



# CIRCULAR ECONOMY

A selection of case studies from the Gauteng Province, South Africa

#COCREATEMYCITY  
The Colab

nuffic neso  
South Africa





These case studies are an activity/project of the CCMC CoLab Johannesburg hub and completed in partnership between UJ PEETS and Nuffic Neso South Africa. The Cocreatemycity CoLab is a multi-stakeholder, multi-disciplinary solution-based process focus on addressing community/city problem(s) in an applied learning (R&D) environment. The CoLab is an innovative space for cocreating solutions for smart and resilient cities.

The CoLab is centred on a living lab model and based on the following value proposition:

- Building bilateral networks of knowledge institutes, companies and public organisations
- Developing competencies of students, lecturers and professionals
- Providing practice-oriented internships and applied research projects
- Dealing with real-life issues selected by participating companies

The CCMC CoLab is a mechanism to involve various stakeholders and partners of the CocreateSANL initiative that is rooted in knowledge exchange and long-term partnerships.

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## SUSTAINABLE DEVELOPMENT GOALS





## Context

In a Circular Economy you manufacture a product – you use it, reuse it and if it cannot be reused, it becomes recycled or converted to another product. Once the product reaches the end of its useful life, it must not be disposed, we must find alternative use (Mativenga *et al.*, 2017; Tahulela & Ballard, 2020). It is about reducing resource leakage. It is a closed loop system. This is completely different to linear economy whereby a product is used and not reused again. The linear economy does not create job opportunities and economic growth (Tahulela & Ballard, 2020).

In the Global North there are many great examples of circular economy practices which have been documented, however, in the Global South there is little to no documentation of examples of companies partially/fully practicing circular economy for several reasons (Desmond & Asamba, 2019). It is from this backdrop that the research is being conducted in the Global South to unearth cases and examples of circular economy. The primary goal of this research was to develop case studies of circular economy companies in and around Johannesburg, Gauteng Province, South Africa. The fundamental objective is to highlight these case studies so that organisations, researchers, public officials, and all relevant stakeholders can learn and equally create a network of community.

The mapping of these case studies as an unfolding process will reveal how much is known about the concept of circular economy and what needs to be done to achieve circular economy practices now and in the future. Furthermore, not much is known about the concept of circular economy. Mapping cases of circular economy allows for an opportunity to create knowledge that can be shared with individuals and



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organisations/companies. This study will also inform us in which sector/s circular economy is most practiced by which companies and most importantly, under what circumstances.

The case studies represented in this report is a project of the ##CoCreatemycity CoLab. The #CoCreatemycity CoLab is a multi-stakeholder, multi-disciplinary solution-based process focus on addressing community/city problem(s) in an applied learning (R&D) environment. The CoLab is an innovative space for cocreating solutions for smart and resilient cities.

The CoLab is centred on a living lab model and based on the following value proposition:

- Building bilateral networks of knowledge institutes, companies, and public organisations
- Developing competencies of students, lecturers, and professionals
- Providing practice-oriented internships and applied research projects
- Dealing with real-life issues selected by participating companies

# Research Methodology

## Methodology

The research was conducted using a mixed methods approach in and around Johannesburg, Gauteng Province, South Africa. The data was collected using a survey questionnaire designed on Survey Monkey and shared digitally to participating organisations via email, LinkedIn, WhatsApp and Facebook Messenger. The questionnaire was completed by employees and/or owners of participating organisations who consented to taking part in the study. Prior to sending the survey questionnaire, a desktop study was conducted to search companies and organisations fully or partially practicing circular economy in and around Johannesburg. A database of contacts and their contact information was created to record the companies that partially or fully practice circular economy. These companies were sent the survey questionnaire. The questionnaire was designed to create data that can represent the organisations as a case study for their practice of circular economy. The questionnaire comprised of semi-structured and structured questions.

## Access and Sampling

We connected with organisations/companies that are already part and parcel of the UJ PEETS network. We employed a snowball sampling strategy. Snowballing is an example of non-probability sampling (Neuman, 1997). The sampling is used for selecting participants who are directly or indirectly connected to each other. This technique starts with one of few cases and spreads-out because of the initial case (Neuman, 1997). The first case for this study was UJ PEETS who introduced us to the researchers of the other companies. The other companies then referred us to other companies. This was achieved through the end of the survey question where participants were asked to share contacts and names of companies in the circular economy space located in and around Johannesburg. Some of the companies were/are doing consultations with UJ PEETS. They were involved with the study after the consultation process given that their work was relevant to the research study.

## Data Collection

The questions were designed to take about 20 minutes to complete. Data was collected from 40 companies, however only 24 companies successfully completed the survey. The questionnaire was distributed via email and other social media platforms to participating companies.



## Data Analysis, Interpretation and Validation

Data analysis is a way of creating order, structure and meaning around a lot of acquired information. It is a complex demanding task that is not straight forward (Marshall and Rossman, 1995). Qualitative data analysis is about searching for emerging and developing themes across collected data (Marshall and Rossman, 1995). The data captured in this instance was words and ideas.

This way of analyzing data enables researchers to compare data across many texts. Firstly, coding allows researchers to identify patterns. In the process of reading through the responses, we looked for themes that were emerging, as well as subthemes and themes as per the objectives and questions of the research (Newman, 1997). Following that, we referred back to literature review to connect the data and aligned the themes to make sense of the data.

The data from the interviews and documents were then combined, where links were provided to validate the response from participants.

## Ethical Considerations

Prior to contacting the companies, we applied for an ethics certificate from the ethics committee of the University of Johannesburg. The survey questionnaire was only distributed after receipt of the ethical clearance certificate. The research output will be sent to the participating companies.

# Selection of Case Studies

This chapter presents results from thematic analysis of both the survey questionnaire data and document analysis. Drawing primarily on the interviews, we will first situate and introduce the nature of companies interviewed. We then present more specific results from thematic analysis of the interviews. As mentioned in the methods chapter, we will not refer to either organisation or their staff by name. Rather we use 'O' to indicate the voice of an organisation representative.

## SCALED IMPACT/UMOYA DRYERS

1.



