable Packaging Systems in Cities' (CCL) project. Driven by the dual objectives of reducing greenhouse gas emissions through waste prevention and strengthening women's participation in the local circular economy, the CCL will focus on four selected partner cities, from: Tirana (Albania), Medellin (Colombia), Tbilisi (Georgia), (TBD) Kosovo, and/or (TBD) South Africa, serving as laboratories for testing and implementing innovative reusable packaging systems. The aim is to establish demonstrably positive long-term effects on emission reduction, the environment, socio-economic development, and social cohesion, aligned with a green recovery and just transition.

With waste prevention at its core, the CCL will prioritise the establishment of efficient reverse logistics and reusable packaging systems. Aligned with the German government's feminist development policy focus (Federal Government of Germany, 2020), the CCL will actively engage and

collaborate with predominantly female-led businesses and partners.

This baseline study delves specifically into the potential of reusable packaging systems in South Africa. By analysing the regulatory landscape, identifying potential stakeholders, exploring existing initiatives, and identifying sectors suitable for reuse interventions, it aims to determine the most suitable South African city for the CCL project. To this end, this study focuses on three diverse cities — Cape Town, Ekurhuleni, and uMhlatuze — each offering unique geographical, social, economic, and industrial characteristics.

While development cooperation in the circular economy often prioritises end-of-pipeline solutions like sustainable solid waste management systems, waste prevention remains a crucial yet often overlooked aspect. Transitioning to a truly circular economy requires closing material loops through circular product design, reuse systems, and recycling. This has the potential to significantly reduce greenhouse gas emissions and minimise waste leakage into the environment, crucial for addressing the twin crises of climate change and biodiversity loss. Collaborative efforts must prioritise this shift towards upstream circular interventions.

This report delves into the key drivers and challenges associated with this paradigm shift, highlighting the sectors that stand to benefit most from incorporating reuse systems. It showcases global favourable practices and the unique potential for inclusive reuse systems in the Global South, highlighting the critical role of the informal economy. Additionally, it examines the significant role reuse initiatives play in women's economic empowerment, contributing to a more equitable and inclusive business landscape.

By presenting a comprehensive analysis of the South African context and its potential for reuse systems, this report aims to inform the selection of the most ideal cities for the CCL project. This report lays the groundwork for this ambitious journey and will



inform the potential selection of a South African city to participate in the potential pilot project. Interest of the city in these ideas will also inform selection, and, should a city be selected, a full briefing of city officials will take place on the possible process and outcomes of the Circular City Lab. The city will then appoint focal points to participate in the process, with ICLEI Africa as the intermediary.

2. Applied Approach

This study employed a mixed-method approach, combining quantitative and qualitative methodologies to assess the baseline **opportunities, challenges, and impacts of reuse in South Africa**. Understanding dimensions pertinent **women-led businesses, the informal sector, and jobs creation** was prioritised. To achieve this impact where possible, primary and secondary research was conducted. Questionnaires used for collecting information from municipalities and businesses can be found in the Appendix.

The initial phase of the research involved a review of relevant national and international publications, documents, and relevant economic data in South Africa in lieu of a reuse-specific dataset. The WWF definition, as outlined in the introduction, will be the guiding framework for evaluating existing cases. This was set against an analysis of the regulatory environment at a national level, and, where possible, more granularly at a municipality level for the cities of Cape Town, uMhlathuze, and Ekurhuleni.

A literature review and series of meetings and interviews with municipalities, third sector representatives, start-ups, and other businesses prop up the bulk of information gathered in this report. The interviews, conducted with representatives of each of the identified municipalities, as well as 12 start-ups, businesses, private and third sector companies shaped a picture of current understandings of reuse across the

country as well as built a framework for buy-in and engagement for the CCL moving forward.

The data and outcomes from these interviews were validated through additional engagement with relevant stakeholders. Further, interest from the City of Cape Town was propped up by a comprehensive meeting between city officials, ICLEI, and GIZ, aimed at teasing out some of the challenges, and co-design opportunities for the future of reuse in Cape Town. This meeting encouraged ideation and problem-solving in an effort to overcome some of the limitations of the nascent field of reuse in South Africa.

City Selection Criteria

This study focuses on three diverse cities - Cape Town, Ekurhuleni, and uMhlathuze - each offering unique geographical, social, economic, and industrial characteristics. The city selection process employed by GIZ followed specific criteria focused on the potential for successful CCL implementation. These criteria, which can be found in the Appendix, encompass factors such as:

- **Private sector engagement:** Potential for collaboration with local companies interested in piloting reusable packaging solutions.
- **Public sector support:** Openness of municipalities and related public institutions to sustainable development, circular economy initiatives, and supportive legislative frameworks.
- **Awareness:** Public and private sector awareness of waste issues, sustainability, and gender equality.
- **Gender empowerment:** Supportive legislative frameworks, role models for women in circular economy, and businesses open to gender-inclusive practices.
- **Collaboration potential:** Interest from local organisations and networks to collaborate with CCL on circular economy, reuse, and gender initiatives.



Some Limitations Experienced

- **Limited data on reuse:** similar to many other economies, there is a distinct lack of data and case studies on reuse in South Africa, highlighting the need for further research in this area.
- **Underrepresentation of female-owned businesses:** 100% female-owned reuse businesses were not as prevalent as anticipated. This indicates a potential opportunity to further explore, promote and empower women entrepreneurs operating in the reuse sector.
- **Conflation with other circular economy business models:** some organisations misunderstand the concept of reuse, often associating it with recycling, upcycling, or remanufacturing principles. This underscores the need for clear communication and education about reusable packaging systems and associated business models.
- **Survey timing:** survey responses from the City of uMhlatuze, City of Ekurhuleni, and City of Cape Town and other relevant organisations were lower than expected due to the popular summer vacation period (end of year/early new year) in the Southern Hemisphere during the core research period.

3. Trends in Reuse

Effective reuse practices are gaining momentum worldwide, driven by several key factors. Consumers, increasingly burdened by the environmental toll of throwaway culture, demand transformative solutions to consumption. Businesses, once solely driven by profit, are recognising the need to shift towards more sustainable practices due to emerging ESG requirements, consumer purchasing habits, and an understanding of the economic benefits of reducing waste (Meyer, 2021). In this evolving landscape, reuse, the act of extending the

life and functionality of products, is emerging as a powerful model to enable a circular economy.

However, transitioning to a reuse economy does not come without its challenges. Cultural and behavioural shifts require time and education. Economic hurdles, such as higher upfront costs for reusables, need innovative solutions beyond relying solely on corporate sustainability initiatives focused on systems change. Technological innovation is essential for making waste-reduction processes more efficient and cost-effective. Ensuring the quality and durability of reusable products across diverse industries demands robust quality control measures, preventing premature wear and tear that could undermine the environmental benefits of reuse.

Policy and regulatory frameworks are evolving to disincentivise waste generation and incentivise design-for-reuse principles, but data gaps in the Global South hinders decision-making and effective management of reuse initiatives.

Consumer awareness and empowered economic participation of consumers, coupled with public-private systems transformation working towards collective sustainability goals, are crucial for the success of reuse programs. Additionally, global collaboration, financial incentives, reverse logistics, and optimised supply chains are vital for these practices to thrive.

Despite these challenges, the potential of reuse is immense. Several industries stand out for their potential. These include packaging, manufacturing, fashion and textiles, water, construction, agriculture, beverages, and retail, and are identified as having a high potential for reuse interventions. Each of these sectors can significantly benefit from, and contribute to, sustainability and waste reduction through effective reuse strategies. Reuse not only poses a significant business opportunity, with the shift valued at USD 10 billion (Lendal & Wingstrand, 2019), but may also cost companies less than single-use options (Coelho et al., 2020).



The packaging industry, a major contributor to global waste, has seen innovative strides in implementing reuse systems. Recognising the environmental impact of single-use packaging, many companies and governments see the urgent need to shift towards sustainable practices. This shift towards sustainable practices is further fueled by ongoing negotiations for a global plastics treaty under the United Nations Environment Assembly (UNEA). Resolution 5/14, adopted in March 2022, specifically called for the development of "an international legally binding instrument to end plastic pollution, including in the marine environment" (UNEA, 2022).

3.1 Global Trends in Reuse

In Europe, the New Circular Economy Action Plan (European Commission, 2020) sets ambitious recycling targets and promotes the reuse of packaging materials. This legislative framework encourages manufacturers to design packaging for reuse and recycling, significantly reducing waste.

An excellent example is the Loop (n.d.) initiative, a global circular shopping platform designed to eliminate waste by providing reusable packaging for everyday products. Launched in 2019 in partnership with major brands, Loop operates a global reverse supply chain - collecting used packaging from consumers and retailers, enabling deposit-return system, sorting and storing, and finally returning hygienically cleaned packaging to manufacturers for refill. A refundable deposit entices returns, while multiple collection points, including courier pickup, make it effortless. Moreover, Loop links container

returns to brand loyalty programs and discounts, further sweetening the deal. Ultimately, customers embrace the system knowing they're contributing to a cleaner planet by closing the loop on packaging.

Another notable example is Limeloop (n.d.), a 100% female-founded business located in the USA. Limeloop operates as an intelligent shipping platform, providing companies with reusable packaging integrated with smart technology. The company offers smart and traceable reusable packaging crafted from recycled vinyl materials and recycled cotton, available in various sizes. This enables customers to monitor their package's journey and conveniently return it using prepaid labels and dedicated drop-off points. Notably robust, this packaging is designed for reuse, with a lifespan exceeding 200 uses. Each package is equipped with a sensor, ensuring easy traceability, and directly connects to an e-commerce software platform managed by retailers behind the scenes. Through Limeloop, companies have the opportunity to present a sustainable, low-waste packaging option, empowering customers to monitor their packages and facilitate efficient returns.

Globally, the implementation of reuse systems in the packaging industry demonstrates a significant shift towards sustainable practices. These initiatives not only contribute to waste reduction but also model circular economy principles, indicating a growing global commitment to environmental sustainability.

