

CIRCULAR PRODUCT DEVELOPMENT ROAD MAP

INTRODUCTION

The Africa Circular Economy Network (ACEN), in partnership with the World Resources Institute (WRI), the IKEA Foundation, Cleaner Production and Climate Innovation Centre (CPCIC) and Resonance, through Circular Food Systems for Rwanda (CIRF) programme, has been supporting businesses in Rwanda to shift from linear to circular food systems.

The programme focuses on helping small- and medium-sized enterprises adopt regenerative practices, reduce food loss and waste, and create value from by-products.

By combining technical support and capacity building, CIRF is accelerating the shift toward a more sustainable, inclusive, and climate-resilient food economy in Rwanda.

Learn more at **acen.africa**

ABOUT CIRCULAR ECONOMY PRODUCT

Circular economy products (CE products) are goods designed to minimise waste and maximise resource use through reuse, recycling, or repurposing.

Under the Circular Food Systems for Rwanda (CIRF), many companies adopting circular practices have embraced these products as key drivers of sustainability and innovation.

BENEFITS OF NEW CE PRODUCTS

NEW REVENUE STREAMS

NEW OPPORTUNITIES FOR JOB CREATION

REDUCE (FOOD) WASTE & LOSS

NEW MARKETS FOR A NEW CIRCULAR ECONOMY PRODUCT(S)

RESOURCE EFFICIENCY THAT HELPS TO SAVE OPERATIONAL COSTS

CIRCULAR ECONOMY PRODUCT DEVELOPMENT ROADMAP



CASE STUDIES

The following companies have been part of the CIRF programme and present concrete business examples of the roadmap to adopting circular economy products. Their experiences highlight how new products can transform waste into resources, create additional revenue streams, and contribute to community well-being.

1 ZEAN

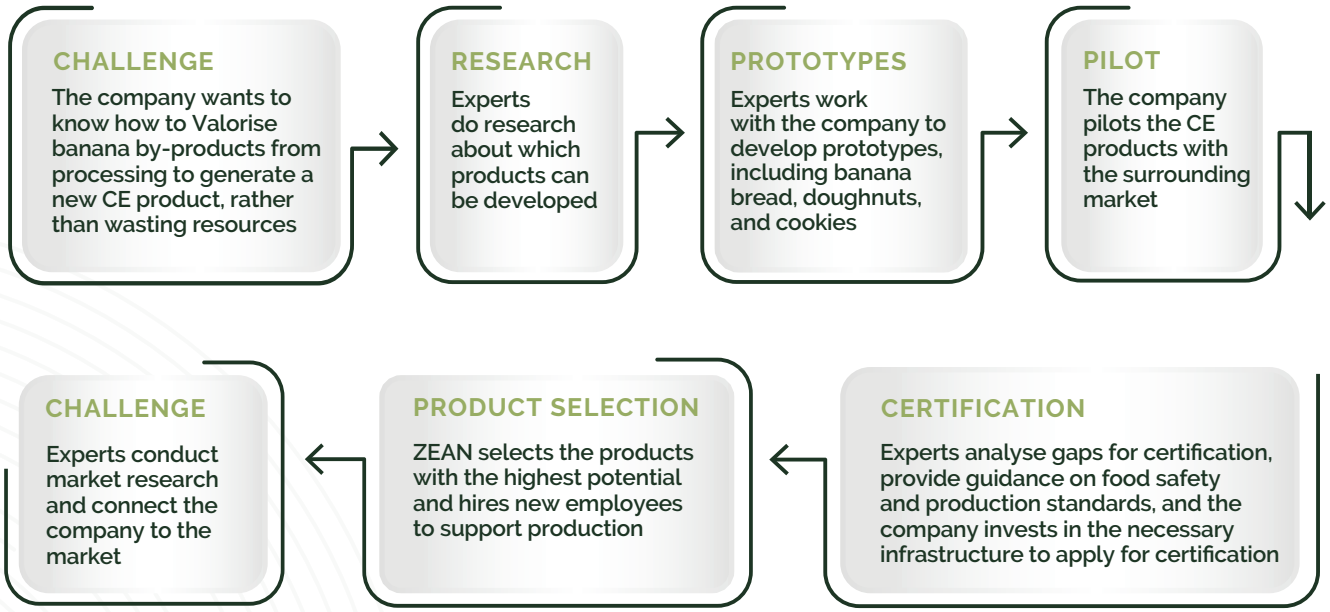
ZEAN is a banana processing company producing banana chips and committed to sustainable practices. Previously, banana by-products were considered waste, creating challenges in waste management.

