AFRICAN CIRCULAR ECONOMY NETWORK

CIRCULAR FOOD SYSTEMS FOR RWANDA

Circular Food Systems for Rwanda

Technical Assistance Impact Report

May 2026



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Glossary

ACEN	African Circular Economy Network
ACEA	African Circular Economy Alliance
CE	Circular Economy
CAT	Circularity Assessment Tool
CIRF	Circular Food Systems for Rwanda
CPCIC	Rwanda Cleaner Production and Climate Innovation Centre
SMEs	Small and Medium Enterprises
TA	Technical Assistance
TAP	Technical Assistance Provider
WRI	World Resources Institute

Summary

The Circular Food Systems for Rwanda (CIRF) is a five-year project funded by the IKEA Foundation and managed by a consortium of partners led by the World Resources Institute (WRI), in partnership with the African Circular Economy Network (ACEN), Resonance, the Rwanda Cleaner Production and Climate Innovation Centre (CPCIC), and the African Circular Economy Alliance (ACEA).

CIRF supported 20 Rwandan SMEs in adopting circular economy (CE) practices in the agri-food sector through three interlinked activities: (1) Pipeline Development, increasing general market awareness of circular business practices; (2) Technical Assistance (TA) Facility, offering tailored support to transition SMEs toward more circular business models; and (3) Market Linkages, building supply, offtake, and infrastructure relationships to create more circular agri-food value chains. These activities are complemented by a policy workstream aimed at creating an enabling environment through collaboration between public, private, and civil society stakeholders.

Technical Assistance was delivered based on the individual needs of each SME, through the tailored support of Technical Assistance Providers (TAPs) who are specialists engaged to design and deliver customized training, coaching, and applied support. To guide the design of each SME's TA plan and evaluate its impact, ACEN developed the Circularity Assessment Tool (CAT). The CAT is a structured evaluation framework that assesses each SME's circular economy practices at baseline and upon completion of TA. The CAT evaluated SMEs across seven parameters:

- **CE Leadership:** the extent to which companies allocate time and resources to integrate circularity and collaborate across their value chain
- **Material Use:** how materials are sourced, selected, treated, and used in business operations
- **Repair & Reuse:** whether products can be remanufactured, repaired, or returned
- **Material Recovery:** the extent to which materials and resources are recovered and reused, internally or by third parties
- **Inputs & Processes:** whether companies have strategies or facilities in place to reduce food loss, waste, and post-harvest loss
- **Services:** whether companies offer services or memberships to optimize asset use
- **Operations:** equipment repairability, energy sources, and ownership of assets

Baseline CAT scores were used alongside a needs assessment to match each SME with the most appropriate TAP and to shape the priorities of each TA plan. Progress was then measured by comparing CAT scores before and after TA completion, with an increase in percentage representing positive growth toward circular economy adoption.

Key Findings

The table below summarizes the programme's key impact findings across all assessed SMEs. It is important to note that this assessment was conducted while some SMEs had only recently completed TA, while others had been implementing their TA learnings for over a year. Impacts are therefore expected to continue growing over time, particularly for SMEs in the earlier stages of implementation.

Impact Area	Before TA	After TA	Context
CE Knowledge (Cohort 1)	Average score: 2.3 / 5	Average score: 4.7 / 5	Scale: 1 = never heard of CE; 5 = very knowledgeable. All 6 Cohort 1 SMEs improved.
CE Knowledge (Cohort 2)	Average score: 1.9 / 5	Average score: 4.3 / 5	Before TA, 3 SMEs had never heard of CE. After TA, 12 of 13 rated themselves as knowledgeable or very knowledgeable.
Overall CAT Score (19 SMEs)	59%	80%	Positive growth across all 7 parameters. Biggest gains in CE Leadership (58% → 87%) and Inputs & Processes (51% → 81%).
New Circular Products / Services	—	21 new products introduced	Includes compost, pellets from coffee husks, value-added food products (juices, baked goods from by-products), insect-based feeds, and equipment rental services.
New Revenue Streams	—	10 SMEs reported new income	New revenues generated from circular products and services introduced through TA.
Cost Savings	—	9 SMEs reported operational savings	Savings achieved through reduced input costs, waste valorization, and more efficient resource use.