Globally, numerous companies and initiatives showcase successful reuse models:



Organisation name	Reuse type	Category	Example description
Anheuser-Busch InBev (Leuven, Belgium)	Return	Transport packaging	They invested in a comprehensive program of preventative maintenance, pallet redesign, and logistics redesign, enhancing environmental and business performance and extending the lifespan of reusable packaging components.
ClubZero (United Kingdom)	Return	Takeaway	CLUBZERØ, a London-based reusable packaging system, offers an alternative to single-use containers for takeaway and delivery. Their innovative technology ensures endless product life, eliminating waste and fostering sustainability. With over 30,000 customers served and significant reductions in CO2 and plastic usage, CLUBZERØ collaborates with diverse entities – from restaurants and cafes to offices and delivery platforms.
DS Smith (London, United Kingdom)	Return	Transport packaging	This company created the AkyPak 4You, a reusable transport system accommodating multiple products while ensuring product protection during transit and delivering on operational, financial, and environmental requirements.
EcoCentric (UAE)	Return	Household, Grocery and Takeaway	Ecocentric is an online marketplace offering ordering a returnable and reusable packaging system for deliveries, groceries and merchandise.
Full Belly Farm (California)	Return	Transport packaging	A certified organic farm in California, replaced 8,330 waxed cardboard boxes with 2,000 reusable plastic totes with attached lids, resulting in cost and labour savings.
Goodwill Industries	Return	Transport packaging	They replaced wood pallets and fibre corrugated gaylords with the ORBIS OPTEBulk, a reusable pallet and sleeve system, resulting in increased warehouse utilisation, improved trailer utilisation, better worker handling efficiency and safety, and reduced merchandise damage, packaging cost, and environmental impact.
Muuse (Singapore)	Return	Takeaway	This company offers a smart, reusable packaging system for restaurants and the like. Unique tags on each container enable real-time tracking, optimising reuse and ensuring accountability. Going beyond reusables, they measure each item's environmental impact, driving data-driven sustainability efforts.
The Paze GmbH (Germany)	Return	Transport packaging	Paze leverages reusable, inflatable packaging via its patented Aero-Flex tech, eliminating single-use materials and promoting circularity in e-commerce. Their automated system and multi-



			pocket design enhance efficiency and versatility, while the dynamic labelling system minimises waste. This case study exemplifies sustainable packaging innovation and its potential for broader industry adoption.
STIHL Inc. (Germany or Virginia)	Return	Transport packaging	This leading power equipment company eliminated 760 tons of corrugated packaging waste annually by replacing it with standardised reusable packaging containers, realising significant operational improvements and cost savings. The move to reusable packaging also improved inventory management and delivery reliability.
Subaru (Japan)	Return	Transport packaging	By refining its use of reusable packaging, Subaru saved nearly \$16 million by avoiding the purchase of new packaging; eliminated an additional 28,000 tons of cardboard, and achieved its goal of using reusable packaging for 95% of direct ship parts.
Svenska Retursystem (Sweden)	Return	Transport packaging	This program established a common pooling system for more than 200 food producers in Sweden and food manufacturers throughout Europe exporting to the Swedish trade. Since its inception in 2001, nearly 1 billion crates have been delivered, replacing the same number of single-use packaging.

3.2 Global South Trends in Reuse

Many regions, particularly in the Global South, carry out reuse practices; however they often lack the necessary information, data, and infrastructure for effective reuse awareness and management. Inconsistent regulations and the challenge of creating market demand further complicate the global adoption of these practices. The imperative to conduct reuse activities in the Global South is underscored by factors such as resource scarcity, where access to raw materials is limited. In many cases, poverty exacerbates these challenges,

making it crucial to maximise the utility of existing resources. Reuse activities become a strategic approach to address both environmental sustainability and economic constraints. By extending the life of products and minimising waste, communities in the Global South can navigate resource scarcity more effectively, fostering resilience in the face of economic challenges.

Examples in the Global South highlight the potential for localised reuse initiatives: With a more specific focus on the global south, the following examples emerge:



Organisation name	Reuse type	Category	Example description
Algramō (Chile)	Refill	Household and personal care	Refill dispenser system for household cleaning products, mounted on electric tricycles with smart cashless distribution and payment system. Customer loyalty rewards are managed in an app that stores data on product preferences and allows for cashless payment (Lendal & Wingstrand, 2019).
Glassia (Vietnam)	Return	Beverage	Offers a decentralised glass water reuse bottling model, replacing single-use plastic bottles with a circular plastic-free system.
Mottainai Refill (Colombia)	Refill	Household and Personal care	Reduces single-use plastic by refilling household and personal hygiene products, empowering household consumers to reuse containers.
Refillable (India)	Refill	Household	Refillable tackles single-use packaging by collecting used packaging units for a range of products from businesses, meticulously cleaning and testing them, and then selling them back to manufacturers for refilling and reuse. By tracking each unit with a QR code, they provide impact reports and cost savings data, promoting transparency and affordability for businesses seeking a sustainable alternative to single-use packaging.
Reusefy Cup Rentals (South Africa)	Return	Event Services	Reusefy is a South African company dedicated to reducing single-use waste by providing a reusable cup rental service. Their initiative promotes sustainability and environmental responsibility by offering sturdy, branded reusable cups for events, significantly reducing plastic waste and contributing to a cleaner planet.
Siklus Refill (Indonesia)	Refill	Household	Siklus offers an alternative to single-use packaging by providing refills for household products in reusable containers. Consumers bring their own containers or purchase reusables at a discount, refilling everyday items like detergent and shampoo. This system benefits low-income customers, retailers, FMCG companies, and the environment by promoting reusability and reducing waste. Siklus operates through both stationary and mobile distribution models, making eco-friendly options accessible to a wider audience.
Sonke (South Africa)	Refill	Household	Refill stations set up in grocery stores to cut down on packaging. The company estimates that they have diverted over 1.5 million pieces of packaging from landfill.
Tapaware (Malaysia)	Return	Takeaway and ready meals	Promotes a circular economy in the food packaging industry with reusable containers for food delivery.
Ugly Gin Can Refill (South Africa)	Refill	Beverage	Pienaar & Son have deployed a new offering in their beverage range in which customers who have previously bought their signature 'Ugly Gin' in a glass bottle can refill the same gin from an aluminium can, thus reducing overhead and environmental impact for the company while reducing costs for the customer.



Case Study 1: Reusefy, Cape Town (SA)

Reusefy was founded in Cape Town to tackle the environmental issue of single-use waste, particularly in the usage of cups. The company is committed to making reuse a reality in South Africa (Reusefy, 2023).

Reusefy operates by providing sturdy, branded reusable cups made from polypropylene, which are manufactured in South Africa. These cups are available in three sizes and are designed for convenience and reuse. The service encompasses delivery, collection, washing, and repackaging of cups for continuous use. Customers are charged a flat fee per used cup, with an option to impose a one-time eco-fee to fund the service. This model not only promotes cost savings through refills and reduced waste disposal costs but also enhances the customer experience by engaging them in waste reduction efforts (Reusefy, n.d).

During events, Reusefy's physical presence is marked by reusable cups in crates, point-of-sale signage explaining the reuse process and return bins for easy cup return. The company offers an upfront rental fee per cup to confirm orders and encourages customers to contribute a deposit per cup, refundable upon safe return. This deposit can be built into the cost of each drink or charged as an eco-fee. Reusefy collects used and unused cups, refunds the rental fee for clean and unused cups, and recoups a portion of the deposit for any lost or damaged cup. The cups are then washed, sanitized, and repackaged at Reusefy's wash hub, ready for reuse (Reusefy, n.d).

The Oranjezicht City Farm Market, led by the V&A in Cape Town has partnered with Reusefy to implement a reusable cup system, significantly reducing single-use waste. The initiative has prevented 92,000 single-use plastic items and 1 tonne of plastic waste from entering waste streams, saved 40 kgs of plastic pollution, 5,000 litres of water, and 1.5 tonnes of CO₂. The market uses an honesty model for the reusable cup system, emphasizing convenience and sustainability. For every 1,000 cups returned, a tree is planted, contributing to a greener planet. So far, 62 trees have been planted through this initiative. (Reusefy, n.d)

Reusefy's initiative is not only about reducing waste but also about fostering a community of conscious consumers who understand the impact of their choices on the environment. By participating in Reusefy's reusable cup rental service, customers become part of a larger movement towards sustainability and environmental responsibility.

3.3 Women-led Reuse Initiatives

Women's economic empowerment has the potential to go hand in hand with circular interventions through innovative and impactful small, medium and micro-enterprise (SMME) development. The shift to a circular economy offers a potential to tackle structural challenges and inequalities. Therefore, understanding this shift as an opportunity for women's participation in local circular economies is essential to encourage gender equality in this momentum.

Women not only play a crucial role in environmentally sustainable consumption, influencing a substantial portion of household purchases but should also be recognised as knowledge bearers and decision-makers involving

them in addressing global challenges. By raising awareness about sustainable consumption and production and by encouraging women to take on leadership and managerial positions, a foundation for a more inclusive and gender equal circular economy is created (OECD 2021). These initiatives not only promote environmental sustainability but also offer avenues for income generation and skill development for women.

One noteworthy example is The Refillery (n.d.), a 100% female-founded refill business located in South Africa. This initiative offers package-free groceries, household products, and cleaning supplies, actively encouraging customers to bring their own containers or use the provided reusables.

In Thailand, Sai Yok Springs (n.d.), led by the female co-founder Elodie Radach and her husband with an



80% female workforce, pioneers a reuse system for water bottles. Operating a network of smart vending machines dispensing returnable water bottles, Sai Yok Springs allows consumers to purchase beverages in these bottles, paying a small deposit. Upon consumption, customers can return the empty bottles, reclaiming their deposit and contributing to environmental protection. Radach significantly reduces plastic waste, promotes a circular economy, empowers women, and offers convenience for consumers.

In Germany, Boomerang Packs (n.d.), led by a female co-founder and supporting Girls' Day initiatives, champions reusable shipping bags for e-commerce. These eco-friendly alternatives minimise packaging waste, promote a circular economy, and offer convenience for both retailers and consumers, all while inspiring young girls to embrace sustainability through STEM careers.

In New Zealand, Again Again (n.d.), a female-founded platform, empowers reusable packaging systems by tracking assets, incentivizing returns, and offering data insights. Their B2C focus and integrations with point-of-sale and barcode cards aim to normalise reuse, minimise waste, and drive a future free from single-use packaging.