### Sector: Agriculture and Agroprocessing

**Scaled Impact/Umoja Dryers** is an agroprocessing company that improves environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions) by providing a technology that substitutes the use of non-renewable energy by a renewable one (solar radiation heat vs electric elements). Promoting a sustainable food value chain, by:

- Minimising food waste and loss in the supply chain; minimising transport and logistics cost as well as emissions through on-farm drying of fruit and vegetable crops. Promoting rural development and small farmer business development and integration through specially designed technology to fit the needs and restrictions (investment cost, sizes) of this segment.

### Circular Economy Practices

- Design for the Future – Account for the systems perspective and full project life cycle during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Ensure materials and energy are used in an efficient way or obtained from renewable sources.
- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models which encourage resource efficiency through the full life cycle of the product, from design to use and end-of-life.

**Scaled Impact/Umoja dryers is working towards three sustainable development goals:**



### Sustainable and circular economy concepts applied by Scaled Impact/Umoja Dryers:

- Regenerative agriculture: By returning nutrients back to the soil and other systems, mimicking how nature cycles every part of living materials.
- Climate smart agriculture: Sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.
- The performance economy: Achieving a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.

The support for Scaled Impact/Umoja Dryers to get to the next level includes, but not limited to, business accelerator support, support to pilot/proof of concept, support in connecting or expanding the value chain, co-working/markerspace/Fab Lab access and networking opportunities with organisations working in the same or related fields.

## BEV BUDS

2.



### Sector: Sustainable Cities Circular strategies

**BevBuds** is a Hybrid/Social Enterprise bringing the Fourth Industrial Revolution (4IR) into a traditionally operated market to be more societally inclusive and accessible. The company is still in the proof-of-concept stage. Bev Buds is in Pretoria, Gauteng Province.

- Design for the Future – Account for the systems perspective and full project life cycle during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Ensure materials and energy are used in an efficient way or obtained from renewable sources.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

**Three United Nations Sustainable Development Goals (SDGs) that Bev Buds contributes to/works towards:**



### Sustainable and circularity concepts applied by Bev Buds:

- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything, either returned to the earth or cycled back into the economy in a safe manner.

**Support is most important in helping to take Bev Buds to the next level.**

- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Circular economy certification or accreditation.
- Support to pilot/proof of concept.
- Support in connecting or expanding your value chain.

## SHOVEBIKE

3.



### Sector: Green Transport

**Shovebike** is an on-demand, non-motorised transportation system that will provide residents and visitors with access to a network of e-bikes and charging stations for point-to-point transportation of short- to medium-length distance trips. The well-built transportation system will play a vital role in further enhancing and complementing the existing public transportation system, closing the gaps in between the transport networks and schedules,

and supplementing them at the low costs of a key feeder service. Their slogan is "As'reyeni Mzansi" (Let's ride on South Africa").

This is a start-up for-profit company. The initial operation area will be in an urban area, then upon expansion, it will be taken to as many areas as possible, including rural. The vision is to have Shovebike system incorporated into the country's public transit system, addressing both societal (inequalities in transport accessibilities and health) and environmental issues. Shovebike is in Johannesburg, Gauteng Province.

Shovebike improves environment and socioeconomic aspects (e.g. job creation, cost saving, avoided emissions).



- Successful urban transportation systems increase access to destinations, activities, goods, and services, and do so in a form that is safe, affordable, and equitable (both to access and in terms of benefits distribution), minimises environmental harm, uses resources efficiently, and mitigates negative health impacts.
- Using this framework, Shovebike has the potential to better connect people from all different walks of life with public transit, reduce reliance on private cars, making the most of limited existing space, all while reducing greenhouse gas emissions, thereby improving the quality of life and moving the City of Johannesburg towards a more sustainable transportation system.

### Circular strategy/strategies implemented by Shovebike:

- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models, which encourage resource efficiency through the full life cycle of the product, from design to use and end-of-life.
- Incorporate Digital Technology – Use digital, online platforms and technologies, which will allow tracking and optimising product and resource use, strengthening connections between supply chain actors, and enabling the implementation of circular business models.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

### The top three United Nations Sustainable Development Goals (SDGs) which Shovebike contributes to/works towards.



### Sustainable and circularity concepts applied by Shovebike:

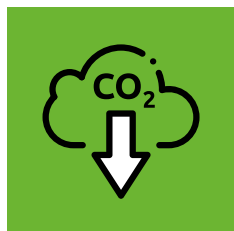
- The Performance Economy: To achieve a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.
- The Blue Economy: Is where the cheapest and the best for health and the environment products are found, and where the necessities for life are free, thanks to a local system of production and consumption that works with what you have.
- Human Sphere: Social inclusivity in the form of sustainable lifestyle and livelihoods, circular economy community initiatives, inclusive circular economy business model and/or macro-economic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.

The kind of support that is most important in helping to take Shovebike to the next level include, but is not limited to:

- Training on specific circular economy topics.
- Coaching and/or mentoring.
- Support to pilot/proof of concept.

## ORINELL

4.



### Sector: Air Quality

**ORINELL** is about living green. It is a start-up company based in Pretoria, Gauteng province. The company offers goods and services – producing and providing businesses and consumers with goods and services.

Orinell improves the environment and socioeconomic aspects through job creation, cost savings and avoided emissions. This helps improve air quality and creates jobs.

### Circular strategy/strategies implemented by Orinell:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.



- Prioritise Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.

### Sustainable and circularity concepts applied by Orinell:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry, often within close geographic proximity.

#### The three United Nations Sustainable Development Goals (SDGs) that Orinell is contributing to/working towards.



The kind of support that is most important in helping to take Orinell to the next level is:

- Training on specific circular economy topics.
- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Support to pilot/proof of concept.

## LORRYIT (PTY) LTD

5.



### Sector: Waste Management

**Lorryit (Pty) Ltd** is a household-based waste management company.

How does your company/organisation improve environment and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

By providing waste management from household level to a well-established recycling company helps the community to manage waste to protect the environment and the health of the people.

### Circular strategy/strategies implemented by LORRYIT (Pty) Ltd:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow to track and optimise product and resource use, strengthen connections between supply chain actors, and enable the implementation of circular business models.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

#### Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?



### Sustainable and circularity concepts applied by LORRYIT (Pty) Ltd:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry, often within close geographic proximity.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything, either returned to the earth or cycled back into the economy in a safe manner.
- Climate smart agriculture: Sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.

