NCPC

INDUSTRIAL EFFICIENCY IN SOUTH AFRICA

Opportunities for SMMEs support by NCPC-SA (and CSIR)

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The National Cleaner Production Centre South Africa (NCPC-SA) supports South African industry to **improve competitiveness** and reduce **environmental footprint** through the implementation of **resource efficient and cleaner production (RECP)** methodologies.

*Funded by **the dtic** and hosted by the **CSIR***

the dtic
Department:
Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA

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INDUSTRIAL EFFICIENCY IN SOUTH AFRICA

CSIR
Touching lives through innovation

Services to Industry

In-plant assessments to identify opportunities to save energy, water and materials

Training of industry professionals to implement RECP in their companies.

Supporting implementation of technical interventions to realise savings.

Assisting in the redirection of industry waste to be used by other companies through industrial symbiosis.

Assistance with developing bankable business case for energy funding.

Baselining, measurement and verification towards carbon reporting.

RECP Tools

- The NCPC-SA aims to support businesses through their RECP journey and assist South African industry with tools and technical advice.
- Our website provides a number of tutorial videos and downloadable booklets to assist companies of all sizes.

*RECP entails the continuous application of preventative environmental strategies to **processes, products** and **services** to increase efficiency and reduce risks to communities and the environment.*

Training and Skills Development

Training courses are offered at **introductory**, **end-user** and **expert level**, and have been designed to provide a comprehensive learning pathway for those wishing to develop expertise in the fields of:

- Resource Efficient and Cleaner Production (RECP)
- Energy Management Systems (EnMS)
- Energy Management 101
- Energy Performance Measurement Indicators (EnPMI)
- Power Quality Principles
- Sustainable Finance
- Energy Systems Optimisation (ESO):
- Biogas Systems, Compressed Air Systems, Motor Systems, Pump Systems, Steam Systems, Fans Systems, and Large scale Cooling and Industrial Refrigeration Systems.

Waste to Feed:
Mezé Foods - Khepri Biosciences Innovations (NCPC-SA)

Mezé Foods is a manufacturing company producing cheeses and other food products, including dips, pestos, olives and bakery products. Khepri Biosciences Innovations is a biotechnology company working in the agricultural, health and research sectors. Both are based in Gauteng.

A **waste assessment by the NCPC-SA** at Mezé Foods identified the opportunity to recover the 1000 tonnes of waste whey sludge disposed annually from their production process operations.

A link was facilitated between Meze Foods and Khepri, to explore the feasibility of processing the waste sludge into animal feed.

An 18-month offtake agreement was signed ending in December 2023. In the first six (6) months, approximately 156 tonnes of protein waste was diverted from landfill to Khepri who used it to manufacture animal feed.

Impact thus far:

- Waste safely and sustainably diverted, reducing disposal costs and environmental impact (Mezé Foods)
- Improve feed quality, reduced input costs and increased sales revenue as a result of using the whey as a feedstock material (Khepri).

Mezé Foods is also working with the NCPC-SA on energy efficiency and renewable energy solutions. Results will be shared as projects are completed.

Mezé Foods plant, source of protein waste

Khepri labs organic waste process and animal feed end product

Resource Efficiency and Green Methodology Support:
Planet Event, KZN support by NCPC-SA

- Planet Event (Pty) Ltd is a family-owned business in Jacobs, Durban with a staff compliment of 77 (medium enterprise). The company manufactures PVC plastic crates and shoe soles for the footwear industry. They produce 30,000 pairs per month of soles, and their main customer is Bata Shoes.
- The company asked for assistance to save water and electricity costs and address the production delays caused by loadshedding. They also wish to reduce their plastic and other waste.
- The **NCPC-SA** undertook a resource efficiency assessment at the plant, as well as a lifecycle assessment on the company's shoe soles.
- The resource efficiency assessment identified potential energy, water and materials savings per annum of R300 000 without solar PV installation, and R1.1 million with solar. Investment of R7 million is required, primarily for the solar PV solution.
- The NCPC-SA is supporting implementation of low-cost options and eco-innovation in reducing the environmental impact of the shoe soles. Assistance is also being provided to source funding for the capital investment required.