These case studies demonstrate how reusable packaging can significantly reduce waste and emissions while also providing cost savings and operational efficiencies. They serve as a few among many examples for companies looking to adopt sustainable packaging practices (Reusable Packaging Association, n.d.a). Additionally, a McKinsey article provides insight into the potential impact of reusable packaging, detailing aspects like CO₂ emissions, energy consumption, and the number of rotations for reusability (Gruenewald et al., 2023). It presents scenarios for e-commerce in Germany and takeaway food service in Belgium, providing a comprehensive view of the environmental and financial implications of reusable packaging. The Reusable Packaging Association

(n.d.b) outlines the broader environmental impacts of reusable packaging, such as reduced solid waste, lower CO₂ emissions, decreased energy and water consumption, and lower product waste.

3.4 Circular Economy, Waste, and Reuse in South Africa

South Africa's Waste Management Situation

South Africa's waste management situation presents both challenges and opportunities. Varying reports suggest the annual generation of approximately 122 million tonnes of waste, with only 10% undergoing recycling or recovery. The rest ends up in landfills or is illegally dumped (De Villiers, 2022). A contrasting report commissioned by the United Nations Environment Programme (UNEP; Polasi et al., 2020) estimates the total domestic waste generation at a lower figure of 12.7 million tonnes per year, with approximately 3.67 million tonnes not collected and treated through formal waste collection systems, leading to large amounts being dumped illegally. It is estimated that 2kg of waste are generated per person per day in South Africa (World Bank, 2018).

South Africa's linear economy, characterised by a highly extractive "take-make-waste" model (Godfrey, 2021a), results in substantial resource consumption and large amounts of waste generation (Hoosain et al., 2023), with only 2% of materials being cycled back through recycling and reuse activities (Blottnitz et al., 2021 cited in Godfrey, 2021a). The waste stream includes diverse components, such as 30-40% domestic solid waste is organic, 10-20% paper and packaging, and notable amounts of electronic and construction/demolition waste (Keerthana, 2021). Factors contributing to waste management challenges include rapid urbanisation, population growth, and a lack of compliance with waste management practices, exacerbated by high urbanisation rates. Many of the country's landfills are not compliant with current legislation, leading to environmental pollution (Reusable Packaging



Association, n.d.b). Despite these challenges, the country's informal waste sector, comprising over 90,000 waste pickers, plays a crucial role in diverting recyclables and saving municipalities significant landfill costs (Reusable Packaging Association, n.d.b).

The South African government has implemented various strategies to address waste management issues, including through the National Waste Management Strategy (NWMS) 2020, which aims to prevent waste and divert it from landfills by leveraging the concept of a circular economy. The NWMS emphasises a transition to a circular economy, waste beneficiation, job creation, and development of SMMEs in the waste management industry. This strategy sets ambitious goals, including diverting 40% of waste from landfill within 5 years, 55% within 10 years, and at least 70% within 15 years, with a vision for zero waste to landfill beyond 2035 (Keerthana, 2021).

The capacity of municipalities (and cities) to deal with waste effectively is a major challenge. Infrastructure development, improved waste collection services, and the integration of informal waste pickers into formal waste management processes are identified as crucial needs (Keerthana, 2021). Despite the challenges, the South African waste management market is growing, valued at approximately \$280 million in 2020 and expected to reach \$330 million by 2025, driven by population growth, environmental awareness, industrialisation, and urbanisation (Research and Markets, 2021).

The introduction of Extended Producer Responsibility (EPR) represents a significant shift, with regulations implemented as part of the updated NWMS (Polasi et al., 2020). The 2020 NWMS emphasises promoting reuse systems and circular economy principles in product and packaging design, calling for public-private collaboration and informal sector engagement. The EPR regulations, effective from May 2021, mandate producers to take responsibility for their products' entire lifecycle,

aligning with the circular economy vision. As South Africa faces challenges related to waste legislation and definitions, global commitments, such as the UN Agenda 2030: Sustainable Development Goals, and the introduction of EPR regulations, are expected to drive increased reuse activities. The circular economy, particularly reuse, aligns with Goal 12: Responsible Consumption and Production, emphasising waste reduction through prevention, reduction, recycling, and reuse.

Drivers of Circular Economy in South Africa

Of course, the circular economy, and reuse in particular, are not synonymous with waste management. In terms of tangibly mitigating the amount of waste produced in its economy, there are a number of actors across societal sectors driving the circular economy transition in South Africa. This reflects growing momentum and interest from multiple parties, whose various initiatives have nevertheless yet to coalesce in a holistic manner.

At the level of national government, the primary mandate of advancing the circular economy sits with the Department of Forestry, Fisheries and the Environment (DFFE). The DFFE thus represents the country at international platforms such as the African Circular Economy Alliance. To bridge the technical gap, however, the national Department of Science and Innovation (DSI) and its associated entities — most notably the, Council for Scientific and Industrial Research (CSIR), National Research Foundation (NRF) and Technology Innovation Agency (TIA) — have also played an increasingly prominent role in building the necessary platforms for research, capacity-building and innovation in service of the circular economy transition. Such initiatives include the following:

- The establishment of research, development and testing sites for circular technologies and products, such as the Bio-refinery Research Consortium (DSI, n.d.a) and associated Bio-



refinery Industry Development Facility (DSI, n.d.b);

- The publication of books, technical reports, concept notes and other research materials in relation to key sectors to serve as an evidence base for other actors to develop and implement circular forms of science, technology and innovation (CSIR, n.d.); and
- The strong inclusion of the circular economy within the Science, Technology and Innovation Decadal Plan 2022–2032 (DSI, 2022).

However, amidst this growing focus on a meaningful paradigm shift in the South African economy to one of fundamentally more sustainable resource management, there is still a lack of overall strategic guidance from the national government, namely in the form of a national circular economy policy. As such, despite the wealth of evidence produced and collaborative research and development (R&D) initiatives undertaken by the DSI, the overarching regulatory environment to enable, promote and incentivise business experimentation and market development has not yet been established. The end result is that (as detailed in Section 3.6) institutionalised state regulation and encouragement of the circular economy in South Africa is still primarily defined by waste management, with a focus on product end-of-life and few holistic interventions along the entire value chain of products.

Within this relatively blurry regulatory environment, much of the gradual circular economy transition in South Africa is being driven by a combination of entrepreneurs, business incubators, academia, civil society, private-sector and multinational funding schemes and intermediary organisations that aim to integrate these various groups. Incubator groups include companies such as FETOLA. Academic role-players are represented by strategic research units embedded within major universities, including the Centre for Sustainability Transitions (Stellenbosch University) and Process, Energy & Environment Technology Station (University of Johannesburg).

Some examples of organisations building bridges between various circular economy actors include the African Circular Economy Network (ACEN; n.d.) and GreenCape (n.d.), which focus on removing barriers to the circular economy through a range of knowledge brokering, evidencing and piloting initiatives. In such undertakings, multinational financial institutions, such as the African Development Bank, EU member states and UN entities, often play a key role in funding programmes attempting to mainstream the circular economy. Larger private entities pioneering the commercialisation of circular technologies and approaches include the likes of the V&A Waterfront, a retail and tourism centre in Cape Town. With ownership of significant portions of land and influence over a multitude of tenants, entities such as these present promising opportunities for circular partnerships and test-beds. Its tourism-focused business model and consumer-facing nature also provide a potential pathway towards popularising circular models, thus stimulating greater consumer buy-in and demand, which is currently limited to a small percentage of the population.

From a plastics perspective, this is neatly addressed by the ambitious yet well-led SA Plastics Pact. The SA Plastics Pact is a collaborative initiative of businesses, civil society, and third sector stakeholders. aimed at creating a circular economy for plastic packaging in South Africa by 2025. Its goals include making all plastic packaging reusable, recyclable, or compostable, achieving a 70% effective recycling rate, and incorporating an average of 30% recycled content across all plastic packaging. (SA Plastics Pact, 2024)

While only serving as a brief overview of the role-players involved in South Africa's circular economy, and the nature of their relationships with one another, this section demonstrates a wealth of latent energy and existing initiatives. In effect, South Africa possesses the necessary pieces to drive the transition to a circular economy, merely lacking the



necessary overarching regulatory framework to align their efforts. Within that vacuum, however, there lie many opportunities for the rich ecosystem of non-governmental actors and funders already in various stages of collaboration to experiment with novel circular practices and business models. Given the lack of institutional support needed to drive larger shifts in terms of water and energy use and large-scale process, such as mining, manufacturing and agriculture, much of the interplay currently seen in mainstreaming the circular economy in South Africa is best suited to the reuse economy, which offers a design thinking entry point to a broader circular transition.

South African Regulatory Environment Analysis

The regulatory landscape for the reuse economy in South Africa is undergoing significant transformation, driven by the Extended Producer Responsibility (EPR) Regulations, introduced in May 2021. These regulations play a critical role in shifting towards a circular economy, emphasising waste minimising waste and making the most of resources. Under the EPR approach, producers (manufacturers, importers, and brand owners) are accountable for their products' entire lifecycle, particularly the end-of-life stage (Keerthana, 2021). This includes managing the collection, pre-treatment (sorting and dismantling), reuse, recovery (recycling and energy recovery), or final disposal of their products and packaging.

The transition from a voluntary to a mandatory EPR system aims to address concerns like 'free riders' who benefit from the efforts of others and broaden company responsibilities for their products' end-of-life management. This shift is essential for South Africa, given the limited capacity of landfills and the national push towards material diversion for reuse within a circular economy.

The effectiveness of this system hinges on Producer Responsibility Organizations (PROs), established entities that can be non-profit, for-profit, state-led, or

industry-led. The success of the PROs depends on effective organisation, financing, administration, and control mechanisms.

Financial management is crucial in this context. The cost of waste management, including collection, sorting, and recycling, is significant and increasing. EPR schemes require proper financial management to be effective, including ensuring a level playing field for producers and importers, avoiding double payment, and clearly defining the point of fee payment. These fees are intended not only to cover end-of-life management costs but also to incentivize better product design to minimise these costs (Keerthana, 2021).

Furthermore, for the EPR system to be effective, it's vital to have clear targets and standards. The proposed targets in South Africa's draft EPR regulation include recycling rate, reuse, and recycled content. Accurate and credible data on packaging, waste generated, and financial flows are essential for monitoring progress and maintaining accountability. This requires standardised and harmonised definitions and calculation methods, agreed upon by all parties (Keerthana, 2021).