## What do you do with the separated waste?

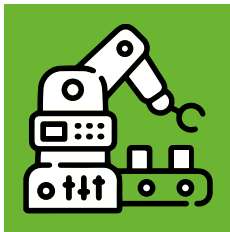
- Connect the separated waste to waste companies that need it from household level.

The kind of support that is most important in helping to take the company to the next level is:

- Training on specific circular economy topics.
- Business accelerator support.
- Co-working/Makerspace/Fab Lab access.
- Networking opportunities with initiatives working in the same related field.

## TRIVENTIVE SYSTEMS

6.



### Sector: Manufacturing

**Triventive Systems** is a company that brings innovative ideas to life.

In what industry does your company/organisation work?

- Capital Equipment – Producing electrical equipment and/or machinery for industrial use.

### Circular strategy/strategies implemented by Triventive Systems:

- Design for the Future – Account for the systems perspective and full project life cycle during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Triventive Systems:

- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.
- Permaculture: The conscious design and maintenance of agriculturally productive ecosystems, which have the diversity, stability, and resilience of natural ecosystems.
- The performance economy: To achieve a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.

What do you do with the separated waste?

- We separate and recycle waste and we also ensure that our product remains in the economy after use.

The kind of support that is significant and required to take the company to the next level includes:

- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socio-economic indicators).
- Co-working/Makerspace/Fab Lab access.
- Networking opportunities with initiatives working in the same related field.
- Support in connecting or expanding your value chain.
- Support to pilot/proof of concept.
- Business accelerator support.



## PEDOLOGY SMART SENSOR

7.



### Sector: Agriculture/Manufacturing

**The aim is to connect nature with technology to provide suitable solutions for African soil in the agriculture sector.** Farmers should enjoy working on their soil and produce the best fruits and vegetables. The organisation produces electrical equipment and/or machinery for industrial use.

How does your company/organisation improve environmental and socio-economic aspects (e.g. job creation, cost savings, avoided emissions)?

- We are trying to save costs for our farmers by providing equipment that is environmentally friendly.

### Circular strategy/strategies implemented by Pedology Smart Sensor:

- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models, which encourage resource efficiency through the full life cycle of the product, from design to use and end-of-life.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow tracking and optimising product and resource use, strengthening connections between supply chain actors, and enabling the implementation of circular business models.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**

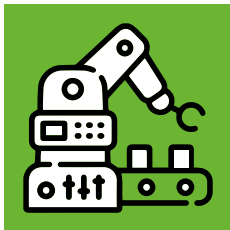


### Sustainable and circularity concepts applied by Pedology Smart Sensor:

- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Circular economy certification or accreditation.
- Business accelerator support.
- Networking opportunities with initiatives working in the same/related field.

## SINCHIE NECHAMA

8.



### Sector: Manufacturing

**Sinchie Nechama** aims to be epic and amazing game changers in the production of business and consumer goods.

How does your company/organisation improve environmental and socio-economic aspects (eg, job creation, cost savings, avoided emissions)?

- Manufacturing leading to more job creation and a product that is one of a kind.

In what industry does your company/organisation work?

- Goods and Services – Producing and providing business and consumer goods and services.

### Circular strategy/strategies implemented by Sinchie Nechama:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



**Sustainable and circularity concepts applied by Sinchie Nechama:**

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.
- Humansphere: Social inclusivity in the form of sustainable lifestyle and livelihoods, circular economy community initiatives, inclusive circular economy business model and/or macroeconomic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.

What do you do with the separated waste?

- We separate waste and we take plastic to the plastic company.

The kind of support significant in helping take the company to the next level is:

- Training on specific circular economy topics.
- Coaching and/or mentoring.
- Networking opportunities with initiatives working in the same/related field.

## BRAINWAVE PROJECTS 720CC

9.



**Sector: Renewable energy**

**Renewable energy producer** – The company is a start-up and it is geographically located in an urban area, operating in the space of solar energy producer.

**Circular strategy/strategies implemented by Brainwave Projects 720CC:**

- Prioritise Regenerative Resources – Ensure renewable, reusable, nontoxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models that encourage resource efficiency through the full life cycle of the product, from design to use and end-of-life.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow tracking and optimising product and resource use, strengthening connections between supply chain actors, and enabling the implementation of circular business models.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



**Sustainable and circularity concepts applied by Brainwave Projects 720CC:**

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either being returned to the earth or cycled back into the economy in a safe manner.
- The performance economy: To achieve a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.



If your company's/organisation's equipment breaks down, how do you deal with it?

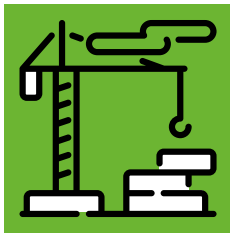
- We repair and prolong its productive life as much as is cost effective.
- What do you do with the separated waste? Please elaborate:
- We separate waste and give it to collection agencies.

The kind of support that is most important to take the company to the next level includes but not limited to:

- Support in developing and applying circular economy metrics for your organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Business accelerator support.
- Support in connecting or expanding your value chain.

## GFPC AFRICA

10.



### Sector: Renewable Energy

**GFPC Africa** is a multidisciplinary organisation that focuses primarily on services such as construction, renewable energy, and water engineering.

What is the main geographical area that your company/organisation operates in?

- Urban area.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Our company plays a positive role in the environment as well as economically, as a result of being sustainable (avoiding emissions) and creating opportunities.

In what industry does your company/organisation work?

- Professional Services – Providing specialist services to support consumers, businesses, and governments.

How familiar is your company/organisation with the concepts of the circular economy?

- Very familiar.

### Circular strategy/strategies implemented by GFPC Africa:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow tracking and optimising product and resource use, strengthening connections between supply chain actors and enabling the implementation of circular business models.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by GFPC Africa:

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Climate smart agriculture: Sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.

- Bioeconomy: The production of renewable biological resources and the conversion of these resources and waste streams into value-added products, such as food, feed, bio- based products and bioenergy.

What do you do to tackle your company/organisational challenges?

We must always be prepared and strategise by implementing fresh/new ideas as well as concepts.

The kind of support that is most important to take the company to the next level includes but not limited to:

- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Business accelerator support.
- Networking opportunities with initiatives working in the same related field.

## ENVIROSWITCH

11.



### Sector: Environmental Health

**Enviroswitch** is an environmental health company that focuses on consultation, training, and additional services, which include hygiene, pest control, food safety and occupational health and safety.

