Stresses / Shocks

Poverty | Unemployment

Qualities of a resilient city

Robust city | Inclusive city | Integrated city

RESILIENT CAPE TOWN PILLARS

PILLAR 1: People **Compassionate,** holistically healthy city

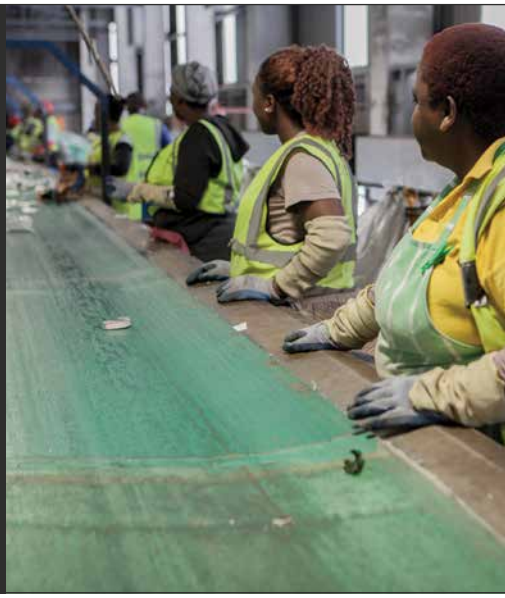
PILLAR 2: Place & Space **Connected,** climate adaptive city

PILLAR 3: Economy **Capable,** job creating city

PILLAR 4: Disaster readiness **Collectively,** shock-ready city

PILLAR 5: Governance **Collaborative,** forward-looking city

Enterprise Development Programme: Building economic resilience through waste diversion and entrepreneurship in Atlantis, South Africa.



Purpose

This case study describes the work of the Enterprise Development Programme (EDP), an ongoing project which was started by GreenCape in 2017 to address waste stream opportunities in Atlantis, South Africa, identified by the Western Cape Industrial Symbiosis Programme (WISP) in 2015.

The EDP builds economic resilience in Atlantis and the greater Cape Town metropolitan area by fostering green economic growth and by connecting the workforce with a changing economy. It also collaborates with businesses to create a resilient local economy.

The case study discusses:

- The results and opportunities identified as a result of work carried out by GreenCape's WISP in Atlantis in 2015 and 2018;
- The origin of the EDP and its subsequent evolution

It is written for:

- **Cities and regions** focused on building resilience through **enterprise development, job creation and waste diversion;**
- **Businesses and entrepreneurs** seeking to **improve efficiency and reduce waste**
- **Funders and other organisations** seeking to replicate similar programmes

This case study is part of a series highlighting how Cape Town is building resilience in order to: SURVIVE | ADAPT | THRIVE

Cape Town's Resilience Strategy is a commitment to ensure that the City thrives in the future regardless of what shocks and stresses it faces. Resilient Cape Town offers a roadmap for a 21st Century metropolis to enable the city to become more resilient to growing physical, social and economic challenges. It envisions Cape Town as a **compassionate, connected**, and **capable** city where Capetonians **collaborate** across households, communities and institutions, to build **collective** responses to the current and future social, environmental and economic challenges.

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KEY INSIGHTS

The Enterprise Development Programme builds resilience by:

- ✓ Identifying waste streams and available resources;
- ✓ Empowering individuals and businesses through skills development and business training support;
- ✓ Providing a network of partnerships and support;
- ✓ Diverting waste from landfill

Keys lessons learned include:

- ✓ EDPs can be more impactful with the inclusion of a product development specialist;
- ✓ A critical early consideration for any EDP project is the affordability of locally available technology;
- ✓ Established businesses are better placed than start-ups to make use of resources identified through material flow analyses

Background

In 2015-2016 the Western Cape Industrial Symbiosis Programme (WISP), powered by GreenCape, conducted a project for the Atlantis Special Economic Zone (ASEZ). The goals of the project were to:

1. improve resource efficiency within its boundaries;
2. identify opportunities for green enterprise development and;
3. demonstrate regional development using Industrial Symbiosis.

Seventy-seven (77) local manufacturers were identified and 46 of them, from 13 different sectors, were successfully engaged through site visits and workshops. These included the agriculture, automotive, chemicals, construction, electronic products, food & beverages, glass, metal processing, plastic, pulp & paper, textiles, waste management and wood products industries.

These engagements identified 417 resources (209 haves & 208 wants)[1]. The largest resource groups by weight were: minerals, wood, paper/ cardboard and textiles, while the top two service resources were energy expertise and logistics.