Clothing, Textile, Footwear & Leather Waste Disposal Project

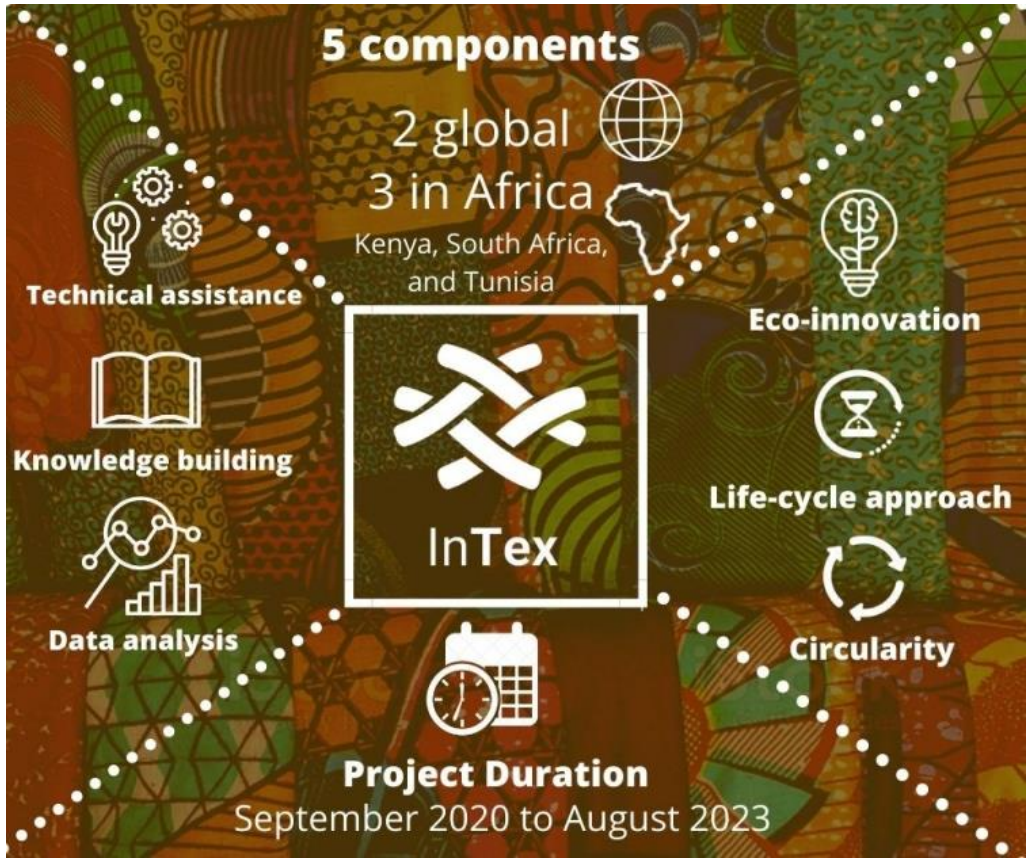
Circularity in the CFTFL sector by the NCPC-SArogramme

- Destruction of confiscated clothing, textile, footwear and leather goods is being done by the NCPC-SA in partnership with **the dtic** and SARS.
- Project commenced September 2022. Ended in March 2024.
- Upcycle, recycle seized goods after destruction. Job creation and skilling in green economy skills. Addresses illegal dumpling of goods in SA.
- About 35% of the destroyed clothing and textiles went to a textile recycling company, Connacher who convert textile waste into insultation, bedding, motor industry door panels, etc.
- Another 23% of the waste will go into making wiping cloths / rags by Wiper Fibres cc in Germiston.
- 1 800 tonnes of CTFL goods processed:

	Clothing & Textiles	Footwear & Leather
Processed at Kaserne SWH	1 514 667 kg	61 559 kg
Processed at ISCOR SWH	234 294 kg	290 kg
TOTAL Volumes Processed	**1 748 961 kg**	**61 859 kg**