Does your company/organisation have a website, social media page or online presence? [www.enviroswitch.co.za](http://www.enviroswitch.co.za)

What is the main geographical area that your company/organisation operates in?

- Urban area

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Safe work environments, pest free environments and job creation.

In what industry does your company/organisation work?

- Professional Services – Providing specialist services to support consumers, businesses, and governments.

### Circular strategy/strategies implemented by Enviroswitch:

- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Enviroswitch:

- The Blue Economy: Is where the cheapest and the best for health and the environment products are produced and the necessities for life are free thanks to a local system of production and consumption that works with what you have.
- Humansphere: Social inclusivity in the form of sustainable lifestyle and livelihoods, circular economy community initiatives, inclusive circular economy business model and/or macro-economic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.

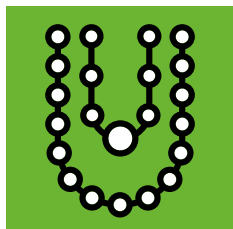


If your company's/organisation's equipment breaks down, how do you deal with it?

- We repair what is repairable and replace what is not repairable. What do you do to tackle your company/organisational challenges?
- We seek help through mentorship, partnerships, and self-education.

## MOSIMA'S HANDCRAFTS

12.



### Sector: Recycling and Upcycling

**Mosima's Handcrafts** is a business that prides itself in the use of recycled plastic bottles and lollipop sticks to make beautiful and comfortable earrings, bracelets, and keychains.

What is the main geographical area that your company/organisation operates in? Please specify if you have multiple areas:

- I'm currently based in an urban area, Johannesburg, but my business delivers anywhere around SA using Paxi.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- I collect plastic bottles and plastic lollipop sticks and recycle them to make beautiful, light and comfortable earrings, bracelets and keychains. This can also help reduce emissions in production of material used in the making of earrings as the material is recycled.

In what industry does your company/organisation work?

- Goods and Services – Producing and providing business and consumer goods and services.

### Circular strategy/strategies implemented by Mosima's Handcrafts:

- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Mosima's Handcrafts:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.
- The performance economy: To achieve a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.
- Regenerative design: Regenerative design seeks to not merely lessen the harm of new development, but rather to put design and construction to work as positive forces that repair natural and human systems.

If your company's/organisation's equipment breaks down, how do you deal with it?

- I do not use any machinery now; all my products are handmade.

Does your company/organisation separate waste?

- Yes.

What do you do with the separated waste?

- I throw away the ones that I will not need to use in my products.

The kind of support that is most important to take the company to the next level includes but not limited to:

- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socioeconomic indicators).
- Circular economy certification or accreditation, coaching and/or mentoring. Business accelerator support. Support to pilot/proof of concept. Support in connecting or expanding your value chain.
- Networking opportunities with initiatives working in the same related field.

## NUBRIX

13.



### Sector: Manufacturing

**Nubrix** uses waste to create alternative building technologies.

Does your company/organisation have a website, social media page or online presence (e.g. articles)? <https://www.nubrix.co.za>

<http://observers.france24.com/en/20170208-meet-south-african-inventor-making-bricks-out-paper>

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- The future positive impact of the company – Reuse of waste material decreases waste that reaches landfills. For job creation, more individuals are incentivised to recycle or collect waste in exchange for building materials. The insulation properties of our brick reduce the cost of spending on heating and cooling in a building, which inherently decreases carbon emissions from electricity production as less electricity is required for heating.

In what industry does your company/organisation work?

- Construction and Infrastructure – Producing building materials and/or providing services to create residential and non-residential infrastructure and real estate.

### Circular strategy/strategies implemented by Nubrix:

- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models, which encourage resource efficiency through the full life cycle of the product, from design to use and end-of-life.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Nubrix:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.

If your company's/organisation's equipment breaks down, how do you deal with it?

- We fix it ourselves and if we can't, then we reach out to others.

Is your company/organisation involved in any local or international circular economy projects?

- Locally, we were part of TIA's GCIP competition.

What do you do to tackle your company/organisational challenges?

- We research alternative solutions, alternative methods, alternative suppliers, and alternative funding methods, etc. We also look for mentors to assist in tackling the challenges if our current mentors can't assist with the challenge.

The kind of support that is most important to take the company to the next level is:

- Circular economy certification or accreditation.
- Support to pilot/proof of concept.
- Networking opportunities with initiatives working in the same related field.

What measures do you use to assess how circular your company/organisation is?

- Amount of waste collected, and the number of building materials created from the collected waste.

## PLASTICS SA

14.



### Sector: Recycling and Education

**Plastics SA** is an industry association playing an active role in the growth and development of the SA industry to address plastics related issues and influence role-players.

Does your company/organisation have a website, social media page or online presence (eg articles)? [www.plasticsinfo.co.za](http://www.plasticsinfo.co.za)

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Education and awareness.

In what industry does your company/organisation work?

- Plastics are part of all sectors and Plastics SA operates across all sectors.

### Circular strategy/strategies implemented by Plastics SA:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

### Which United Nations Sustainable Development Goals (SDGs)

does your company/organisation contribute to/work towards?



### Sustainable and circularity concepts applied by Plastics SA:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry, often within close geographic proximity.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.

If your company's/organisation's equipment breaks down, how do you deal with it?

- Get it fixed.

What do you do with the separated waste?

- Engage recycling companies.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

- Yes



Is your company/organisation involved in any local or international circular economy projects? If yes, please elaborate:

- Circular Economy for plastics industry is advocated by our company.

What do you do to tackle your company/organisational challenges?

- Network with knowledgeable people.
- The kind of support that is most important to take the company to the next level includes but not limited to coaching and/or mentoring, support in connecting or expanding your value chain, and networking opportunities with initiatives working in the same /related field.

What measures do you use to assess how circular your company/organisation is? Please elaborate.

- Calculating annual recycling rates together with virgin input rates.

## SERVICE PARTS LOGISTICS (SPL)

15.



### Sector: IT Hardware Supplier

**SPL** is Africa's largest IT parts wholesaler and distributor of remarketed IT equipment (refurbished IT hardware bundled with a full warranty). SPL is the authorised distribution channel for parts from Acer, Fujitsu, HP, HPE, Kyocera, Lenovo, Lexmark, Toshiba, and many other tier-1 brands. Lastly, SPL helps IT and consumer products manufacturers to manage their warranties extremely affordably on very high service levels using their bespoke software and automations.