Jobs Created	—	73 new positions	New employment directly linked to TA-supported activities across 11 SMEs.
Investment Readiness	—	17 of 19 SMEs reported a positive change	SMEs reported greater confidence in seeking investment; access to finance remains a significant barrier to scaling.
Community Impact	—	74% of SMEs reported spillover effects	SMEs shared CE knowledge and practices with surrounding communities through training and knowledge exchange.

Key Lessons Learned

Access to finance must accompany TA. Technical assistance alone is insufficient if SMEs lack the capital to invest in equipment and infrastructure needed to implement what they have learned. Finance and TA must be delivered in parallel.

Practical, hands-on engagement drives the most impact. SMEs benefited most from in-person coaching, site visits, and sustained follow-up by TAPs. Longer engagement periods and more on-the-ground support would deepen outcomes.

Circular product development is a high-value entry point. The development of new circular products, especially in food and agricultural processing, was among the most appreciated and impactful forms of TA, generating new revenue streams and employment opportunities for participating SMEs.

Business development support is needed from the start. Gaps in financial literacy, data collection, and basic operational management limited some SMEs' ability to fully benefit from TA. Business development support should be integrated from the beginning of any future programme.

Clustering SMEs amplifies impact. Targeting SMEs located in economic zones or operating within the same value chains makes monitoring easier, strengthens peer learning, and enables deeper engagement with local government and community stakeholders.

The CIRF model is replicable. The programme's approach that combines needs assessment, tailored TA, and impact evaluation, can be adapted for circular food system programmes in other African countries.

Remaining Needs

While the CIRF programme has demonstrated significant impact, the assessment also surfaces areas where SMEs continue to require support as the programme moves toward completion. Access to affordable finance remains the most universally cited barrier to scaling TA learnings. Many SMEs have developed new circular products or identified new practices but lack the capital to invest in the equipment and infrastructure needed to operate at a viable scale. Product certification, which is a prerequisite for accessing premium buyers, export markets, and public procurement, also remains out of reach for many, due to financial constraints and the complexity of Rwanda's certification landscape. Continued support in these areas, alongside sustained market linkage facilitation, will be essential to ensure that the gains made through TA translate into long-term business growth and circular economy impact.

1 Background

The Circular Food Systems for Rwanda (CIRF) is a four-year project funded by the IKEA Foundation and managed by a consortium of partners led by the World Resources Institute (WRI), in partnership with the African Circular Economy Network (ACEN), Resonance, the Rwanda Cleaner Production and Climate Innovation Centre (CPCIC), and the African Circular Economy Alliance (ACEA). The programme delivers Technical Assistance (TA) through three interlinked activities: (1) Pipeline Development, increasing general market awareness of circular business practices; (2) TA Facility, offering tailored support to transition SMEs toward more circular business models; and (3) Market Linkages, building supply, offtake, investment, and infrastructure relationships to create more circular agri-food value chains. These activities are complemented by a policy workstream aimed at creating an enabling environment through collaboration between public, private, and civil society players in advancing the circular economy for Rwanda's agri-food sector.

1.1 Types of TA Support Provided

The 20 participating SMEs received tailored technical assistance based on the specific needs and circular economy opportunities identified through an initial assessment process. The type of support delivered varied by SME, reflecting the diversity of business models, value chains, and circular economy entry points across the portfolio. Table 1 provides an overview of the key highlights of TA support provided to each SME.

Table 1. Overview of Technical Assistance (TA) provided to participating SMEs.

SME	Key Highlights of TA Support

Africa Food Supply	Circular economy training on food processing; development of new CE food products from sweet potato and pineapple by-products; food safety training
CAPCN	Feasibility study on agro-ecotourism; circular business plan development
Classic Farm	Training on efficient water use for tilapia farming; black soldier fly farming for fish feed; compost production training
Domestica	Training on hydroponic fodder production as animal feed; black soldier fly farming for poultry feed
Elim Plus Farm	Circularity assessment; training on circular business models, post-harvest planning, water management, and integrated pest management; CE strategy development
Gisuma Coffee Cooperative	Training on circular food systems and business models; vermicomposting feasibility; wastewater management and regenerative agriculture training; financial literacy support
Glory Poultry Farm	Training on regenerative agriculture practices; compost making; study tours on regenerative agriculture and pig farming
Golden Insect	Circular business model and strategy development; value chain analysis; financial management support
Holy Agriculture	Training on water efficiency, post-harvest management, integrated pest management, and 18-day compost; business model development; CE strategy
INEZA Mushrooms	Training on mushroom compost production; certification guidelines support
Kigasali Coffee Company	Circular food system roadmap; training on circular business models; market assessment and feasibility study on pellet production; pellet production training
MNB	Food processing training and product valorisation; CE recipe and product development; market assessment for CE food products; food safety training