From these identified resources, WISP was able to facilitate five synergies which resulted in the following impacts:

- 32 tonnes diverted from landfill;
- R2.1 million in additional revenue;
- R2.7 million cost savings;
- 3 500 tonnes CO_2e[2] greenhouse gas reduction.

WISP inferred a number of further opportunities for new business in the area, based on weights of resources and potential value, as seen in the image below.

Today:

Potential Diversion 1,043 Tonnes

Opportunities for available resources with existing solutions

- Textile
- Pallets
- Wood
- Organics

Financial Spinoff **R581k** (Value R413k + Cost Savings R168k)

Tomorrow:

Potential Diversion 103 Tonnes

Opportunities for inward investment and expansion to complement existing resources and solutions

- Cardboard Tubes
- Energy Efficiency
- Energy Usage Offset

Financial Spinoff **R117k** (Value R77k + Cost Savings R40k)

Future:

Potential Diversion 72,612 Tonnes

Innovation potential drawing on local research and infrastructure and strategically important resources

- Foundry Sand
- Pulping Rejects
- Bentonite
- Process water

Financial Spinoff **R28m** (Value R6m + Cost Savings R22m)

1 Resources = materials, energy, water, capacity, expertise, warehouse space and logistics

2 CO_2e = carbon dioxide equivalents

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What is resilience?

In human terms, resilience refers to *"the ability of an individual to recover from setbacks, adapt well to change and to keep going even when facing difficult circumstances".*

Chronic stresses weaken the fabric of a city on a day-to-day or cyclical basis, for example, high unemployment, inadequate public transport systems, endemic violence, food insecurity and substance abuse. **Acute shocks** are sudden sharp events that threaten a city, for example, drought, fires, floods, diseases outbreaks and infrastructure failure.

Building resilience to shocks and stresses matters because disruptions or disasters of any sort, whether regional or distinctly local in scope, short or long in time scale, can be costly to those they impact. They can result in the loss of livelihoods, they can severely impact citizens' mental health, they can result in injuries and death, and they can drive apart communities.

A resilient Cape Town is a compassionate, connected, and capable city, where Capetonians collaborate across households, communities and institutions, to build collective responses to the current and future social, environmental and economic challenges.

PILLAR 3
Cape Town is a capable, job creating city

VISION
Capetonians turn the challenges of resource constraints and rapid technological change into new opportunities.

GOAL 3.1	**GOAL 3.2**	**GOAL 3.3**	**GOAL 3.4**
Foster green economic growth	Enable enterprise development in the informal economy	Connect the workforce with a changing economy	Collaborate with businesses to achieve a resilient local economy

ACTION: 3.1.1
Leverage the newly created Atlantis Special Economic Zone to cultivate the green economy while promoting economic mobility

DESIRED OUTCOME:
Increased local manufacture of green technology by capitalising on new local and regional market opportunities, with the associated creation of new jobs, particularly for Capetonians displaced from fading economic sectors.

ACTION: 3.1.4
Undertake a new waste economy study

DESIRED OUTCOME:
Detailed understanding of the multitude of waste streams in the city-region, including type, quantity, and projected changes over time, for the purpose of identifying risks to the sustainability of the waste service and new opportunities in the economy that can build resilience to resource constraints

WHAT IS THE GREEN ECONOMY?

The working definition for the green economy as it relates to Cape Town is: "expanded economic opportunities created through the provision of goods and services and the use of production processes that are more resource efficient, enhance environmental resilience, optimise the use of natural assets and promote social inclusivity."

The business opportunities were titled as follows:

Table 1: Business Opportunity Titles

Textile Processing	Wood Chipping	Contaminated Bentonite Processing
Cardboard Core Processing	On Site Paper Pulp / Effluent Tech	Foundry Sand Value Add
Cardboard Core Containers	Off Site Paper Pulp / Effluent Tech	Paper Recycler/Dehydration of Waste Streams
Pallet Recycling	Small-scale embedded generation (SSEG) energy	Material Recovery Facilitation

The Enterprise Development Programme – Phase 1

In February 2017, following the results of WISP's earlier work in Atlantis, WISP and the South African Renewable Energy Business Incubator (SAREBI) worked together to conduct an EDP in Atlantis. The EDP sought to train and support aspiring entrepreneurs to make business plans based on the opportunities identified by WISP (Figure 1). The details of the resources were explained to the aspiring entrepreneurs, providing a significant part of their market research for them already.

Participants in the EDP were given one full day of training per week for three months, during which time they were required to construct a business plan, test the market and find customers and funding.