Does your company/organisation have a website, social media page or online presence (e.g. articles)? Yes, [www.spl.co.za](http://www.spl.co.za).

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Job creation in IT hardware refurbishment.
- Huge reduction in emissions by fixing used equipment rather than producing new hardware.
- Improve accessibility of hardware by selling at a much lower price point than new (less than half price!).

In what industry does your company/organisation work?

- Goods and Services – Producing and providing business and consumer goods and services.

### Circular strategy/strategies implemented by Service Parts Logistics:

- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models which encourage resource efficiency through the full life cycle of the product, from design to use and end-of- life.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Preserve and Extend What's Already Made – While products are in use, maintain, repair, and upgrade them to maximise their lifetime and give them a second life through take-back strategies, when applicable.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



Sustainable and circularity concepts applied by Service Parts Logistics:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.

- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.
- The performance economy: To achieve a higher competitiveness with greatly reduced resource consumption and without an externalization of the costs of waste and of risk.

If your company's/organisation's equipment breaks down, how do you deal with it?

- We keep R55m of IT parts on hand, both new and refurbished. We use our own stock and technical know-how to service our own equipment too.

Does your company/organisation separate waste?

- Yes.

What do you do with the separated waste?

- Paper + plastic – recycling
- Compostable packaging – industrial compost
- E-waste – return to a primary scrapper who will separate into precious metals.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

- Yes.

Is your company/organisation involved in any local or international circular economy projects?

- SPL is part of the SIA (Service Industry Association), which is a global organisation aimed at improving reparability of IT equipment and promoting access to parts and repaired hardware.

What do you do to tackle your company/organisational challenges?

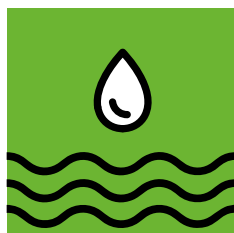
- We try to be creative within our cost-structures and where we can do something in-house, we generally do. Otherwise, we partner with other SMEs and NPOs for a win-win relationship. One challenge we struggle to address is pushing regulation and in moving our big corporate partners (like HP, Lenovo, etc.) to action refurbishment and waste-reduction.
- The kind of support that is most important to take the company to the next level is circular economy certification or accreditation, support in connecting or expanding your value chain, and networking opportunities with initiatives working in the same related field.

What measures do you use to assess how circular your company/organisation is?

- Number of parts sold per month, number of units refurbished and sold per month, number of extended warranties sold per month.

## BNAQUA SOLUTIONS

16.



### Sector: Water Quality

**Bnaqua Solutions** is a water treatment company focusing on acid mine drainage to potable stage.

Does your company/organisation have a website, social media page or online presence (e.g. articles)? Yes, [www.bnaqua.co.za](http://www.bnaqua.co.za).

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Provide cheaper treatment solution
- Innovation solution by using a waste material
- Job creation
- Pollution prevention

In what industry does your company/organisation work?

- If you work in multiple sectors or across sectors, please specify: Water treatment company and selling it at a cheaper rate.

How familiar is your company/organisation with the concepts of the Circular Economy?

- Extremely familiar.

### Circular strategy/strategies implemented by Bnaqua Solutions:

- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Bnaqua Solutions:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.

If your company's/organisation's equipment breaks down, how do you deal with it?

- We will have an engineering team onsite.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

- Yes.

What do you do to tackle your company/organisational challenges?

- I keep on marketing this business to new clients.
- The kind of support that is most important to take your company to the next level is support in connecting or expanding your value chain, and networking to make opportunities with initiatives working in the same or related field.

What measures do you use to assess how circular your company/organisation is? Please elaborate:

- We use a waste material to treat the contaminated mine water.

## ORGANIC WORKS

17.



### Sector: Manufacturing

**Organic Works** is a natural products manufacturing company, which produces active ingredients from plants.

How does your company/organisation improve environmental and socio-economic aspects (e.g. job creation, cost savings, avoided emissions)?

- The company has the potential to create significant employment at various

levels of the economy, including farm-level primary production of raw materials, value-added manufacturing and in further multiplier effect-based value chains in the economy. It aims at solving the problem of eradication of invasive species.

In what industry does your company/organisation work?

- Materials and Fuels – Extracting resources and/or processing them to produce materials for use by society.

### Circular strategy/strategies implemented by Organic Works:

- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



**Sustainable and circularity concepts applied by Organic Works:**

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.
- Bioeconomy: The production of renewable biological resources and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products, and bioenergy.

If your company's/organisation's equipment breaks down, how do you deal with it?

- We call for external expertise to repair from where we sourced the equipment.

Does your company/organisation separate waste?

- Yes.

What does your company/organisation do with the separated waste?

- We send the separated waste to a waste dealing company.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

- Yes.

What do you do to tackle your company/organisational challenges?

- We usually ask for help from those who have the expertise.
- The kind of support that is most important to take your company to the next level is support in developing and applying circular economy metrics for your company, co-working/Fab Lab access, and networking opportunities with initiatives working in the same or related field.

## PENDOWAVE (PTY) LTD

18.



**Sector: Recycling and Upcycling**

**Pendowave (Pty) Ltd** collects recyclables and process it for production of new material.

How does your company/organisation improve environmental and socio-economic aspects (e.g. job creation, cost savings, avoided emissions)?

- Job creation
- Reducing plastic waste

In what industry does your company/organisation work?

- **Materials and Fuels** – Extracting resources and/or processing them to produce materials for use by society.

**Circular strategy/strategies implemented by Pendowave (Pty) Ltd:**

- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.



**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by Pendowave (Pty) Ltd:

- I am not familiar with any of these concepts yet.
- If your company's/organisation's equipment breaks down, how do you deal with it?
- I fix the equipment with the profits.
- Does your company/organisation separate waste?
- Yes.
- What do you do with the separated waste? Please elaborate:
- We sell it and palletise it. We send the unusable to the landfill.
- What do you do to tackle your company/organisational challenges?
- I try to look for help. Innovate ways.
  - The kind of support that is most important to take the company to the next level includes but not limited to support in developing and applying circular economy metrics for your company, and circular economy certification or accreditation. Coaching and/or mentoring as well as business accelerator support.