Through the CIRF programme, ZEAN transformed these by-products into valuable ingredients, developing new circular economy food products such as banana bread, doughnuts, and cookies.

> *Circularity has improved our revenue by turning banana residues into ingredients for new products. What was once waste is now a resource, benefiting both our business and the community by creating profits and supporting food security.*

Enode Nduwayezu
Co-founder of ZEAN

CIRCULAR ECONOMY PRODUCT DEVELOPMENT ROAD MAP FOR ZEAN



ZEAN'S NEW BANANA BAKERY PRODUCTS

These products use ripe bananas as the main ingredient, combined with wheat flour and other basic baking inputs, to create nutritious and versatile foods. They provide natural sweetness, energy, fiber from bananas, and can be consumed at breakfast, as snacks, or as desserts.

Banana Doughnuts

Made with bananas, upcycled flour made from banana by-products, eggs, milk, vegetable oil, vanilla sugar, and a touch of ginger.

Banana Cookies

Contain bananas, upcycled flour made from banana by-products, milk, sunflower oil, sugar, and baking powder, baked until golden for a soft, slightly crunchy texture.

Banana Bread

Soft and moist, prepared with bananas, upcycled flour made from banana by-products, vegetable oil, sugar, and baking powder.



IMPACT OF CIRF ON ZEAN

JOB CREATION

4 new jobs created, including 1 permanent bakery worker and casual staff to deliver product.

RESOURCE EFFICIENCY

600 litres of cooking oil saved monthly for sale to soap producers, while **12% is recycled back into ZEAN's operations.**

CIRCULAR PRODUCTS

3 new products developed (banana bread, doughnuts, and cookies).

REVENUE

$6480 PER MONTH generated from banana bread and doughnuts in the first month, with revenue expected to grow as testing continues.

2 ABOUT KIGASALI COFFEE COMPANY

Kigasali Coffee Company, based in Kigali, Rwanda, has advanced its circular practices with support from CIRF. Coffee husks are transformed into fuel pellets and used in drying machines to process coffee, replacing charchoal, and while efficient cooking stoves have been introduced to pellets as a clean energy source for cooking.

These innovations create a closed-loop system for agricultural waste, generate new products, and create jobs.

> *100% of coffee husks are now reused as fuel pellets or an energy source for our operations. Our circular economy skills have improved, we now know how to make pellets and efficient cooking stoves, and we have created 7 new jobs. At this moment, we even have visitors who want to visit our company just to see our pellets.*

Console Niyigena
Communications and Operations Manager
Kigasali Coffee Company

CIRCULAR ECONOMY PRODUCT ROADMAP FOR KIGASALI COFFEE COMPANY

CHALLENGE
Company wants to know how to make a new product from coffee husks

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RESEARCH
Expert does research about which new products can be developed

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PROTOTYPES
Expert and the company develop prototypes (pellets) after a company visit

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PILOT
Company rents machines, and pilots pellets with a new market

←

MARKET RESEARCH
Company rents machines, and pilots pellets with a new market

←

CERTIFICATION
Company applies for certification

NEW CIRCULAR SOLUTION

Kigasali's pellets are made from upcycled coffee husks, turning farm by-products into a clean, efficient energy source for cooking. When used with it's specially designed stoves, the pellets provide steady heat, burn more efficiently than traditional briquettes, and reduce smoke for healthier indoor air.

Beyond clean cooking, every pellet supports local farmers in Rwanda by adding value to their harvest waste.





IMPACT OF CIRF KIGASALI COFFEE COMPANY

JOB CREATION

7 new employees hired to support expanded operations.

LOCAL IMPACT

Product diversification strengthens local livelihoods and enhances market presence.

CIRCULAR ECONOMY PRODUCTS

2 new products introduced, coffee husk pellets and efficient cooking stoves, creating a new revenue stream.

RESOURCE EFFICIENCY & COST SAVINGS

Pellets are now used as an energy source for coffee drying machines, replacing charcoal; the company plans to reuse 100% of its coffee husks.

KEY TAKEAWAYS

The circular economy product roadmap illustrates how agro-processing companies can adopt CE practices by turning challenges into solutions through new CE products. Such products can generate revenue, reduce costs, maximise environmental impact, and strengthen the food system.

CIRF's experience demonstrates that circular innovation is both feasible and profitable, helping companies lead the transition toward resilient and sustainable food systems.

Visit **circularfoodsystemsrwanda.org** to learn more.

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