However, it's important to note that regulations alone are not sufficient. Effective implementation of these regulations requires support from a well-developed recycling and waste management sector. Without this, there's a risk of greenwashing, where companies might meet regulatory requirements on paper but not in practice (Prinsloo, 2023). Service providers in the recycling and waste management sector are crucial for ensuring the practical fulfilment of producers' commitments (De Kock, 2021).



Connecting the Dots - Regulatory Snapshot

South Africa's regulatory environment pertaining to the reuse economy is shaped by various legislations and regulations that encompass a broad range of environmental, social, and governance (ESG) issues, as well as specific waste management and recycling rules.

- **Environmental, Social, and Governance (ESG) Related Regulations (Davids et al., 2024):**
 - Regulation 28 of the Pension Funds Act, 1956: Mandates pension funds and their boards to consider ESG factors that may materially affect the sustainable long-term performance of an asset.
 - Prudential Standard GOI 3 for Insurers: Issued by the Prudential Authority, this requires insurers' investment policies to account for ESG factors.
 - Public Investment Corporation (PIC) Amendment Act, 2019: Requires the PIC to consider the benefit of members or beneficiaries and promote sustainable development when investing deposits.
 - JSE Listings Requirements: JSE-listed companies are subject to general continuing disclosure obligations on financially material ESG issues.
 - King IV Report on Corporate Governance for South Africa, 2016 (King IV): Outlines principles for good governance, including responsible investment incorporating ESG factors
- **Waste Management and Recycling Regulations (Pienaar, 2020):**
 - National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008, amended **2022**): Governs waste management in South Africa, promoting pollution prevention, conservation, and ecologically sustainable development. In this act, "re-use" is defined as "[utilising] articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles"
 - Amendment to the Waste Act (2020): Introduces Extended Producer Responsibility (EPR), requiring producers to implement EPR measures for specified products, with targeted recycling rates and development of effective collection and recycling activities.
 - Recyclable Materials: Covers a wide range of products including plastic packaging, electronic equipment, metals, paper products, etc.
 - Recycling Targets: Sets specific targets for recycled content in various products (e.g., plastic PET beverage bottles, single-use plastic products, glass packaging) and collection targets for different materials.
- **Recent Developments in 2023:**
 - National Environmental Management Act (107/1998): Regulations to domesticate the requirements of the Rotterdam Convention requirements for certain hazardous chemicals and pesticides in international trade, published in February 2023 (DFFE, 2023a).
 - Consultation on the Draft Strategy for Reducing Food Losses and Waste, published for public comment in September 2023 (DFFE, 2023b).

Growth Potential of the Reuse Economy in South Africa

While South Africa's transition to a circular economy has embraced recycling, data on the reuse economy remains scarce (Lange et al., 2022). Although studies have explored the socio-demographic aspects of residential waste reuse, larger-scale information on commercial reuse practices, particularly regarding reusable packaging, is lacking (Lange et al., 2022).

Existing data suggests that reuse currently contributes only a small fraction of the country's circular economy, particularly when compared to recycling (DFFE & DSI, 2020).

Despite this data gap, compelling evidence points to the crucial role of reuse as part of the broader transition to circularity in South Africa. For example, only 14% of annually generated plastic waste is recycled, primarily due to technical limitations and



the lower cost of virgin plastic material (Sadan & De Kock, 2020). This, coupled with a projected 3% annual increase in plastic consumption per capita (PlasticsSA, 2021 cited in Govender et al., 2023), highlights the underexplored potential of reuse as a key component of the country's circular transition.

Beyond the environmental benefits, reuse offers significant economic advantages. South Africa, grappling with an official unemployment rate of 31.9% (Statistics South Africa [StatsSA], 2023), stands to gain a 3% GDP boost from the waste sector, driving economic development and creating new employment opportunities (Wijnberg, 2022). Speaking from the perspective of a circular business incubator, Wijnberg (2022) emphasises the improved efficiency and profitability achieved through the combined recycling, repair and reuse of products and materials. This is echoed in a study by Mativenga et al. (2017), where 22 industrial companies identified cost reduction as the primary motivator for circular practices, followed by factors such as product innovation, competitive advantage, and proactive anticipation of future environmental regulations and legislative requirements.

However, barriers impede the widespread adoption of circular practices, especially reuse. In a survey of circular economy experts working across the continent of Africa, 48% of respondents reported insufficient knowledge on how to reuse and upcycle different forms of waste into new products (Nijman-Ross et al., 2023). Unlike recycling, which often involves externalised waste collection and processing, reuse requires companies to pursue new knowledge and skills, adopting new processes, and potentially alter existing business models. Although the long-term financial benefits are promising, initial skills shortages and organisational inertia can pose significant barriers to wider adoption of reuse practices. This lack of knowledge on the implementation of reuse measures among businesses potentially reflects a broader need for awareness measures across civil society as well as government and municipal levels, which respectively

create the demand and the enabling environment for reuse initiatives.

Despite these challenges, there are encouraging examples of reuse initiatives in South Africa:

- **Industrial reuse is gaining traction.** For example, the study conducted by Mativenga et al. (2017) reveals robust reuse practices in manufacturing within 22 companies engaged with composite waste that were surveyed. Similarly, a GreenCape (2022) case study showcases successful applications of reuse practices in construction and demolition waste management in the built environment. Research conducted by Hassim (2021) further highlights reuse adoption in sectors like renewable energy and water reticulation.
- **Consumer-facing potential is promising.** Though less prevalent, a major clothing retailer, Mr Price, experimented with reusable packaging solutions, the success of which relied greatly on shifting consumer behaviour. Despite great ambitions and piloting, the retailer explained how the difficulty in ensuring that customers reused or returned their plastic shopping bags prompted the company to shift its focus from reuse to recycling, ensuring that all shopping bags are made from 95% recycled plastic (Hassim, 2021). Beverage companies, both small and large like Pienaar & Son as well as SAB, are working to incorporate reuse into their systems (Pienaar & Son, n.d.; SAB, n.d.)

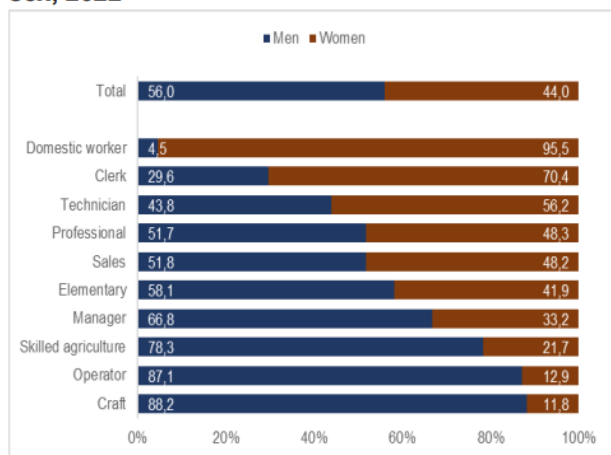
These examples, and willingness from different sectors to explore alternative reuse models is promising, and highlights the untapped potential for realising reuse-related benefits in environmental protection, efficiency, profitability and employment in consumer-facing industries of expanding into other sectors of the economy namely retail, gastronomy, beverages, tourism and events.



Women in the Circular Economy: Drivers for Reuse in South Africa

South Africa has made significant strides towards gender equality, ranking 20th out of 146 nations in the 2023 Global Gender Gap Report. This progress is particularly evident in political empowerment, where the country stands 13th globally, showcasing the increasing number of women in leadership roles (Mjoli, 2023). As of 2023, the South African labour force consisted of 24.6 million individuals, of which 16.7 million were employed and 7.8 million unemployed (StatsSA, 2023). As of 2022, men make up almost double the proportion of managerial positions of women in South Africa. Whereas 66.8% of men occupy managerial positions, only 33.2% of women are employed as managers (StatsSA, 2022). Compared to men, women are also overwhelmingly more commonly employed as domestic workers, accounting for 95.5% (StatsSA, 2022)

Figure 4.5: Employment shares by occupation and sex, 2022



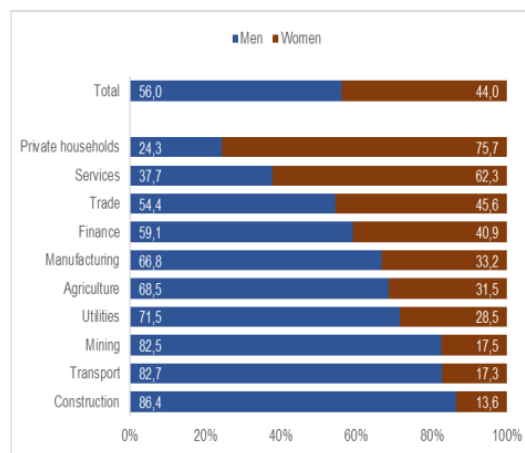
(Graph from StatsSA, 2022: 40)

However, challenges remain, including high unemployment rates for women (around 50%), a persistent gender wage gap, and the impact of the HIV/AIDS crisis on women. Recognising the crucial link between women's economic empowerment in addressing gender-based violence and femicide, and social well-being, the South African government actively pursues initiatives to promote women's access to resources and economic opportunities

(The Presidency, 2023) in order to close gender gaps and address underlying inequalities (SA News, 2023).

The South African government has actively pursued gender equality initiatives both nationally and internationally. Efforts range from supporting the adoption of a Protocol on Women in Trade for the African Continental Free Trade Area to earmarking 40% of public procurement for women-owned businesses. In the 'Women Business Owner benchmark' South Africa climbed up two spots to rank 44th in 2021, with women owning 21.9% of businesses (Radebe & Smith, 2023). In 2022, the three industries with the highest rates of female employment were 'private household' (75.7%), 'services' (62.3%) and 'trade' (45.6%) industries (StatsSA, 2022).

Figure 4.2: Employment shares by industry and sex, 2022



(Graph from StatsSA, 2022: 37).