Next Farm	Training on regenerative agricultural practices; sausage making and certification guidelines; compost making
Njordfrey	Design of an IoT monitoring system for aquaponic efficiency; biodegradable packaging research and development
Rwanda Biosolutions	Training on improving compost quality; market strategy development
Souk	Feasibility study on avocado oil processing; crop waste management strategy; outgrower integration framework; post-harvest management capacity building
Triumvirate	Operational assessment of fish processing with focus on wastewater management; circularity training for operational staff on food processing and water conservation
Virunga Biotech	Capacity building on regenerative agriculture and renewable energy technologies; business training and coaching; waste management report; CE strategy
TechAdopter	Business model definition and refinement; outreach strategy and customer retention planning; farmer familiarity assessment with digital platforms
ZEAN	Assessment of waste generation and management; practical training on new product development including animal feed and bakery products from banana by-products

2 Method

Survey

The impact assessment was conducted through a structured questionnaire administered to representatives of all 20 participating SMEs following the completion of their Technical Assistance. The questionnaire was developed by ACEN, reviewed by CIRF project partners, and administered through individual discussions between an ACEN representative and each SME's CEO or Managing Director, supported by the SME's designated TA contact person. Of the 20 SMEs approached, 19 completed the survey.

In addition to SME feedback, a parallel survey was administered to all Technical Assistance Providers (TAPs) who supported the SMEs throughout the programme. All TAPs completed the survey. TAP feedback is presented in Section 4.

Circularity Assessment Tool (CAT)

To evaluate the impact of TA on each SME's circular economy journey, ACEN developed the Circularity Assessment Tool (CAT) as a structured framework used at two points in the programme: first, at baseline prior to TA delivery, to assess each SME's existing circular practices and inform the design of their tailored TA plan; and second, upon completion of TA, to measure progress and evaluate impact. An increase in score between the two assessments is considered a positive indicator of growth toward circular economy adoption.

The CAT assessed SMEs across seven parameters:

- **CE Leadership:** The extent to which a company allocates time and resources to integrate circularity into its business model and collaborates with relevant stakeholders across its value chain
- **Material Use:** How materials are sourced, selected, treated, and used within business operations
- **Repair & Reuse:** Whether products can be remanufactured, repaired, or returned within the production cycle
- **Material Recovery:** The degree to which materials and resources are recovered and reused, either internally or through third parties
- **Inputs & Processes:** Whether the company has strategies, processes, or facilities in place to reduce food loss, waste, and post-harvest losses
- **Services**: Whether the company offers services or memberships designed to optimize asset use rather than relying solely on product sales
- **Operations:** The repairability of company equipment, types of energy sources used, and ownership models for key assets

Of the 20 SMEs approached, 19 completed the CAT assessment at both baseline and completion.

3 Impact Assessment

This section presents the findings of the impact assessment across key impact areas, based on responses gathered through the SME and TAP questionnaires and discussions with SME representatives. Impact is analyzed across circular economy knowledge, adoption of CE practices, new product development, revenue generation, cost savings, employment, investment readiness, and community impact.

An important note on timing: this assessment was conducted at different stages of the programme for different SMEs. Some completed their TA over a year before this report was written, while others had only recently finished. As a result, impacts vary across SMEs and are expected to continue growing, particularly for those in the earlier stages of implementing their TA learnings.

3.1 Overall Circular Economy Progress

The Circularity Assessment Tool (CAT) provides the overarching measure of each SME's progress toward circular economy adoption. Across all 19 SMEs that completed the CAT, the total average score increased from **59% before TA to 80% after TA** — a 21 percentage point improvement representing meaningful, programme-wide progress.