## UNIVERSITY OF JOHANNESBURG (UJ)

19.



### Sector: Education and Training

**UJ.** The Future. Reimagined.

Does your company/organisation have a website, social media page or online presence (e.g. articles)?

Yes, <https://www.uj.ac.za>.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Installed solar panel, use of energy saving lights, recycling (waste management), reduced plastic use.
- What circular strategy/strategies, does your company/organisation implement?
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by the University of Johannesburg:

- Humansphere: Social inclusivity in form of sustainable lifestyle and livelihoods, circular economy, community initiatives, inclusive circular economy business model and/or macro-economic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.

If your company's/organisation's equipment breaks down, how do you deal with it?

- Maintenance department attends to it, if it is beyond their scope, then they get external service provider.

What do you do with the separated waste? Please elaborate.

- Recycle and send other to landfill.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

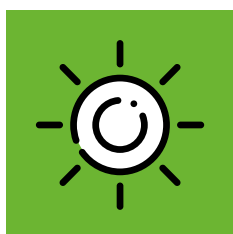
- No.

Is your company/organisation involved in any local or international circular economy projects? If yes, please elaborate.

- None
- The kind of support that is most important to take the company to the next level among other things include training on specific circular economy topics, and networking opportunities with initiatives working in the same or related field.

## SEED TO A FLOWER (PTY) LTD

20.



### Sector: Green Transport

#### Serurubele the Solar transport Si hamba nge Langa

(We are driving through the sun).

Does your company/organisation have a website, social media page or online presence (e.g. articles)?

Yes, <https://youtu.be/-XPSTp5xwuM>.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- By creating jobs, avoiding emissions by going green and we observe sustainable development goals.

In what industry does your company/organisation work?

- **Transportation and Logistics** – Producing transportation equipment and/or providing services for the transportation of goods and people.

How familiar is your company/organisation with the concepts of the Circular Economy?

- Somewhat familiar.

### Circular strategy/strategies implemented by Seed To A Flower (Pty) Ltd:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow to track and optimize product and resource use, strengthen connections between supply chain actors, and enable the implementation of circular business models.

### Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?



Partnerships to achieve the goal (SDG 17).

## Sustainable and circularity concepts applied by Seed To A Flower (Pty) Ltd:

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Climate smart agriculture: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.
- Regenerative design: Regenerative design seeks to not merely lessen the harm of new development, but rather to put design and construction to work as positive forces that repair natural and human systems.
- Humansphere: Social inclusivity in form of sustainable lifestyle & livelihoods, circular economy community initiatives, inclusive circular economy business model and/or macro-economic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.

If your company's/organisation's equipment breaks down, how do you deal with it?

- By having a team of on call mechanics.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

- Yes.

Is your company/organisation involved in any local or international circular economy projects? If yes, please elaborate:

- Yes, we will use franchise mechanisms for local or international circular economy projects. What do you do to tackle your company/organisational challenges?
- Consult with the relevant stake holders to tackle the challenges.
- The kind of support that is most important to take your company to the next level is support in developing and applying circular economy metrics for your company, business accelerator support, and support to plot/proof of concept.

What measures do you use to assess how circular your company/organisation is? Please elaborate:

- By doing feasibility study and consultation with our mentor.

## BRILLIANT EMERALDS (PTY) LTD

21.



### Sector: Renewable Energy

**Brilliant Emeralds (Pty) Ltd** primary focus is "Green Economy". The Company is also an engineering tech company that has invented innovative solutions that have great potential to preserve the Earth's climate.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Reduce carbon emissions.
- Job creation.

In what industry does your company/organisation work?

- **Marine economy and renewable energy.**

How familiar is your company/organisation with the concepts of the Circular Economy?

- Somewhat familiar.

## Circular strategy/strategies implemented by Brilliant Emeralds (Pty) Ltd:

- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

### Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?



### Sustainable and circularity concepts applied by Brilliant Emeralds (Pty) Ltd:

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.

If your company's/organisation's equipment breaks down, how do you deal with it?

- We repair

Does your company/organisation separate waste?

- Yes, we send the separated waste to recycling companies (e.g. Mpact; Remade).

Is your company/organisation involved in any local or international circular economy projects?

- No.

What do you do to tackle your company/organisational challenges?

- Finance the company ourselves.
- The kind of support that is most important to take your company to in developing and applying circular economy metrics for your company/organisation (eg, of material flows and their impact, job creation and other socioeconomic indicators). Circular economy certification or accreditation. Coaching and/or mentoring. Business accelerator support. Support to pilot/proof of concept. Support in connecting or expanding your value chain. Co-working/Makerspace/Fab Lab access. Networking opportunities with initiatives working in the same related field.

What measures do you use to assess how circular your company/organisation is? Please elaborate:

- Continuous research.

## ENVIROMALL

22.



### Sector: Manufacturing and Consulting

**Enviromall** strives to provide sustainable "good for the earth" products and services and educate customers about going green.

In what industry does your company/organisation work?

- **Goods and Services** – Producing and providing business and consumer goods and services.

How familiar is your company/organisation with the concepts of the Circular Economy?

- Extremely familiar.



## Circular strategy/strategies implemented by Enviromall:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models which encourage resource efficiency through the full lifecycle of the product, from design to use and end-of- life.
- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow to track and optimize product and resource use, strengthen connections between supply chain actors, and enable the implementation of circular business models.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



## Sustainable and circularity concepts applied by Enviromall:

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Industrial symbiosis: Process by which waste of one industry becomes the raw material for the next industry often within close geographic proximity.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.

If your company's/organisation's equipment breaks down, how do you deal with it?

- Repair wherever possible.

Does your company/organisation separate waste?

- Yes, separate recyclable material and deliver to site that collects recycling.

Do you have a system in place that ensures your products remain in the economy after use (e.g. collection or take back)?

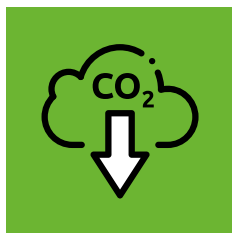
- No.

What do you do to tackle your company/organisational challenges?

- Discuss with all role players, implement new and better processes to address the issues.
- The kind of support that is most important to take your company to the next level is business accelerator support, co-working/makerspace/Fab Lab access, and networking opportunities with initiatives working in the same related field.