Training programs for women entrepreneurs and commitments from entities like the Industrial Development Corporation demonstrate a concerted effort to empower women economically. Ongoing challenges, such as unemployment and the gender wage gap, underscore the need for sustained efforts to achieve comprehensive gender equality in South Africa (The Presidency, 2023). The unemployment rate is higher among those who have low levels of formal education and do not have a matric certificate (i.e. completed Grade 12; StatsSA, 2022). StatsSA



(2022: 5) further highlights that, 'Women and persons without previous work experience are more likely to be in long-term unemployment.' Furthermore, black Africans continue to have greater unemployment rates than other demographic groups, with women recording 39.6% in 2022 (StatsSA, 2022). At the heart of these efforts lies South Africa's women economic empowerment plan. This plan is anchored by the collaborative Women Economic Assembly (WECONA; n.d.), involving the private sector, civil society, women's organisations, businesswomen and the government (Competition Commission South Africa, 2023). WECONA aims to boost the participation of women-owned businesses throughout the entire economic value chain, driving sustainable economic development and transforming ecosystems to enable women entrepreneurs' success. This includes increasing the share of women-owned businesses in public procurement from the current 1% to at least 25%, aligning with the African Union's Agenda 2063 goals. It also encompasses broader measures like enhancing access to financing for women-owned businesses, especially in rural areas, and promoting land allocation for women in farming, targeting at least 50% of allocated state land; and improving women's representation in managerial roles in the private sector. This effort is seen as crucial for addressing the challenges faced by vulnerable sectors of the economy, particularly in light of the COVID-19 pandemic's disproportionate impact on women, which has intensified pre-existing structural inequalities and gender norms (The Presidency, 2021; SA News, 2021a). These actions highlight the commitment to establishing a more equitable role for women in South Africa's socio-economic development, recognising that gender equality is vital for the nation's overall growth and prosperity (SA News, 2021b).

Beyond national efforts, the circular economy presents a significant opportunity for women's entrepreneurship, particularly in the informal sector. Here, women lead small-scale, community-focused

initiatives in reuse, upcycling, and sustainable product creation, playing a crucial role in waste reduction, recycling, and sustainable resource use. These women-led enterprises, though often informal, are integral to South Africa's transition towards a more sustainable, inclusive and equitable economy. They empower women economically, providing income and employment opportunities in communities.

Supporting and recognising these women entrepreneurs in the circular economy can have a transformative impact. By enabling access to resources, training, and networks, these entrepreneurs can scale their operations and increase their positive environmental and social impact. This support can come from both the public and private sectors, including policies that recognise and bolster the role of women entrepreneurs in the informal economy.

Women's entrepreneurship in the informal reuse sector is a vital component of South Africa's circular economy, offering a sustainable path for both economic development and environmental conservation. While national policies like the Women Economic Empowerment Plan and specific funding initiatives provide strong support, effective engagement and adaptation at the city level is crucial to maximise their impact. Encouraging robust collaboration between national and city governments, tailoring national policies to local needs, and sharing successful models among cities can unlock the full potential of this sector, empowering women entrepreneurs and driving a more sustainable future for South Africa's diverse urban landscape.

A Gendered Lens on Reuse

Research suggests that gender plays a role in attitudes towards waste and reuse (Samson, 2010). A South African study conducted by Lange et al. (2022) in Ekurhuleni, Gauteng, found that women exhibit stronger pro-environmental behaviours compared to men, including a higher rate of waste



reuse and a more positive attitude towards it. Notably, women reuse plastics considerably more and reject negative stereotypes about reuse being unhygienic or time-consuming. The study, focusing on households led by women aged 31-50, suggests traditional household roles and heightened environmental awareness may contribute to these differences. However, it also highlights a crucial gap in understanding how gender dynamics influence reuse within the more localised context of businesses.

Women-led Reuse and Refill Businesses in Action

While data and best practices on women-led businesses in the reuse sector are scarce, there are women entrepreneurs championing elements of reuse and refill in the retail sector. Using the WWF definition of reuse, that captures systems that support cleaning, refilling, and repeated use of packaging, examples include (WWF, n.d).

Case Study 2: [Waterpod](#) by I Drop, Cape Town (SA)

'Waterpod' is a water refill station developed by I-Drop Water Holdings. I-Drop Water Holdings is a start-up social impact company and a for-profit organisation in Cape Town, South Africa and was founded in 2015 by Kate Thiers and her husband James (EnSpire Oxford, n.d.; Ishani. 2021).

Operating in the African retail water (drinking) market, Waterpod aims to eliminate single-use plastic waste and offer a solution for purified bottled water that is unaffordable to many (EnSpire Oxford, n.d). The Waterpod inspires consumers to refill their own bottles as an alternative to buying additional bottled water, therefore enabling them to reduce plastic waste generation (Ishani. 2021). Furthermore, the company offers affordable purified/filtered water, making clean water accessible to consumers from various income groups.

In 2021, I-Drop won first place in the SA Plastics Pact 'Reuse Innovation Challenge'. The challenge aimed to identify novel reusable packaging solutions that could be successfully applied at local retailers while also reducing the use of plastic (Ishani. 2021). In accepting the award, Kate Thiers alluded to the role of businesses in assisting consumers to reduce waste "It is up to us in business to create convenient and affordable choices for consumers to go single-use plastics free" (The Plastics Pact. 2021).

How the Waterpod process works: When a Waterpod gets installed at a grocery store, a contract is signed between the relevant parties, at no upfront cost. Customers refill their own containers with water and pay at the register for the amount of water they refilled. With the help of I-Drop's remote monitoring technology and revenue share business model, I-Drop keeps an account of all water sold and bills monthly payments for 50% of water sold (I-Drop Water, n.d.).

These examples illustrate how women entrepreneurs are practising reuse and a more circular economy in South Africa. While women entrepreneurs are driving South Africa's reuse economy and paving the way for a more circular future, they face unique challenges that hinder their potential. In the male-dominated waste industry, Kate Thiers, the Co-founder of Waterpod by I-Drop, stated that women often feel undervalued, overlooked in meetings, and treated less favourably than their male counterparts (EnSpire Oxford, n.d.).

They grapple with underrepresentation, particularly in leadership positions (Adam, in Govender, 2023). Launching their businesses without initial support networks or funding is just the beginning. Women in this sector lack support when starting out, however, once they begin to succeed the very individuals who refuse to assist try to take advantage of them (Mnyango, in Govender, 2023). To further complicate matters, societal norms often ridicule female individuals who work in the collection, sorting and recycling industry (Mnyango in Govender, 2023).



Case Study 3: Shop Zero, Cape Town (SA)

In Cape Town, Shop Zero was established in 2017 by Janneke Blake to address the need in the South African market for a space that offers products necessary to reduce environmental and plastic footprints (Holtzhausen, 2020; Gatticchi, 2023).

“South Africa is facing significant environmental challenges, including pollution, deforestation and water scarcity. Shop Zero is helping to reduce waste and promote sustainable living, which can have a positive impact on the environment and society as a whole.” - Janneke Blake, Founder and Owner of Shop Zero (Gatticchi, 2023).

Shop Zero has been operating a fully online store since closing down their physical store in September 2023, they are currently looking for a suitable location to operate a new physical store (Shop Zero, 2023). Regardless of how their customers chose to shop, they have various approaches in place to reduce waste.

During operation, the physical store stocked plastic-free, single-use plastic alternatives, and environmentally friendly products (Gatticchi, 2023; Holtzhausen, 2020). The physical shop served products in bulk via its refill stations where customers could stock up on their favourite products. Customers who did not have their own containers were able to buy products by purchasing glass jars from the store that are intended for reuse, or by using brown paper bags provided. Customers were encouraged to bring along their own containers (bottles or jars) to reduce single-use packaging (Holtzhausen, 2020; Gatticchi, 2023). Furthermore, customers had the option to donate their old jars to the shop so that other customers could reuse them again for free (Blake, 2024). The founder emphasised that “The most eco-friendly thing you can do is use what you already have” (Gatticchi, 2023).

To decrease the amount of waste generated when couriating to online consumers, the shop reuses boxes delivered to them by their suppliers or boxes donated to them by friends and family. The boxes are then sealed with 100% biodegradable paper tape (Gatticchi, 2023). Customers are encouraged to reuse the boxes before recycling them as well as to reuse the paper bags three times or more in an effort to reduce their carbon footprint (Gatticchi, 2023). The online store previously offered a free packaging option for shipping (specifically in Cape Town) in the form of reusable and returnable glass containers however, they discontinued this service but do hope to reinstate the service in the future (Blake, 2024). A refundable deposit amount of R25 was charged on each container regardless of the size, customers could then swap out the container for another one when making their next online purchase. Furthermore, once customers returned the container in good condition, the containers were cleaned and sanitised by the store (Blake, 2024).

Shop Zero is a 100% female-owned business and they empathise and align their values with the difficulties women in South Africa are confronted with. One of the organisations they have collaborated with is the ‘Mhani Gingi Social Entrepreneurial Network’ to establish a distinctive soap-making project. The project’s objective is to empower abused women by offering job-skills training, developing their entrepreneurial capabilities and providing them with an income (ShopZero, n.d.).

Addressing these challenges and recognising the vital role of women in the reuse sector is crucial for unlocking its full potential in South Africa's sustainable future. Sustainability programmes have the power to cultivate inclusion by actively involving women in design and implementation, addressing existing gender inequalities and fostering diverse perspectives (Adam cited in Govender, 2023). As large organisations embrace the benefits of diverse

teams, the waste industry may finally witness a fairer representation of women. Their unique contributions can lead to better problem-solving, increased creativity, and overall success. And while the road ahead may be bumpy, women like Kate Thiers, with their ‘solutions-driven’ spirit and unwavering determination, demonstrate that overcoming challenges is a journey, not a destination (EnSpire Oxford, n.d.). By acknowledging



the hurdles women face and actively nurturing opportunities for their growth, these entrepreneurs can be empowered to drive a thriving reuse economy through the facilitation of refill models, and ensure a sustainable future for South Africa.

The Informal Sector and Reusable Packaging Systems in South Africa

While recycling often takes centre stage in circular economy discussions, South Africa's informal sector plays a vital role in reuse as well. Informal waste reclaimers, estimated to number as high as 215,000 (Godfrey & Oelofse, 2017), collect a significant portion of the country's recyclable materials. In 2014, informal waste reclaimers were responsible for collecting 80–90% (by weight) of post-consumer paper and packaging waste in South Africa providing considerable valuable services and financial savings at no cost to municipalities and businesses (Godfrey et al., 2016 cited in Godfrey, 2021b).