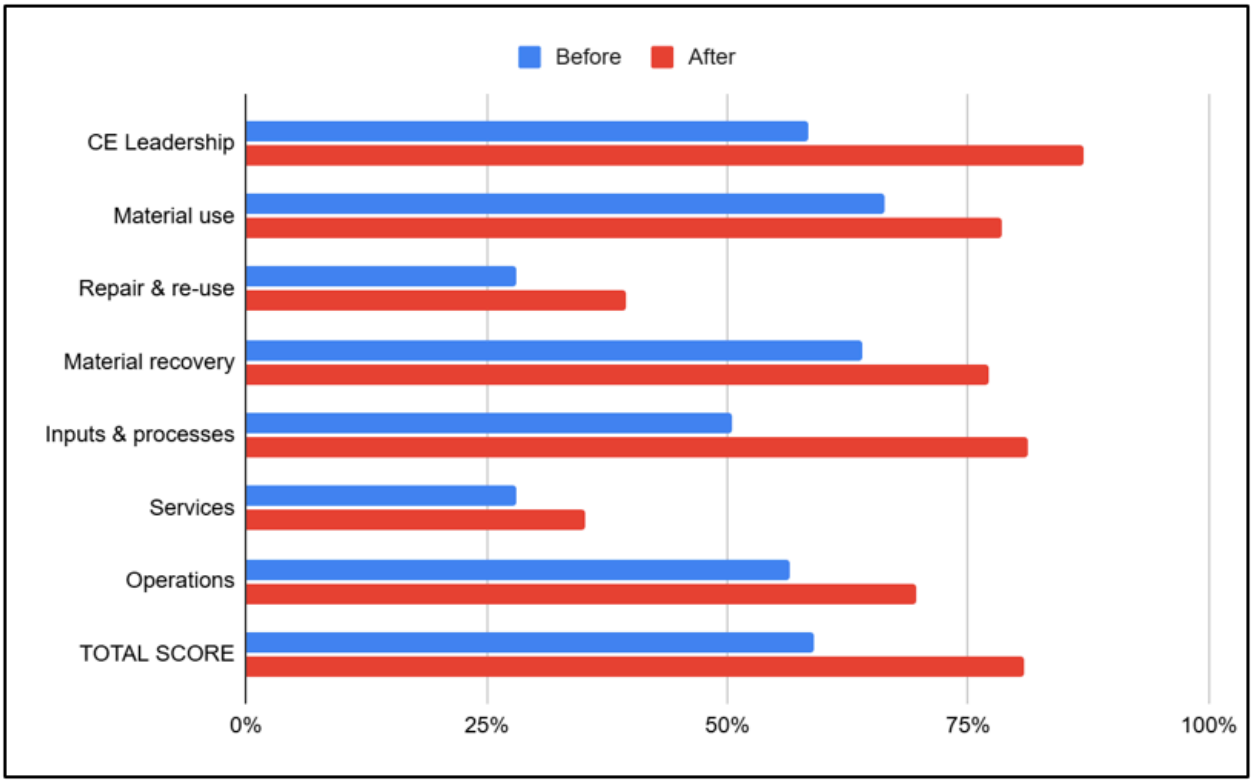
Positive growth was recorded across all seven CAT parameters (Table 2). The most significant gains were in **CE Leadership** (58% → 87%) and **Inputs & Processes** (51% → 81%). The CE Leadership gain reflects that participating SMEs are increasingly allocating time and resources to integrating circularity — a foundational shift in business orientation. The Inputs & Processes gain reflects the programme's success in building awareness around food loss and waste reduction and helping SMEs put practical systems in place.

The parameters **Repair & Reuse** and **Services** showed the smallest gains, consistent with the programme's focus on product-based circular economy entry points. These areas represent opportunities for deeper engagement in future phases.

Table 2. CAT scores for each parameter before and after completing TA.

Parameter	Before TA	After TA
CE Leadership	58%	87%
Material Use	66%	79%
Repair & Reuse	28%	39%

Material Recovery	64%	77%
Inputs & Processes	51%	81%
Services	28%	35%
Operations	56%	70%
Total Score	**59%**	**80%**