At two intervals during the training the participants were required to present their progress to a panel of judges. The judges selected the businesses with the most promising business plans and excluded those which showed insufficient economic viability. At the end of the programme, two participants were offered full incubation services by SAREBI, funded by WISP.

The services offered by SAREBI included internal management, financial and HR management and business coaching services. WISP continues to provide ad hoc support to these two and others from the first EDP to assist them with operationalising.

The Enterprise Development Programme – Phase 2

In February 2018, SAREBI received direct funding to conduct another iteration of the EDP using the same format as before. The aim was to equip aspiring entrepreneurs to create a business plan and investigate business opportunities provided to them through the WISP market research.

The Enterprise Development Programme, formed through the partnership between WISP, the City of Cape Town and SAREBI, has allowed us to create an effective green economy solution to two key challenges; diversion of waste from landfill and job creation. As we develop the EDP further, we continue to learn valuable lessons that will have relevance to similar projects globally.

Oliver Bonstein, WISP Facilitator

WISP provided information about available waste materials which had no solution, as listed below:

Table 2: Available materials identified by WISP for the EDP in 2018

Wood: (chemically treated wood products) MDF, sleeper wood off-cuts, chipboard and shutterboard	Waste water: Contaminated with calcium carbonate (CaCO3) and organic fibres	Foundry sand: green sand or chemically bonded sand
Glass: Laminated glass	Composite plastic car bumpers	Construction and demolition waste
Plastic PVC: rigid or "unplasticised"	Oily rags	Paint sludge
Organics: Used coffee grounds	Rockwool off-cuts	Polyurethane
Cardboard cores	Rubber crumb and dust	Wet blue leather skins and off-cuts

To date, all of the above listed business opportunities are still available. WISP is working with numerous stakeholders to find value adding solutions for these materials, and current business plans towards this end are in the planning phase.

Key challenges and lessons learned

As much as the EDP as has been a learning process for the entrepreneurs and start-up businesses involved, so it has been for WISP and SAREBI. Three key observations and learnings have been made over the four-year evolution of the EDP. These relate to (1) the type of business support offered, (2) affordability of available technology, and (3) timing.

1. Business support: For some of the candidates, product development proved to be a challenge. Candidates had to apply a technology that would optimise feasibility based on volumes of material, skills required and costs. **The addition of a product development specialist would further improve the success rate of the entrepreneurs.**

2. Technology affordability: This proved to be a stumbling block for some of the candidates that planned to import recycling technologies. These candidates proposed to use high tech rather than labour intensive solutions, relating to high start-up costs. **This approach would require funds in-house, to bring in an equity partner or source grant funding. This approach also required operation skills for the tech solution.**

3. Timing: The EDP was largely born out of the realisation that certain waste streams provided potential opportunities for entrepreneurs / start-up companies. However, given the amount of time needed for a start-up company to become operational **the availability of materials for the EDP would have to be verified** as it was expected that waste producers in Atlantis could have found other solutions, thus negating the original business opportunity.

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The Enterprise Development Programme – the way forward

In July 2019, WISP and the City of Cape Town's Enterprise and Investment Department undertook a new project to find business opportunities in the Atlantis Industrial Area. The project differed from previous iterations of the EDP in that the purpose was to find opportunities to create additional value in **existing businesses** with an **existing track record,** thereby **reducing the risk** which is inherent in the start-up phase of business. The study began with a Materials Flow Analysis for all manufacturers in the industrial area, also targeting qualitative understanding of business opportunities. This project is ongoing.

The EDP helps to build economic resilience in Atlantis, Cape Town, in 4 ways:

1. **Identifying waste streams and available resources**

   Material flow analyses identify key waste streams and available resources. These are in turn used to improve a business's efficiency and/or for enterprise development purposes.

2. **Empowering individuals and businesses through skills development and business training support**

   Through the EDP, and with support from SAREBI, entrepreneurs, start-ups and established businesses have been able to receive business support, upskilling these businesses and making them more resilient.

3. **Providing a network of partnerships and support**

   The EDP builds partnerships by linking businesses through WISP synergies and/or through resource sharing and enterprise development.

4. **Diverting waste from landfill**

   The EDP turns one company's waste stream into another company's resource and, in so doing, diverts that resource from going to landfill.

For more information and support contact GreenCape's skills development desk: info@greencape.co.za or call (021) 811 0250. Additional resources on improving skills development are available from: www.greencape.co.za/content/focusarea/skills-development

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