23.

## EXXARO



### Sector: Mining

**EXXARO** is a diversified mining company.

Does your company/organisation have a website, social media page or online presence (e.g. articles)? Yes, <https://www.exxaro.com>.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

- Exxaro has a robust strategy to address job creation, cost-cutting and to reduce carbon emissions. Please see our latest Integrated report for more details.

In what industry does your company/organisation work?

- Materials and Fuels** – Extracting resources and/or processing them to produce materials for use by society.

How familiar is your company/organisation with the concepts of the Circular Economy?

- Extremely familiar.

### Circular strategy/strategies implemented by EXXARO:

- Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
- Incorporate Digital Technology – Use digital, online platforms and technologies that allow to track and optimize product and resource use, strengthen connections between supply chain actors, and enable the implementation of circular business models.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.

**Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?**



### Sustainable and circularity concepts applied by EXXARO:

- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.

If your company's/organisation's equipment breaks down, how do you deal with it?

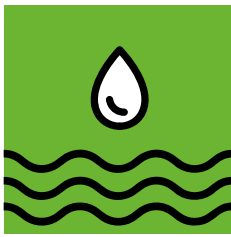
- Repair where possible, replace what cannot be repaired. Does your company/organisation separate waste?
- Yes, sent for recycling.

What do you do to tackle your company/organisational challenges?

- Partner with organisations and government to address challenges.
- The kind of support that is important to take your company to the next level is support in developing and applying circular economy metrics and support in connecting or expanding your value chain.

## MAMADI & COMPANY (PTY) LTD

24.



### Sector: Water, Environment and Waste

**Mamadi & Company (Pty) Ltd** is a leading professional services firm offering superlative consulting services in design, engineering, advisory, environmental management, construction management, strategy development, energy solutions, natural resource conservation, and digital transformation. In terms of the environmental sector, the company provides sustainable authorisation, compliance, management systems and assessment solutions within the water, environmental and waste sectors.

Does your company/organisation have a website, social media page or online presence (e.g. articles)? Yes, <https://www.mamadi.co.za>.

How does your company/organisation improve environmental and socioeconomic aspects (e.g. job creation, cost savings, avoided emissions)?

The company is involved in various environmental and social improvement projects such as:

- Water and air emissions licensing, which legally binds companies to protect the environment.
- Development of integrated waste management plans for the betterment of sustainable waste management.
- Circular economy and industrial symbiosis project that encourages environmental, social and economic protection and advancement.

In what industry does your company/organisation work?

- Professional Services – Providing specialist services to support consumers, businesses, and governments.

How familiar is your company/organisation with the concepts of the Circular Economy?

- Extremely familiar.

### Circular strategy/strategies implemented by Mamadi & Company (Pty) Ltd:

- Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.
- Prioritize Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy are used in an efficient way or obtained from renewable sources.
- Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.
- Use Waste as a Resource – Use waste materials as a resource and recover waste for reuse and recycling.

### Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards?



### Sustainable and circularity concepts applied by Mamadi & Company (Pty) Ltd:

- Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.
- Cradle to Cradle: The design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.

If your company's/organisation's equipment breaks down, how do you deal with it?

- Through a Health, Safety, Security and Environmental (HSSE) incident reporting system. Equipment breakdowns must be reported to the HSSE officer. They are then escalated to senior management for rectification.

Does your company/organisation separate waste?

- No.

Is your company/organisation involved in any local or international circular economy projects? If yes, please elaborate:

- Yes
- Industrial symbiosis scoping analysis for Free State province.
- Material flow analysis, waste in-depth analysis, and industrial symbiosis for a sand-casting company.

What do you do to tackle your company/organisational challenges?

- As an employee, company challenges are raised to senior management typically during monthly meetings.
- The kind of support that is most important to take your company to the next level is circular economy certification or accreditation, business accelerator support, and networking opportunities with initiatives in the same or related field.

What measures do you use to assess how circular your company/organisation is?

- Our company plays a role in the feasibility of implementing circular economy projects and assessing materials for their potential to be used in industrial symbiosis. The company provides advisory, consulting and development services within the Energy, Chemicals, Oil and Gas industry, enabling our clients transition to cleaner energy.



# Conclusions

This report contributes 24 cases of companies partially or fully practicing circular economy in Gauteng Province, South Africa. This is also part of Footprints Africa documenting circular economy companies in Africa. This reveals that despite the concept of circular economy being characterized as Global North conception, there is evidence of its manifestation in the Global South, more specifically in and around Gauteng Province. The mapping of circular economy cases was achieved and realized by conducting keyboard research, sending out a survey questionnaire, making follow-up calls, and engaging directly with companies at events and/or expos. Mapping the case studies was/is the first step in the right direction towards creating awareness about the concept and how it manifests in the Global South.

In addition, this study has created conditions for an ecosystem of circular economy companies in and around Johannesburg. This ecosystem is most likely going to lead to exchange of resources, ideas and opportunities among the organisations and people in these organisations. Most of the companies are in manufacturing, followed by those in green energy. There are 3 companies in goods and services, and 2 companies respectively in mining, environmental health and agriculture. The rest are in clothing, electronics, and research. Furthermore, the move to circular economy is critical to a sustainable and environmentally friendly world. In summary, these practices of CE by different companies have potential to influence policy direction, improvement in people's way of living, economy and ultimately the environment.



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## Appendix A: Questionnaire