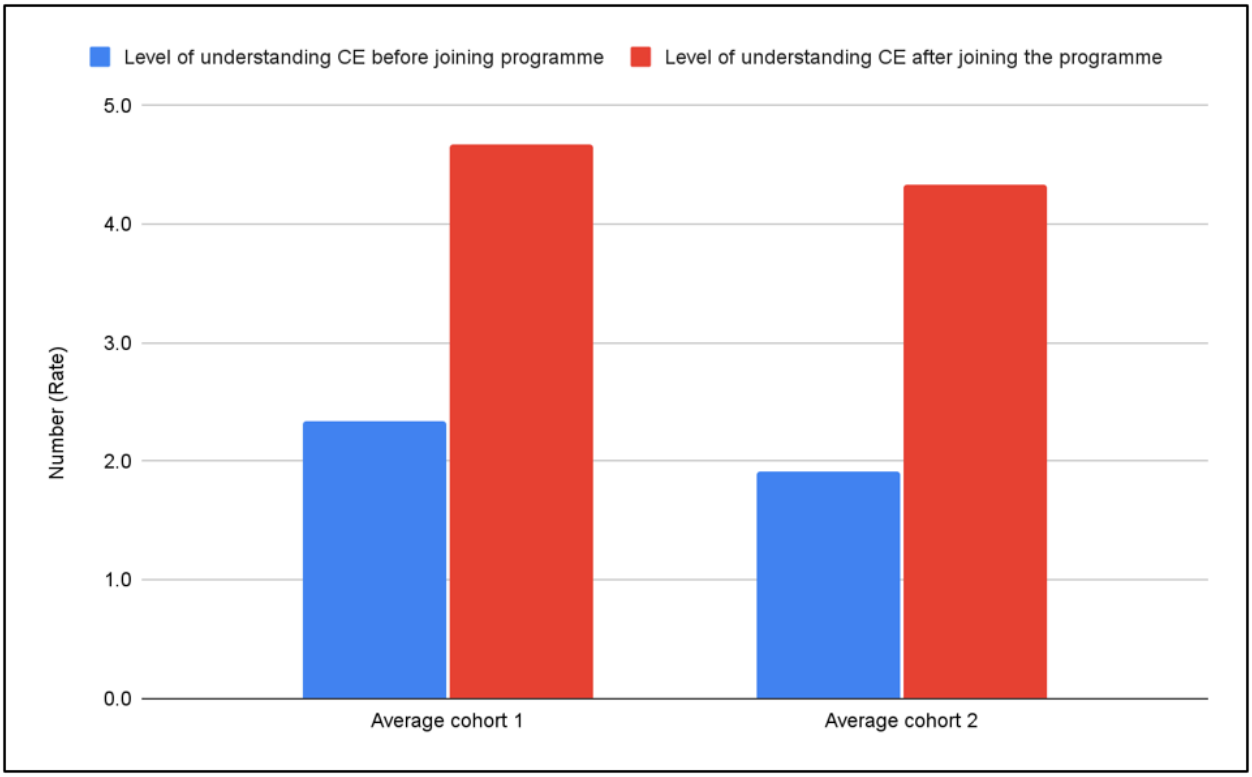


3.2 Circular Economy Knowledge

The level of CE knowledge among participating SMEs increased significantly across both cohorts. SMEs self-rated their understanding on a scale of 1 (never heard of CE) to 5 (very knowledgeable). For Cohort 1, the average score increased from 2.3 to 4.7. For Cohort 2, the average increased from 1.9 to 4.3. Table 3 shows the distribution of knowledge levels before and after TA.

Table 3. Number of SMEs at each level of CE knowledge before and after completing TA.

	Very Knowledgeable	Knowledgeable	Somewhat Knowledgeable	Not Familiar	Never Heard of It
Cohort 1 (Before)	0	0	3	2	1
Cohort 1 (After)	4	2	0	0	0
Cohort 2 (Before)	0	0	1	9	3
Cohort 2 (After)	5	7	1	0	0



Before joining the programme, the majority of SMEs across both cohorts had little or no familiarity with the circular economy. After completing TA, all SMEs in Cohort 1 and 12 of 13 SMEs in Cohort 2 rated themselves as knowledgeable or very knowledgeable. Several SMEs progressed from never having heard of the circular economy to rating themselves as very

knowledgeable — a transformation that reflects both the depth of the TA engagement and the relevance of the programme content to each SME's operations.

Knowledge gains were observed across all CE practice areas, including regenerative agriculture, water efficiency, efficient use of inputs, waste and by-product management, CE business model development, and designing products for recyclability and reuse. The most significant increases were in CE product development — rising from an average of 2.0 to 4.7 in Cohort 1 and from 1.9 to 4.2 in Cohort 2 — and CE business development, which increased from 2.5 to 4.5 in Cohort 1 and from 1.7 to 3.9 in Cohort 2.