About InTex

- The project "**In**novative Business Practices and Economic Models in the **Tex**tile Value Chain" (InTex).
- Three-year UNEP project funded by the European Union (EU).
- Global time frame – October 2021 to August 2023
- The InTex project has five components.
  - 2 components have global reach,
  - 3 components focus on national implementation in three countries in Africa: Kenya, South Africa, and Tunisia



https://www.unep.org/intex

InTex

InTex key concepts

Eco-innovation	Product Environmental Footprint (PEF)	Circularity
UNEP's Eco-innovation approach guides SMEs in incorporating circularity and resilience into every aspect of their business strategy and underlying business models, operations, products, and processes to reduce the environmental and social impact of human activity. This results in an agile, reactive, and competitive company. http://unep.ecoinnovation.org/	The European Commission's Product Environmental Footprint (PEF) measures the environmental performance of a good or service throughout its life cycle (from extraction of raw materials, through production and use, to final waste management). As it is a standardized methodology, SMEs can gain competitive advantage and credibility by using PEF, providing a robust way for consumers to compare the environmental footprint of their products	Circularity provides a model to transform the current economic system towards a sustainable future. As outlined in the UNEP circularity platform. (www.unep.org/circularity) circularity's underlying objective is that materials should be kept at their highest possible value as they move and are retained within the value chain. Circularity builds on a guiding principle: ''Reduce by design'', as well as value-retention processes: Refuse, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose and Recycle.

Technical considerations / projects / services

- Sector guidelines free to download: https://www.industrialefficiency.co.za/tools/
- Circularity in C&T sector project 2024-28 looking at full production lifecycle. (Engineering News article)
- Materials testing at CSIR laboratories – using “waste” for production of other products requires quality control.
- NCPC-SA training courses: https://www.industrialefficiency.co.za/training/

Industrial Symbiosis Programme in South Africa

LIM-ISP Jointly funded with the Limpopo provincial government and delivered by the NCPC-SA

GISP - Funded by and delivered by the NCPC-SA and the Gauteng Department of Agriculture and Rural Development (GDARD)

MISP Jointly funded with the Mpumalanga provincial government and delivered by the NCPC-SA