1. Do you give a consent to take part in the study? Yes/No
2. Do you give consent for information collected by this questionnaire to be shared with Footprint Africa?  
The information will feed into their case study database as described above. Yes/No
3. What is the name of your company/organisation?
4. What would be the description and/or tagline of your company/organisation in a couple of sentences?
5. Does your company/organisation have a website, social media page or online presence (e.g. articles)?  
Yes/No
6. If you answered yes to Question 5, please add the link(s) below:
7. What type of entity best fits your company/organisation?
  - Private company?
  - Non-profit company?
  - Social Enterprise?
  - Government Institution?
  - Cooperative?
8. In what stage of development is your company/organisation?
  - Initial Idea?
  - Proof of Concept?
  - Minimum Viable Product?
  - Start-up?
9. In what industry does your company/organisation work? Choose one
  - Societal Services – Providing general societal services.
  - Transportation and Logistics – Producing transportation equipment and/or providing services for the transportation of goods and people.
  - Goods and Services – Producing and providing business and consumer goods and services.
  - Tourism Services – Selling, arranging, or chartering accommodation, transportation and/or tours for travelers.
  - Professional Services – Providing specialist services to support consumers, businesses, and governments.
  - Agri/Food – Producing agricultural products and/or processing them into food and beverage products for consumption.
  - Capital Equipment – Producing electrical equipment and/or machinery for industrial use.
  - Materials and Fuels – Extracting resources and/or processing them to produce materials for use by society.
  - Construction and Infrastructure – Producing building materials and/or providing services to create residential and non-residential infrastructure and real estate
  - I do not know.
10. How familiar is your company/organisation with the concepts of the Circular Economy? Choose one.
  - Extremely familiar
  - Very familiar
  - Somewhat familiar
  - Not so familiar
  - Not at all familiar
11. What circular strategy/strategies, does your company/organisation implement?  
You can select up to 3 options.
  - Design for the Future – Account for the systems perspective and full project life cycle already during the design process, to use the right materials, to design for appropriate lifetime and to design for extended future use.

- Prioritise Regenerative Resources – Ensure renewable, reusable, non-toxic resources. Materials and energy is used in an efficient way or obtained from renewable sources.
  - Rethink the Business Model – Consider opportunities to create greater value, increase the use intensity of your product and align incentives through business models which encourage resource efficiency through the full lifecycle of the product, from design to use and end-of-life.
  - Collaborate to Create Joint Value – Work together throughout the supply chain, with organisations, with the public sector or with communities to increase transparency and create joint value.
  - Incorporate Digital Technology – Use digital, online platforms and technologies that allow to track and optimize product and resource use, strengthen connections between supply chain actors, and enable the implementation of circular business models.
  - Strengthen and advance knowledge – Develop research, structure knowledge, encourage innovation networks and disseminate findings with integrity.
  - Preserve and Extend What's Already Made – While products are in-use, maintain, repair and upgrade them to maximise their lifetime and give them a second life through take back strategies when applicable.
  - \*▪ Use Waste as a Resource – Utilized waste materials as a resource and recover waste for reuse and recycling.
  - I do not know
  - If Other, please specify:
12. Which United Nations Sustainable Development Goals (SDGs) does your company/organisation contribute to/work towards? Please select the top 3 SDGs.
- No Poverty (SDG 1)
  - Zero hunger (SDG 2)
  - Good health and well-being (SDG 3)
  - Quality education (SDG 4)
  - Gender equality (SDG 5)
  - Clean water and sanitation (SDG 6)
  - Affordable and clean energy (SDG 7)
  - Decent work and economic growth (or economic opportunity) (SDG 8)
  - Industry, innovation and infrastructure (SDG 9)
  - Reduced Inequality (SDG 10)
  - Sustainable cities and communities (SDG 11)
  - Responsible consumption and production (SDG 12)
  - Climate action (SDG 13)
  - Life below water (SDG 14)
  - Life on land (SDG 15)
  - Peace and justice strong institutions (SDG 16)
  - Partnerships to achieve the goal (SDG 17)
  - I do not know
13. What sustainable and circularity concepts has/is your company/organisation applying?
- You can select up to 3 options.
- Biomimicry: The concept of looking at how nature has solved problems and finding inspiration from nature for problem solving.
  - Industrial symbiosis: Process by which waste of one industry becomes a raw material for the next industry often within close geographic proximity.
  - Cradle to Cradle: the design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either returned to the earth or cycled back into the economy in a safe manner.
  - Regenerative agriculture: By returning nutrients back to the soil and other systems, mimicking how nature cycles every part of living materials.



- Climate smart agriculture: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.
  - Permaculture: The conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems.
  - The performance economy: to achieve a higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk.
  - Natural capitalism: The concept of acknowledging that human-made capital (eg infrastructure) can only be built on natural capital (raw materials, land etc.) and hence creates an interdependency.
  - Regenerative design: Regenerative design seeks to not merely lessen the harm of new development, but rather to put design and construction to work as positive forces that repair natural and human systems.
  - The Blue Economy: Is where the best for health and the environment is cheapest and the necessities for life are free thanks to a local system of production and consumption that works with what you have.
  - Bioeconomy: the production of renewable biological resources and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy.
  - Humansphere: Social inclusivity in form of sustainable lifestyle & livelihoods, circular economy community initiatives, inclusive circular economy business model and/or macro-economic policy framework for sustainable resource use to fulfil the objectives of employment, education, income, life expectancy and reduced inequality.
  - I am not familiar with any of these concepts yet.
14. If your company's/organisation's equipment breaks down, how do you deal with it?
15. Does your company/organisation separate waste? Yes/No
16. What do you do with the separated waste? Please elaborate:
17. Do you have a system in place that ensures your products remain in the economy after use (eg, collection or take back)? Yes/No
18. Is your company/organisation involved in any local or international circular economy projects? If yes, please elaborate:
19. What are the levels of challenges you have faced, or are facing, in developing your company/operation in the following categories?
- Not a challenge
- Somewhat of a challenge
- Moderate challenge
- Extreme challenge
- Reliable Electricity
  - Access to Finance
  - Access to Skills
  - Technical Expertise
  - Working in the Informal Industry
  - Corruption
  - Logistics
  - Access to Circular Raw Materials/Components/Supplies
  - Supplier Willingness
  - Consumer Readiness
  - Advanced Machinery
  - Enabling Environment (Policies, Laws, and Regulations)
  - Taxes
20. What do you do to tackle your company/organisation challenges?
21. Please specify what kind of support is most important in helping to take your company/organisation to the next level?

Please select the top three

- Training on specific circular economy topics
- Support in developing and applying circular economy metrics for your company/organisation (e.g. of material flows and their impact, job creation and other socio-economic indicators).
- Circular economy certification or accreditation
- Coaching and/or mentoring.
- Business accelerator support.
- Support to pilot/proof of concept.
- Support in connecting or expanding your value chain.
- Co-working/Makerspace/Fab Lab access.
- Networking opportunities with initiatives working in the same related field.
- I am not looking for any support.
- If Other, please specify:

22. What measures do you use to assess how circular your company/organisation is? Please elaborate:

23. If you are interested in the results of the study please leave your email address below:

24. If you have any additional comment(s) please feel free to use the text box below:

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