3.3 New Circular Products and Services

A total of **21 new circular products and services** were introduced across 11 SMEs as a direct result of TA. These represent new offerings that did not exist before the SMEs joined CIRF, not improvements to existing products, though several of those occurred as well. Table 4 provides an overview of the new products introduced by each SME.

*Table 4. New circular products and services introduced as a result of TA. Products marked with * are still in the prototype stage.*

SME	New Products / Services Introduced
Domestica	Compost
Glory Poultry Farm	Compost
Kigasali Coffee Company	Pellets made from coffee husks; cooking stoves
Africa Food Supply	Juice from pineapple peels*; sweet potato bread from sweet potato peels*; cookies*
INEZA Mushrooms	Vermicompost; vermi-liquid
ZEAN	Banana bread; banana doughnuts and cookies; animal feed from banana peels for poultry
Gisuma Coffee Cooperative	Vermicompost*; vermi-liquid*
TechAdopter	Rental services for farming equipment
MNB	Mushroom soup; mushroom sambusa; mushroom oil

Elim Plus	Compost
Triumvirate	Poultry feed; pig feed

The range of new products reflects the diversity of circular entry points across the SME portfolio, from organic fertilizers and animal feeds derived from agricultural by-products, to value-added food products made from materials previously considered waste. Food and agricultural processing companies demonstrated particular potential for circular product innovation, with multiple SMEs developing new food products from fruit and vegetable peels, coffee husks, banana by-products, and mushroom processing residues.



Kigasali Coffee Company produced coffee pellets made from coffee husks and cooking stoves as a new product for the company as a result of TA.



MNB produced new products such as mushroom soup, mushroom sambusa, mushrooms in oil as a result of TA.

3.4 Revenue

Ten SMEs reported new revenue streams from circular products and services introduced through TA. Table 5 provides an overview of estimated monthly revenues reported at the time of assessment, with SMEs anonymized to protect privacy. It is important to note that most SMEs were still in the early phase of production at the time of reporting, and revenues are expected to grow as production scales and markets develop.

Table 5. Estimated revenue from new circular products and services per SME. All figures converted to USD.

SME	Estimated Revenue per Month (USD)	Notes
Company 1	~6,912	From circular production including compost sales

Company 2	~834	From cooking stoves and pellets; still in pilot phase
Company 3	~691	High demand reported for improved compost
Company 4	~346 (April) → ~6,480 (September)	Significant revenue growth over a five-month period
Company 5	~346–691	Juice, bread, and cookies from by-products
Company 6	~256	Fish bones valorized into poultry feed; wastewater into pig feed
Company 7	~125	Multiple streams from compost, worms, and training
Company 8	~124	From mushroom soup and sambusa
Company 9	~18	Recently completed TA; early stage of production
Company 10	—	Still in piloting phase; no revenue reported yet

The variation in revenues across SMEs reflects both the stage of production and the time elapsed since completing TA. Company 4's trajectory from approximately $346 per month in April to $6,480 in September illustrates how impact can grow substantially over time as production and market access develop.

3.5 Cost Savings

Nine SMEs reported operational cost savings as a result of adopting circular practices through TA. Savings were achieved primarily through reduced reliance on purchased inputs including chemical fertilizers, firewood, and animal feed, by substituting these with on-farm circular alternatives such as compost, crop residues, and by-product-derived feeds. Table 6 provides an overview of reported savings.

Table 6. Reported cost savings per SME as a result of TA.

SME	Nature of Savings	Estimated Savings (USD/month)
MNB	Reduced firewood, water heating, and fertiliser costs; full replacement of chemical fertilisers and pesticides	~204
Glory Poultry Farm	Labour savings from cover crops; crop residues replacing purchased animal feed	~183
CAPCN	Own compost production replacing purchased manure	~46
INEZA Mushrooms	Valorisation of wasted mushroom tubes into compost instead of disposal	~41.50
Triumvirate	Reduced energy costs through equipment optimization	~11
Holy Agriculture	Reduced mineral fertiliser use through organic fertiliser adoption	Not yet quantified
Kigasali Coffee Company	Firewood replaced by pellets for coffee drying	Not yet quantified
Africa Food Supply	Reduced water consumption (~10% less per month)	Not yet quantified
ZEAN	Recycled cooking oil sold to third parties for soap production	Not yet quantified

One SME projected potential future savings of approximately $1,500 per month through the production of organic fertilisers as an on-farm input, replacing current expenditure on both organic and mineral fertilisers. This illustrates the longer-term cost reduction potential of circular economy adoption beyond what was measurable at the time of this assessment.