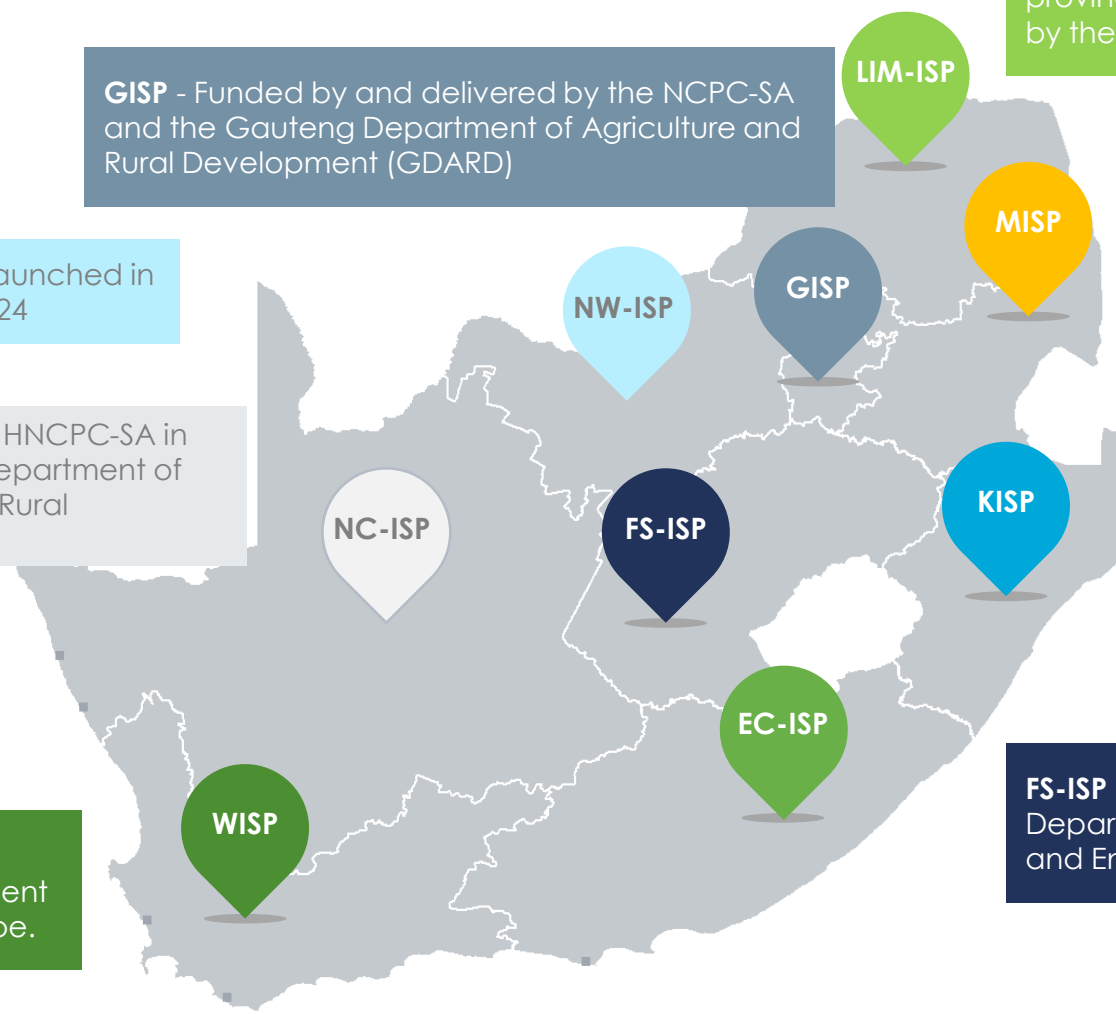
NW-SP – launched in March 2024

NC-ISP – launched in March 2023, HNCPC-SA in partnership with Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform

KISP Jointly funded and delivered by the NCPC-SA, Trade and Investment KZN and the KZN Department of Economic Development, Tourism and Environmental Affairs.

FS-ISP Implemented in partnership with Free State Department Small Business Development, Tourism and Environmental Affairs (DESTEA)

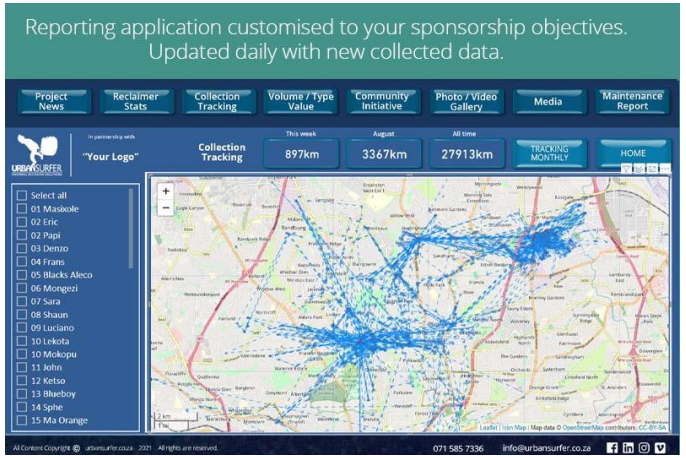
WISP - Funded by the Western Cape Department of Economic Development and Tourism. Delivered by GreenCape.



Urban Surfer Informal Recycling Solutions

NCPC-SA support for Eco Logic Awards advances informal waste economy

- The NCPC-SA provided technical input and funding to support the Eco Logic Awards 2023, specifically the Innovation category.
- Category winners, **Urban Surfer**, support the efforts of informal waste reclaimers by means of training, equipment and a custom mobile app and internet platform that helps to link reclaimers with sponsors and a broader community. (https://urbansurfer.co.za/)
- The Eco Logic Awards is providing unprecedented exposure for Urban Surfer, allowing them to expand their reach and support to informal waste reclaimers. Winning the award has also connected Urban Surfer to the NCPC-SA, which will increase access of the company and its application to waste streams from industry.
- Urban Surfer aim to provide support and community initiatives to increase informal reclaimer income and assist in the sustainable management of recyclable waste. Their story was broadcast as part of the Eco-Logic Awards on the People's Weather DStv channel 180 or Openview Channel 115.



Thank You

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