However, recent efforts to formalise the recycling industry through EPR schemes and PROs have presented challenges for these informal workers. Increased competition from formal businesses and rising unemployment have led to a decrease in the total mass of material collected by informal reclaimers (Godfrey, 2021b).

Amidst these challenges, the informal sector holds immense potential for involvement in the reuse economy, particularly in reusable packaging schemes. In response to the low availability or value of recyclable materials, many waste reclaimers opt to salvage products and materials with the aim of repairing, reusing or repurposing them (DFFE & DSI, 2020). In some instances, waste reclaimers have been found to specialise solely in the sale of reusable materials (Reyneke, 2017; Samson, 2017 cited in DFFE & DSI, 2020). Building on these trends, waste reclaimers can contribute to various aspects of the reuse value chain, including the collection, transportation (facilitating refill-return systems) and even cleaning of reusable containers. This could also empower reuse models driven by women or youth

actively innovating in the informal economy. Moreover, integrating informal workers into formal systems would improve their often-harsh working conditions and lack of legal protections (DFFE & DSI, 2020). More broadly, reuse systems offer significant social, environmental and economic benefits. They create new jobs, develop skills (e.g. refurbishing) and improve community health by reducing environmental hazards like water contamination.

However, a shift to reuse systems could also have unintended consequences on those creating a livelihood in the informal recycling economy. For example, replacing single-use materials like PET bottles with reusable alternatives could negatively impact the income of informal reclaimers. Stakeholders focused on the reuse economy need to carefully consider potential risks and develop strategies to mitigate them. For instance, the potential income lost from the selling of recyclable bottles could be offset by a refund system for the return of reusable bottles at accessible collection points or directly at affiliated businesses. To better understand these opportunities and risks, there is a need for further research on the types of reusable materials and products collected by informal reclaimers and their dominant markets. Ultimately, these data need to be translated to clear guidelines, similar to those for waste reclaimers, for the recognition and integration of informal workers into the formal reuse economy.

4. Circular City Lab South Africa: Assessing the Landscape

Taking into account the framing and context provided in the report, the aim of the baselining is to assess not just the potential in South Africa at large, but the rollout of CCL in a specific municipality in the country. Here, scoping a baseline for a diverse set of cities became pertinent in understanding the range of economic, governance, and sectoral



opportunities and challenges present. As such, the City of Cape Town, the City of Ekurhuleni, and the City of uMhlathuze were chosen for analysis. The City of Cape Town and City of Ekurhuleni are primary cities and City of uMhlathuze is a secondary city, allowing for a breadth of potential inroads and interventions. Engagements with representatives of the municipalities as well as economic composition, informality, women's economic empowerment, and environmental policy inform the overview provided below. This is followed by an analysis of the challenges and enablers of launching the CCL in each city. It is worth noting that the depth and breadth of information available on each city is not equal — a fact which ultimately feeds into the final decision-making process.

4.1 City Overviews

Cape Town

The City of Cape Town is a significant part of South Africa's economy, being the third largest contributor to the national GDP and accounting for 9.8% of the national output in 2018 (Department of Cooperative Government and Traditional Affairs, 2020). Its contribution is even more pronounced within the Western Cape province, where it accounts for 71% of the economic output. The city's economic trends generally mirror national trends but often outperform the national average GDP growth rate. In 2018, Cape Town's GDP growth rate was 1.3%, higher than the national rate of 0.8%. From 2014 to 2018, Cape Town's GDP per capita was 33% higher than the national average.

The economy of Cape Town is primarily driven by the finance, community services, trade, and manufacturing sectors, which combined contributed 83% of the total economic output in 2018. Notably, the finance sector saw a slight increase in its share, while manufacturing experienced a marginal decline. The finance sector also recorded the strongest average growth rate between 2014 and 2018.

The city's primary sector, consisting of mining and agriculture, saw varying growth rates, with agriculture peaking in 2017 and mining in 2014. However, the mining sector experienced a significant decline in 2018. The secondary sector, including manufacturing, electricity, and construction, showed fluctuating growth, with manufacturing and construction experiencing a downturn in 2019. The tertiary sector, encompassing trade, transport, finance, and community services, had varying growth rates across different years, with notable growth in trade and finance sectors in 2011.

The informal sector, historically associated with informal trading, is increasingly recognized for its broader impact on the local economy, particularly in terms of employment and poverty reduction. The sector's employment contribution rose from 5% in 2001 to 11.3% in 2018. The City's Inclusive Economic Growth Strategy aims to further emphasise this sector's role in the local economy.

Due to the woven landscape of industry present in Cape Town, there is also a prominent packaging sector. While there is no specific data available on the production and use of packaging due to a lack of clarity on import and export, it is self-evident that each of the broader sectors rely directly on packaging for transport of goods. Given the city's sizable economic output, and high GDP per capita, it could also be assumed that consumption rates are higher than the rest of the city and thus more packaging is consumed, and waste is produced.

The most prominent packaging companies in the city are:

1. **Merrypak:** Founded in 1985, Merrypak began as a small printing company and has grown into a comprehensive packaging factory. The company specialises in a wide range of packaging products including carrier bags, boxes, wrapping, bottles, and jars. Merrypak is notable for its commitment to an inclusive workplace, employing staff with varying



degrees of disability and providing opportunities for those who might not easily access the job market (Merrypak, n.d.; Parker, 2019).

2. **Techpak Carton Manufacturers:** Techpak specialises in the manufacture of corrugated board and cartons. They offer a wide range of corrugated board products catering to various customer requirements (Techpak, n.d.).
3. **Transpaco Limited:** Transpaco operates in the packaging supply industry. They offer a broad spectrum of packaging products such as boxes, corrugated board, cartons, paper, and packaging accessories (Transpaco, n.d.).
4. **Nampak:** Nampak is a leading packaging manufacturer with operations in South Africa, including Cape Town. They specialise in various packaging solutions, such as metal cans, glass bottles, and plastic containers.

In addition to these private sector stakeholders, the Cape Town-based organisation Green Cape has made significant inroads in circular economy development in the CCT. Beyond a sector specific focus, GreenCape and the City of Cape Town have conducted a thorough analysis of circular economy interventions, and have developed a supportive database of circular economy stakeholders, who are currently not engaged with reuse but who could be pulled into reuse pilots. The database can be found [here](#).

Further, the City of Cape Town has implemented several initiatives aimed at women's economic empowerment and gender equality. One key component is the Women's Information Skills Empowerment (WISE) program, which operates through the city's libraries (Du Toit, 2023). This program was established as part of a global campaign by the Carter Center, focusing on enabling women to access and disseminate important information from their governments. The initiative provides basic computer skills to women, who are then expected to share this information within their communities. The WISE program, offered at 14

libraries in the city, includes not only digital literacy sessions but also job readiness training and other empowerment skills. Participants in the six-week program are encouraged to become information activists in their communities. Additionally, the City of Cape Town's Enterprise and Investment Department encourages female entrepreneurs to apply for its Women in Business program. This initiative is part of the city's broader effort to support businesswomen through various programs and activities targeted at the inclusive growth of the digital economy through business literacy skills training (Tshuma, 2021). Furthermore, the City (2004) has developed a Draft Women Empowerment and Gender Equality Policy. This policy framework aims to establish a clear vision and set of guidelines for the development of services, policies, procedures, and practices based on equality between women and men. It also suggests specific interventions to meet the practical and strategic needs of women, furthering the empowerment of women towards achieving gender equality.

Ekurhuleni

The City of Ekurhuleni plays a significant role in the Gauteng Province's economy, ranking third in its contribution to the province's total GDP (Department of Cooperative Government and Traditional Affairs, 2023). It neighbours the country's largest city, Johannesburg, and contains South Africa's largest airport - OR Tambo International Airport. In 2020, its GDP was forecasted to be around R 251 Billion, representing 21.2% of Gauteng's total GDP. The city's economy is predominantly driven by four sectors: manufacturing, finance and business services, community services and general government, and trade and hospitality. There has been a notable shift in the economic structure over the years, with the manufacturing sector's dominance declining from 30.3% in 2000 to 22.7% in 2015, and finance and business services increasing their share.



In 2018, the community services sector was the largest in Ekurhuleni, contributing R 66.4 Billion or 22.7% of the total Gross Value Added (GVA). The manufacturing sector followed closely, then the finance sector. Agriculture contributed the least to the city's economy.

From 2008 to 2018, the finance sector saw the highest average annual GVA growth rate in Ekurhuleni at 2.95%, with the construction sector next. The electricity and mining sectors, however, experienced negative growth rates. The primary sector, comprising mining and agriculture, showed high volatility in growth, with agriculture reaching a peak growth in 2017 and mining in 2010. A significant portion of land with high agricultural potential remains unused in the city.

The secondary sector, including manufacturing, electricity, and construction, saw varied growth rates, with manufacturing experiencing a sharp decline in 2018. The tertiary sector, comprising trade, transport, finance, and community services, contributes the most to the city's GVA.

The informal economy in Ekurhuleni, including township economic activities like urban agriculture, manufacturing, and various service-related activities, is a focus area for the municipal government. Efforts are being made to uplift small informal businesses and integrate them into the formal economy. Initiatives like the Kwa-Thema Business Hub and SMME business park aim to support local entrepreneurs and small businesses.

Before the COVID-19 pandemic, Ekurhuleni was expected to grow at an average annual rate of 1.75% from 2018 to 2023, with the transport sector projected to grow the fastest. The finance sector was anticipated to become the largest sector by 2023. No further information has been published on this since the pandemic.

Looking to reuse opportunities, Ardagh Group (previously Consol) - the largest glass manufacturer in South Africa - has processing plants in Ekurhuleni.

A pilot study run by tech startup, KuDoti alongside beverage company, Distell explored opportunities around glass return, reuse, and enmeshment with the informal waste management economy. The study included 131 active participants and monitored the collection of almost 50,000 returnables over three unique months in 2023. This generated over ZAR 61,000 of income for participants - supporting the participants all while reducing impact on the system. More information can be found [here](#).

With the prevalence of glass bottles used across airports, conference centres, and the gastronomy industry in Ekurhuleni, this link between Ardagh and beverage providers opens up opportunities for a product as a service (PaaS) model. This would feed into the expectations laid out by the upcoming EPR mandate.