3.6 Employment

Eleven SMEs hired new staff as a direct result of TA-supported activities, creating a total of **73 new positions** across the portfolio. Table 7 provides an overview of new hires by company.

Table 7. New employees hired as a result of TA.

SME	Number of Newly Hired Staff
Glory Poultry Farm	40
Kigasali Coffee Company	7
Holy Agriculture	5
INEZA Mushrooms	4
SOUK	4
ZEAN	4
Next Farm	3
MNB	2
Elim Plus	2
Triumvirate	1
TechAdopter	1
Total	**73**

3.7 Investment Readiness

After completing TA, SMEs were asked whether their outlook on investment readiness had changed since joining the programme, rated on a scale of 1 (significantly more negative) to 5 (significantly more positive). Seventeen of 19 SMEs reported a positive change, with five indicating a significantly more positive outlook. Two SMEs reported no change, citing the need for additional steps before they feel ready to pursue external financing.

The overall positive shift in investment readiness reflects the confidence-building effect of TA, particularly through business model clarification, circular product development, and market assessment activities that help SMEs articulate their value proposition to potential investors. However, SMEs consistently noted that improved readiness does not resolve the underlying barrier: access to affordable finance remains the most critical constraint to scaling what they have learned.

3.8 Community Impact

Beyond business-level outcomes, 74% of SMEs reported that the impact of TA extended into their surrounding communities. Spillover effects included knowledge and skills shared through community training sessions, farmers and neighbours adopting circular practices modelled by programme participants, and SMEs being contracted to train youth and community members in circular food production techniques. In several cases, local government authorities expressed interest in replicating practices demonstrated by CIRF-supported SMEs in their districts.

This community dimension underscores the broader systems-change potential of the CIRF model where individual SME transformation serves as a demonstration effect, inspiring adoption of circular practices at the community level.



The owner of Glory Poultry Farm with the workers of the community on the farm.

4 SME and TAP Feedback on Technical Assistance

4.1 SME Satisfaction and Most Impactful Support

Overall satisfaction with the TA received was high. Of the 19 SMEs that completed the survey, 9 indicated they were very satisfied with the support received from their TAP, 5 were satisfied, and 2 were somewhat satisfied. The remaining 2 SMEs expressed lower levels of satisfaction.

SMEs most consistently valued support that was practical, hands-on, and directly applicable to their operations. The most frequently cited impactful areas included:

- **Circular product development**: including training on new products, recipe development, and market assessments that helped SMEs identify and launch new revenue streams from previously wasted materials
- **Business model and strategy development**: helping SMEs clarify their circular economy positioning, define their value proposition, and improve operational planning
- **On-site technical training**: particularly for new technologies such as vermicomposting, regenerative agriculture practices, compost making, and wastewater management, where in-person demonstration was essential
- **Market linkages and connections**: facilitating introductions to buyers, suppliers, equipment providers, and certification bodies that SMEs could not easily access independently
- **Feasibility studies and research**: providing SMEs with structured analysis of new circular opportunities, including agro-ecotourism, new product lines, and outgrower integration, that gave them the evidence base needed for business planning and grant applications

4.2 Areas for Improvement – SME Feedback

Despite high overall satisfaction, SMEs identified several areas where the TA could be strengthened:

- **More time for coaching and implementation**: SMEs consistently requested longer engagement periods and more sustained follow-up between sessions, particularly when adopting new technologies that require iterative learning
- **Greater physical presence**: more in-person, on-site support was preferred over remote or workshop-based delivery

- **Better alignment with company-specific needs**: some SMEs felt that TA could have been more closely tailored to the scale, resources, and specific context of their business
- **Improved scheduling and continuity**: gaps between training sessions and follow-ups limited momentum in some cases
- **Access to finance and equipment**: while acknowledged as beyond the scope of the TAPs themselves, the inability to invest in infrastructure to implement TA learnings was the most commonly cited barrier to achieving the full potential of the support received

4.3 TAP Feedback

All TAPs reported satisfaction with the TAP selection process and with how they were engaged throughout the CIRF programme. TAPs also reported high satisfaction with the support received from the ACEN team throughout implementation.

TAPs described the following areas of impact observed in the SMEs they supported:

- SMEs gained knowledge and skills to optimize their operations by reducing waste and developing new circular products, creating new revenue streams and employment opportunities
- The CIRF programme functioned as a tool for mindset change, building awareness of circular economy principles and exposing SMEs to new ideas, solutions, and strategies they would not otherwise have encountered
- TA helped SMEs identify inefficiencies in their operations and explore new revenue streams through value addition and resource optimization
- Several SMEs developed new capabilities in vermicomposting and regenerative agriculture practices, which also benefit the farmer cooperatives and communities they work with

TAPs suggested the following areas for improvement in future programming:

- **Increase time on-site with SMEs**: more sustained engagement would allow TAPs to provide deeper, more practical support and better monitor implementation
- **Facilitate peer learning among SMEs**: creating structured opportunities for participating SMEs to share experiences and learn from each other would extend the programme's reach and reinforce learnings

- **Extend the model to other countries**: TAPs affirmed that the CIRF approach could be effectively replicated in other East African countries such as Uganda, Tanzania, and Malawi

5 Lessons Learned and Conclusion

The CIRF Technical Assistance programme has demonstrated a clear and positive impact on 20 SMEs operating within Rwanda's agri-food sector. Across both cohorts, SMEs significantly increased their circular economy knowledge, adopted new circular practices, developed 21 new CE products, created 73 jobs, reduced operational costs, and generated new revenue streams. Seventy-four percent reported spillover effects into surrounding communities, and 17 of 19 SMEs reported a more positive outlook on investment readiness. These outcomes confirm that a well-designed, tailored TA programme grounded in genuine needs assessment and delivered by specialized practitioners can meaningfully accelerate circular economy adoption among agri-food SMEs.

At the same time, the assessment surfaces important lessons about what it takes to translate TA into lasting business transformation, and where the programme model can be strengthened.

Programme Design Lessons

Access to finance must accompany TA. The most consistently cited barrier across both SMEs and TAPs was the inability to invest in the equipment and infrastructure needed to implement TA learnings at scale. Technical assistance builds knowledge and capability, but without parallel access to capital, many SMEs are unable to fully act on what they have learned. Finance and TA must be designed and delivered together.

Business development support is needed from the start. Gaps in financial literacy, record-keeping, and basic operational management limited some SMEs' ability to fully benefit from TA. Introducing structured business development support from the beginning of the programme, rather than as a later add-on, would strengthen SME readiness to absorb and implement more advanced circular economy interventions.

Clustering SMEs in economic zones amplifies impact. Targeting SMEs located in the same geographic or value chain cluster makes monitoring more manageable, strengthens peer learning between businesses, and enables deeper engagement with local government authorities. It also allows the programme to trace its impact further along the value chain, including into the farmer communities that many SMEs work with directly.

The CIRF model is replicable across African contexts. The programme's approach of combining structured needs assessment, tailored TA delivery, and systematic impact evaluation is

adaptable and can be applied to circular food system programmes in other African countries. Both TAPs and SMEs affirmed this potential.

SME Implementation Lessons

Hands-on, in-person engagement drives the deepest impact. SMEs benefited most from TA that was delivered on-site, with sustained follow-up and practical demonstration. New technologies and practices require iterative, physical engagement to embed effectively. Longer engagement periods and more frequent on-site presence by TAPs would deepen outcomes.

Circular product development is the highest-value entry point. The introduction of new circular products was among the most appreciated and impactful dimensions of the programme, generating new revenue streams, employment opportunities, and business confidence. Food and agricultural processing companies demonstrated particular potential, and this niche deserves prioritization in future programming.

One consistent company contact person is essential. In some cases, changes in the SME contact person disrupted continuity and momentum. Ensuring that a single, consistent representative is designated and committed from the outset, with the managing director kept informed throughout, is a simple but important operational requirement.

Remaining Needs

While the programme has generated significant impact, several structural challenges persist as CIRF moves toward completion. Access to affordable finance remains the most universally cited barrier to scaling TA learnings. Product certification continues to be out of reach for many SMEs despite its importance for accessing premium buyers, export markets, and public procurement. The full potential of several recently completed TA engagements has yet to be realized, with impacts expected to grow as SMEs continue implementing their learnings beyond the programme period.

Addressing these remaining needs will require continued coordination between CIRF partners, financial institutions, certification bodies, and government stakeholders. The foundations laid through this programme in SME capability, circular product development, and market linkages, provide a strong base from which these challenges can be tackled.