In terms of economic initiatives, the City of Ekurhuleni (n.d.) has implemented a 10-point Economic Plan. This plan is part of the city's broader strategy to ensure service excellence in the public sector and to enhance the quality of life for all its residents. While the specific details of how this plan addresses women's economic empowerment are not explicitly mentioned in the sources (City of Ekurhuleni, n.d.), the plan's overall objective of improving service delivery and enhancing public sector performance is crucial for creating an environment where women's socio-economic rights and empowerment can be realised as exemplified in part by Strategic Objective 3: To Promote Safer, Healthy, and Socially Empowered Communities (City of Ekurhuleni, n.d.).

uMhlathuze

The economic segmentation of the city of uMhlathuze, particularly in the areas of Richards Bay and Empangeni, is witnessing significant growth and development (Department of Cooperative Government and Traditional Affairs, 2020b). The city is emerging as a hub of opportunities and economic advancement in the KwaZulu-Natal region,



potentially surpassing even nearby eThekweni in these respects - a point of note given that eThekweni is the third largest metro in South Africa. This growth is propelled by the support for small businesses and various mega projects that are reshaping the city's economic landscape.

Key among these developments are major housing projects like the Empangeni Mega Housing Project and the Aquadene Housing Project. These projects are not only creating a substantial number of housing opportunities but also driving employment growth. The Empangeni project, for instance, is set to feature a diverse range of housing types, catering to different income groups. These initiatives are part of a broader strategy to revitalise the city's economy, particularly in the wake of challenges posed by the global pandemic.

The focus on supporting SMMEs is particularly notable, as it suggests an inclusive approach to economic development. This strategy aims at creating a ripple effect that benefits the wider community by fostering local employment and business opportunities.

uMhlathuze is on an upward trajectory in terms of economic growth, with a strong emphasis on inclusive and sustainable development. The city's efforts to support small businesses and undertake significant housing and infrastructure projects are key drivers of this growth. As such, areas like Richards Bay and Empangeni are likely to continue experiencing economic expansion, while other areas may experience a relative shift in their economic roles within the region. While the city's economic plan does not distinctly mention Women's economic empowerment or initiatives, The City of uMhlathuze's plan focuses on youth and SMMEs for economic growth. Key initiatives include supporting matriculants from low-income families, establishing free public Wi-Fi hotspots, offering on-the-job training, and amending policies to benefit disadvantaged groups. The City also established a One-Stop-Shop in eMpangeni for entrepreneurial

support and maintains partnerships with key stakeholders like the University of Zululand to align education with local industry needs (City of uMhlathuze, 2021).

4.2 City Analysis and Selection

Using the city overview and the criteria set out by GIZ and found in the Appendix, an analysis was carried out to identify the city best suited to host the CCL. To qualify for the CCL, a city must demonstrate strengths across several areas. In the private sector, local companies in specific industries should show potential to develop and implement reuse solutions, and express interest in collaborating with CCL. The public sector requires a city administration that supports sustainable and circular economic development, backed by appropriate legislation and policies. Both sectors must be aware of issues like waste pollution, waste management challenges, and the importance of gender equality. The city should have gender-supportive policies and active female participation in the circular economy. Lastly, the presence of a local innovation or circular economy hub willing to partner with CCL, and collaborative interest from key local organisations, are essential for a city's eligibility.

From the picture painted in the overviews above, the unique opportunities presented by each city in regard to the CCL begin to become visible. **In the case of Ekurhuleni**, the proximity to OR Tambo International Airport and the wealth of catering and logistics companies provide a wealth of potential for engagement on reuse packaging solutions. As a large metropolitan municipality in close proximity to the country's economic capital, the public sector's buy-in to new approaches to economic development and different ways of doing business is high. However, following the desktop research and interviews with local government there is limited information on targeted women's economic empowerment at the city-level and no evidence of a local innovation or circular economy hub that would facilitate the rollout of the CCL.



As an intermediate city in a period of growth and development, uMhlathuze would provide the space to build an accelerator programme from the ground up. Any pilot to test reusable packaging systems set out by CCL in the area would likely be a first of its kind. However, this would require a level of engagement, education, awareness, and input from GIZ that would make establishing the CCL programme a significant challenge. The challenge is evident across public and private sectors. Similarly to Ekurhuleni, the lack of a local innovation or circular economy hub makes the implementation of the CCL difficult.

Due to higher levels of access to information across all points of criteria analysis, the overview of Cape Town is more comprehensive. Given that, and the above parameters spelled out in more detail in the Appendix, the **City of Cape Town** is identified as the best location for the CCL. The most significant contribution to that determination was driven by the presence of GreenCape in the region. While the organisation carries out activities across the country, GreenCape's extensive alignment with progressing public sector engagement and rollout of waste minimising and circular interventions with the City of Cape Town; as well as their outreach, knowledge sharing, and implementation of circular project with the private sector make the city the most enabling environment for the CCL. Furthermore, GreenCape and its extensive private sector network have signalled the importance of the V&A Waterfront as an ideal testing ground for circular interventions through their existing SOLVE initiative (V&A Waterfront, n.d.). These two stakeholders mean that an implementation can be supported by the municipality but driven by two actors with already significant experience in the rollout of circular economy and accelerator type-programmes.

All of the above, coupled with City of Cape Town's detailed women's economic empowerment agenda, makes the city not only the path of least resistance in the implementation of the CCL, but one that is likely to show the most immediate impact.

City of Cape Town Selection

As stated, and in reviewing all the relevant regulatory, economic, and sectoral information, the City of Cape Town presents the best opportunity for the rollout of the CCL against the predetermined criteria in the following ways:

1. **Private Sector:** There is a high level of private sector buy-in on all circular economy practices in Cape Town and clear evidence of keenness in regards to reuse, as made clear by the V&A pilots and the Green Cape database.
2. **Public Sector:** There is a highly enabling regulatory and governance environment for reuse and circularity in Cape Town as well as an official who is contactable. The city is taking a highly proactive approach to green economy and circularity in a way that is unique in South Africa. Their buy-in is supported by existing engagements between the municipality, ICLEI, and GIZ.
3. **Awareness:** Cape Town's high levels of engagement with all levels of sustainability, circularity, and waste are supportive of the CCL. The public in Cape Town is highly aware of environmental issues. Many of these were reviewed in the engagement between the municipality, ICLEI, and GIZ.
4. **Gender:** The City of Cape Town supports women's economic empowerment through skills development programmes, entrepreneurial support, and financing. The City's dedication and prioritisation of these programmes stands out when reviewing the information available on the other analysed cities.
5. **Collaboration:** Buy-in from GreenCape and the V&A Waterfront, paired with the existing CE hub at SOLVE makes City of Cape Town an exceptional candidate for the CCL where the municipality sits as a stakeholder within the mesh of a supportive and experienced network.



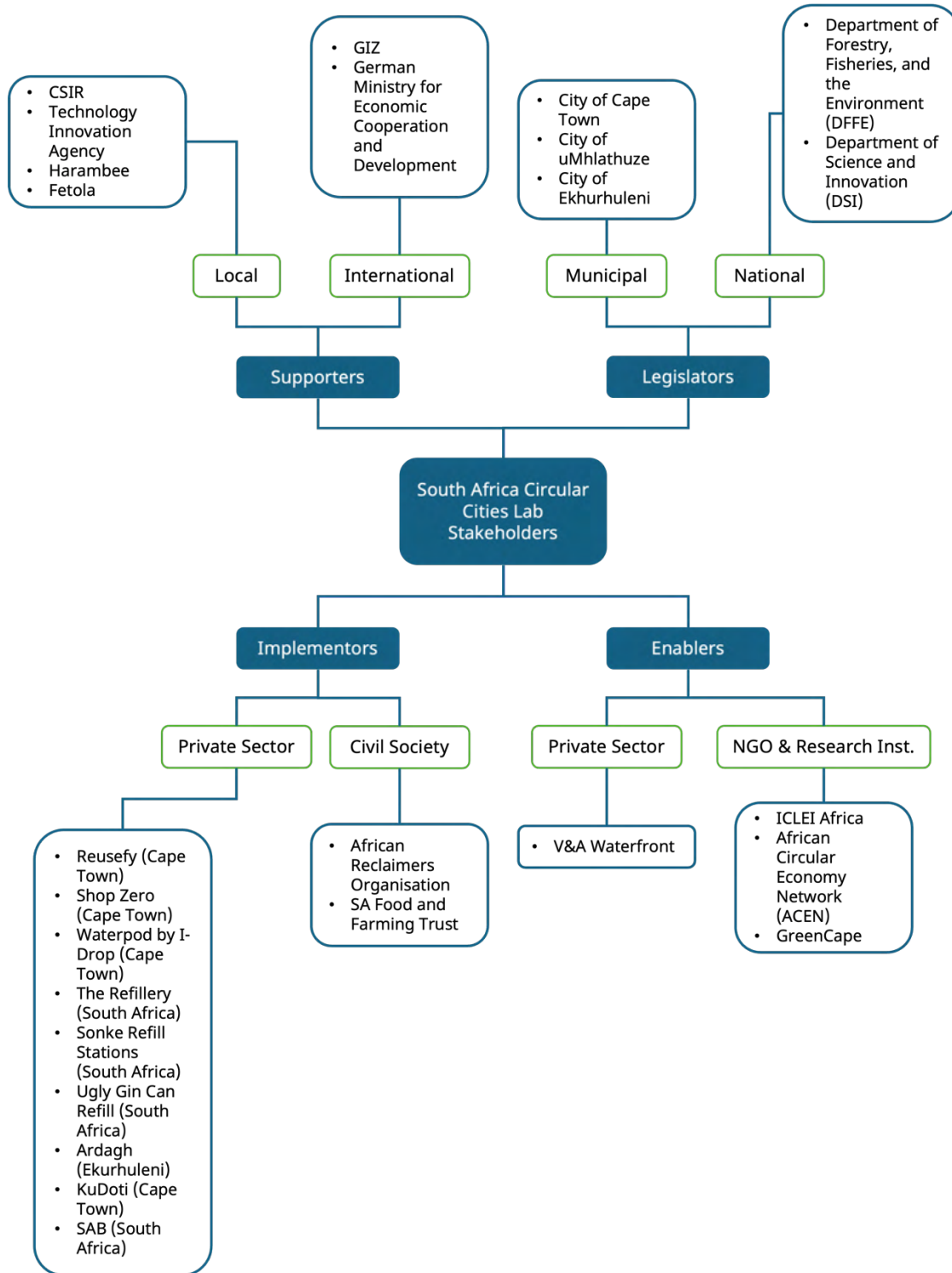
Fundamentally, this conclusion is propped up by the interest indicated by the key stakeholders mentioned above: GreenCape, City of Cape Town, and the V&A Waterfront. Further detail on these actors can be found in the table below:

Cape Town - Key Stakeholder Profiles

GreenCape	City of Cape Town	V&A Waterfront + SOLVE
<p>GreenCape is a non-profit organisation dedicated to promoting the broad adoption of economically viable green economy solutions in South Africa. The organisation collaborates with businesses, investors, academia, and government to unlock the investment and employment potential of green technologies and services, aiding in the transition to a resilient green economy. Established in 2010, GreenCape is a not-for-profit entity that supports the growth of South Africa's green economy.</p> <p>While their reach spans across the country, the organisation has specific impact in the Western Cape and Cape Town, working alongside government to implement targeted green economy policy and solutions.</p> <p>Some of these efforts have culminated in a large network of businesses and stakeholders mobilised around circular economy solutions. This network – captured in this almost 300 strong database of engaged businesses – has pre-existing experience in the circular economy, with opportunity to focus and leverage initiatives around reuse.</p>	<p>The City of Cape Town is the second largest city in South Africa at 4.62 million citizens. The City has made notable achievements in Environmental, Social, and Governance (ESG) areas, focusing on sustainability, economic development, and environmental conservation. Through the Mayor's Portfolio of Urban Sustainability 2023, Cape Town has embarked on projects aimed at promoting social cohesion, economic growth in an environmentally responsible manner, and ecological conservation, including climate change adaptation strategies and innovative sustainability incorporation methods.</p> <p>The city has also been recognized for its environmental initiatives, transitioning to renewable energy, implementing water conservation measures, and focusing on biodiversity protection and waste management, with goals such as becoming carbon neutral by 2050. These efforts reflect Cape Town's commitment to integrating ESG principles into its urban development and management strategies, making it a leader in sustainable and responsible governance.</p>	<p>The V&A Waterfront is a privately owned, public facing space, that is effectively a microcity encountering many of the challenges faced by cities globally. SOLVE@Waterfront was launched in March 2021 to amplify the shared value that flows from the Waterfront's Shared Value Ecosystem Strategy and offer a safe lab for testing and refining social and environmental innovations and prototypes prior to launching it into the world.</p> <p>With a systems approach, SOLVE created clusters to tap into the Waterfront's diverse community of stakeholders (public and private) to problem-solve, prototype, and generate thought leadership and research. The aim is to build back better:</p> <ul style="list-style-type: none"> • A food system that is just and good (Food Cluster) • Unlocking opportunity and sustainability through our oceans (Ocean Cluster) • Building inclusive futures through SMMEs <p>Its engagements, the V&A has a network of over 200 small businesses – the majority of which are women-owned, that it mobilises for the rollout of its ESG programmes.</p>



Diagram 1 : Potential Circular City Lab Stakeholders



5. Closing Reflections

South Africa's waste management landscape presents a compelling case for the urgent adoption of a circular economy, particularly through the implementation of reusable packaging systems. The nation's reliance on a linear "take-make-dispose" model has resulted in significant environmental and economic challenges, including the generation of approximately 122 million tonnes of waste annually, with only a small fraction being recycled or recovered. This situation is further exacerbated by the country's high levels of unemployment and inequality, making the transition to a circular economy not only an environmental imperative but also a socio-economic necessity.

The introduction of reusable packaging systems offers a promising solution to address multiple issues simultaneously. By shifting away from single-use packaging, South Africa can significantly reduce its waste generation, lower greenhouse gas emissions, and alleviate pressure on already overburdened landfills. Moreover, the adoption of such systems aligns with global trends towards sustainability and waste reduction, as evidenced by successful initiatives in both developed and developing countries.

One of the most compelling arguments for implementing a reusable packaging system in South Africa is its potential for job creation and economic empowerment, particularly for women. The informal sector, which plays a crucial role in waste management and recycling, presents an untapped opportunity for the development of reuse initiatives. By formalising and supporting these activities, South Africa can foster entrepreneurship, create sustainable livelihoods, and promote gender equality in the workforce. Further, higher prioritisation needs to be placed on measuring and researching existing reuse practices, as well as investing in the rollout of new and innovative reuse practice. A focus on high impact sectors, like tourism, agriculture, and logistics would be

supportive of the global effort of circular economy implementation.

The city of Cape Town, with its vibrant economy, diverse industries, and progressive environmental policies, emerges as an ideal location for piloting a reusable packaging system. The presence of organisations like GreenCape and initiatives such as the V&A Waterfront's SOLVE program demonstrates a strong local commitment to sustainability and innovation. Furthermore, Cape Town's focus on women's economic empowerment and skills development aligns with the broader goals of the circular economy.

In conclusion, the transition to a circular economy through the implementation of reusable packaging systems offers a transformative opportunity for South Africa. By addressing environmental challenges, creating economic opportunities, and promoting social inclusion, this shift can contribute to a more sustainable, equitable, and prosperous future for the nation. Cape Town, with its supportive ecosystem and forward-thinking policies, is well-positioned to lead this change and serve as a model for other cities and regions in South Africa and beyond.



Appendix

Questionnaire for Enterprises

Q#	Question
1	What do you understand about the concept of reuse (in general)?
2	Does your business incorporate the concept of reuse into the company's business model/ daily operations/products, if so what was the key reason for including reuse?
3	How does your business advocate for the use of reusable products/packaging? E.g. through a sustainability page on your website?
4	Does your business make use of reusable products/items in its processes and where do these reused products/materials come from?
5	Can you list products/services that your business sells that make use of the reuse concept?
6	What would you say the drivers and challenges are in navigating the reuse economy?
7	Does your business monitor how much waste it generates through its products/services, and how much waste it prevents from going to landfill? What do these numbers look like?
8	In what way is the Municipality providing support and assistance in your journey towards sustainability/circular economy/reuse economy?
9	What infrastructure, services and legislative enablers put in place by the government would enable you to conduct reuse activities more efficiently?
10	How would you say South Africa's recent mandatory Extended Producer Responsibility (EPR) regulation influences how reuse activities and how products are viewed?
11	What is the demographic profile (Gender, race, education) of your company?
12	What percentage of women hold senior positions within your company?
13	Does your business incorporate gender policies such as South Africa's National Policy Framework for Women's Empowerment and Gender Equality ?, If so how?
14	Do you encounter gender-related obstacles when operating your business?
15	Have you seen a shift in customer mindset and attitudes towards a preference for more sustainable and reusable alternatives?
16	What do you think it will take to alter consumer perceptions in viewing products at the end of its life cycle as a valuable resource rather than waste?



17	How do consumers regard reusable products and initiatives? Is this a draw (e.g. greater convenience, environmental consciousness) or a detractor (e.g. inconvenience, higher prices)?
18	Are you aware of or have participated in any business incubation or accelerator programmes prioritising reuse business models?
19	Are there any innovation hubs/labs that you know of that provide a platform to foster innovation where reuse business models can be practised?
20	Have you attended or are aware of any campaigns run by the municipality that specifically focus on the reuse economy?
21	What is your relationship like with other (formal) businesses?
22	How would you say implementing reuse practices influences business' profitability and competitiveness?

Questionnaire for Municipality

Q#	Question
1	'Are officials in the municipality familiar with the concept of the circular economy?
2	Does the municipality have a department or inter-departmental City official whose mandate is solely to work towards a circular economy transition?
3	How much municipal waste is generated and how much is managed from this?
4	What percentage does the city's waste sector contribute to South Africa's total greenhouse gas emissions?
5	How many businesses are owned and operated by women in the environmental and sustainability sector?
6	Does the municipality have policies in place to enable, incentivize and support the transition to a circular economy, particularly in the reuse of materials/wastes?
7	Are there any efforts/campaigns that the city undertook/is currently undertaking that advocate for reuse activities among the public?
8	How does the municipality create an enabling environment for reuse activities such as offering finance for reuse businesses, awareness raising and educational programmes, or the provision of infrastructure for collection, sorting and recycling of reusable materials?
9	Does the municipality support (in any way) women-led organisations that advocate for women's rights and women's entrepreneurship, in South Africa?



10	Are you aware of South Africa's Extended Producer Responsibility(EPR) regulations?
11	Are you aware of any circular economy, reuse or gender-related processes at the national or provincial level?
12	How does the municipality include and support the informal sector in reuse activities?
13	Can you provide us with a segmentation of economic activity across the municipality?

City Selection Criteria

#	Criteria	Description
1	Private sector	<ul style="list-style-type: none"> One or several sector/s and respective local companies present high potential for or even have already tested/are piloting a reuse solution, e.g. mineral water producer, retail logistics, gastronomy, etc. One or several sector/s and respective local companies have expressed their interest in collaborating with CCL.
2	Public sector	<ul style="list-style-type: none"> The city administration is open for sustainable development activities, especially urban development or circular economy. There is a circular economy supportive legislative framework or respective policies in place. The city administration has the authority to introduce/foster supporting framework conditions or circular economy and particularly reuse solutions in the urban space. A contact person within the city administration exists for the topic of circular economy/waste prevention.
3	Awareness	<ul style="list-style-type: none"> Existing awareness within private and public sector for: <ul style="list-style-type: none"> The issue of waste pollution the challenges and potential of the local waste management system the need to reduce packaging (waste) the need for gender equality Existing awareness within the population for: <ul style="list-style-type: none"> the issue of waste pollution the needs for a functioning waste management system the need to reduce packaging (waste) the need for gender equality



4	Gender	<ul style="list-style-type: none">• There is a gender equality supportive legislative framework or respective policies in place.• There are women involved in the circular economy sector and reuse solutions who can act as role models.• There are women involved in businesses that are open to /have high potential for reuse solutions.• There are companies that have introduced gender equality standards into their company guidelines.• There exists a local/national network for female entrepreneurship.
5	Collaboration	<ul style="list-style-type: none">• Local innovation/circular economy hub in the city or country are interested in collaborating with CCL.• There is interest from local key organisations for CE, reuse and gender to collaborate with CCL.



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