

OPPORTUNITIES FOR TRANSITIONING TO CIRCULAR FOOD SYSTEMS IN ZIMBABWE

BACKGROUND

Zimbabwe's food system faces critical challenges, with approximately 60% of the population experiencing food insecurity (FAO, 2021). Climate change has exacerbated recurrent droughts, erratic rainfall, and declining agricultural productivity, leading to widespread crop failures. Inefficient food value chains, result in significant losses, with up to 30% of fruits and vegetables wasted before reaching consumers (World Bank, 2022). Furthermore, unsustainable agricultural practices, including monocropping and excessive chemical fertilizer use, have degraded soils, diminished crop yields and negatively affected environmental health (Chiduza, 2021). Water scarcity, particularly in rural areas, constrains agricultural productivity, with changing precipitation patterns and frequent droughts intensifying these challenges (UNDP, 2020). Despite these obstacles, Zimbabwe can transform its food systems by adopting Circular Food Systems (CFS) principles.

KEY MESSAGES



Integrate GYSI into Circular Food Systems:

Ensure gender, youth, and social inclusion (GYSI) is central to CFS initiatives by providing targeted financial and technical support for women- and youth-led MSMEs, alongside capacity-building programs that enhance their participation in value chains and policy dialogues.



Support MSMEs in Circular Innovation:

Create financing facilities and mentorship programs to enable MSMEs to adopt circular models such as waste-to-value enterprises and renewable energy technologies. These enterprises are critical to enhancing resource efficiency and driving local economic growth.



Strengthen Climate-Resilient Infrastructure:

Invest in renewable energy-powered post-harvest storage and processing facilities to reduce food loss, alongside irrigation systems designed to improve water use efficiency and resilience to climate change.



Promote Cross-Sectoral Coordination:

Develop multi-stakeholder platforms that bring together agriculture, waste management, and food production sectors to align strategies, reduce inefficiencies, and create integrated waste-to-resource systems.

This policy brief highlights opportunities for transitioning to Circular Food Systems (CFS) in Zimbabwe. Insights are drawn from the Circular Food Systems in Africa project,

which is testing how Micro Small to Medium Enterprises (SMMEs) and inclusive value chains can reduce post-harvest losses and enhance rural livelihoods in pilot localities. The project is being implemented by the Australian National University (ANU), Ardhi University, the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), University of Eduardo Mondlane (UEM) and the National Institute of Irrigation in Mozambique. The project employs agricultural innovation platforms to foster a shared understanding of circularity fundamentals, including creating local jobs, particularly for women and underserved groups, through localized value addition. The project facilitates the co-design of MSMEs and the development of inclusive value chains, promoting sustainable economic opportunities and reducing urban migration by creating employment in rural areas (Velasco-Muñoz et al., 2021).

CIRCULAR FOOD SYSTEMS – THE CONCEPT

The global food system faces an immense challenge: producing enough food to sustain nearly 10 billion people within the earth's ecological limits. With limited land and water resources, agriculture must adapt to climate change, reduce greenhouse gas emissions, and lift millions out of poverty. Sustainable Intensification (SI) offers one potential pathway, aiming to increase food production without further depleting natural resources (Pretty, 2018).

Building on SI and inspired by circular economy principles, the concept of CFS has garnered interest from global research, philanthropic, and policy communities (Velasco-Muñoz et al., 2021). CFS focuses on improving agricultural productivity by reducing reliance on synthetic inputs, localizing food processing to reduce food miles, and recycling agricultural by-products for use as inputs for local agro enterprises. This approach emphasizes integrating crop and livestock systems to foster sustainable, efficient, and resilient food production cycles (van Rooyen et al., 2024).

CFS seeks to decouple natural resource use from increased food production, thus improving resilience to climate impacts while contributing to climate mitigation through resource efficiency, local processing, and soil carbon sequestration. In essence, CFS aims to enhance socio-economic benefits, particularly for women and youth, by creating more diverse livelihood opportunities and ensuring access to nutritious food through efficient resource management and enhanced nutrient, water, and energy cycles (Matshe, 2022).

Circular Food System Practices and Initiatives in Zimbabwe

CFS in Zimbabwe encompass sustainable practices in food production, distribution, consumption, and waste management that seek to reduce environmental impact and increase resource efficiency. Zimbabwe's food system faces numerous challenges, including climate change, land degradation, water scarcity, and limited access to markets and technology (World Bank, 2022). To address these issues, the circular approach offers a holistic solution, promoting food security, economic development, and environmental sustainability.

Below are some key components and initiatives related to CFS in Zimbabwe:

Practice/Initiative	Description and Circularity Elements	Impact
Agroecology	A holistic approach integrating ecological principles into farming systems, emphasizing biodiversity, soil health, and sustainable livelihoods. Practices include intercropping, agroforestry, and organic pest management.	Enhances resilience to climate change, improves food security, and supports sustainable livelihoods. For example, the RAIZ project in Mutoko and Murewa districts trains farmers in agroecological practices to boost productivity and resilience.
Conservation Agriculture	Farming practices that minimize soil disturbance, maintain soil cover, and diversify crop rotations to improve soil health and water retention.	Increases crop yields, reduces soil erosion, and enhances resilience to climate variability. An estimated 300,000 Zimbabwean farmers have adopted conservation agriculture, supported by government and FAO initiatives.
Peri-Urban Farming	FarminCultivation of crops and rearing of livestock in urban and peri-urban areas to provide fresh produce, reduce food miles, and create employment.	Improves urban food security, generates income, and utilizes organic waste for composting. Initiatives in cities like Harare promote urban agriculture to enhance food access and livelihoods.
Food Waste Reduction	Strategies to minimize food loss during production, post-harvest handling, and distribution through improved storage, processing, and transportation.	Enhances food security, reduces environmental impact, and improves economic returns for farmers. Programs focusing on better storage facilities and training have been implemented to reduce post-harvest losses.
Market Linkages	Strengthening connections between smallholder farmers and markets through cooperatives, contract farming, and value chain development.	Provides fair prices, reduces post-harvest losses, and improves access to inputs and services. Organizations like PELUM Zimbabwe support farmers in accessing markets and improving livelihoods.

The CFS practices and initiatives discussed above demonstrate the potential for transformative change in Zimbabwe's food system. By leveraging the synergies between sustainable agriculture, reduced food waste, and enhanced market access, Zimbabwe can unlock new opportunities for economic growth, social development, and environmental sustainability. To realize this vision, it is crucial to foster collaboration among stakeholders, promote policy coherence, and invest in capacity-building programs that support the widespread adoption of Circular Food System practices.

OPPORTUNITIES TO ADVANCE THE CIRCULAR FOOD SYSTEMS AGENDA

Zimbabwe is advancing the Circular Food Systems (CFS) agenda through policies and initiatives aimed at achieving sustainable, resilient, and equitable food systems aligned with the SDGs. Frameworks like the National Development Strategy 1 (NDS1), National Agriculture Policy Framework (NAPF), and Agriculture and Food Systems Transformation Strategy (AFSTS) emphasize sustainable supply chains, agroecological practices, and resource repurposing. For example, the Silalatshani Irrigation Scheme demonstrates integrated CFS principles, where aquaculture, irrigated crops, livestock, and composting form a closed-loop system that enhances resource efficiency and reduces synthetic input reliance. These efforts collectively position Zimbabwe to foster a climate-smart, circular food system.

The following frameworks and strategies highlight opportunities to advance CFS principles in Zimbabwe:

The **National Development Strategy 1 (NDS1)** (2021-2025) emphasizes inclusive growth, supporting sustainable supply chains and promoting smallholder farmers engaged in agroecological practices (MEFD, 2020). Businesses can stimulate demand for sustainably produced foods by incentivizing sustainable land management and adjusting retail models.. Increased consumer demand for organic and traditional foods can further advance CFS, as consumer preferences increasingly align with sustainability and traditional crop varieties (MEFD, 2020). Additionally, businesses can redesign their supply chains to reduce waste, increase efficiency, and promote the use of recycled materials. By circularizing their operations, businesses can not only reduce their environmental footprint but also create new revenue streams, improve brand reputation, and contribute to a more sustainable food system in Zimbabwe.

The **National Agriculture Policy Framework (NAPF)** (2018–2030) highlights the critical role of private sector engagement in building resilient, sustainable supply chains, generating sustainable jobs, and reducing negative social and environmental impacts (MLARR, 2018). Technical assistance and financial guarantee schemes can encourage private sector investment in CFS by reducing risks and providing resources needed to adopt sustainable practices across the food value chain. Additionally, NAPF's multi-stakeholder collaboration pillars create a platform

for policy dialogue and engagement, supporting knowledge exchange, fostering innovation, and advocating for the mainstreaming of CFS concepts in policy reform and development programming (MLARR, 2018).

The **Agriculture and Food Systems Transformation Strategy (AFSTS)** provides a comprehensive framework for integrating CFS across agricultural development efforts in Zimbabwe (MLARR, 2020). AFSTS promotes regenerative agricultural practices, reduces food waste, and supports resource repurposing, such as converting food waste into compost and organic fertilizers. For example, recycling organic waste into compost improves soil fertility, boosts productivity, and reduces greenhouse gas emissions. AFSTS also promotes renewable energy-powered cold storage solutions for post-harvest loss reduction. Solar-powered cold chains reduce dependence on fossil fuels, minimize emissions, and decrease food loss, supporting Zimbabwe's transition to a low-carbon, resilient food system (MLARR, 2020).

The **Livestock Growth Plan** aligns closely with CFS principles by promoting the production and use of legume-based fodder for livestock. Legumes are nitrogen-fixing plants, which means they naturally enrich the soil by converting atmospheric nitrogen into a form usable by plants. This

process not only improves soil health but also reduces the need for synthetic nitrogen fertilizers, which can have harmful environmental impacts. By incorporating legumes into livestock feed, the plan fosters a more sustainable approach to livestock farming, as legumes enhance soil fertility, support biodiversity, and contribute to healthier, more resilient ecosystems (MLARR, 2020).

Other strategies and policies contributing to CFS include the Food and Nutrition Policy, the Multisectoral National Food and Nutrition Strategy, the Zimbabwe Livelihoods Strategy, the Horticulture Recovery Plan, and the Livestock Recovery Plan. These frameworks collectively support Zimbabwe's journey toward a circular and resilient food system. The Food and Nutrition Council, under the Office of the President, is responsible for the coordination, analysis, and promotion of a cohesive national response by multiple sectors and stakeholders to food and nutrition insecurity in Zimbabwe, with Food and Nutrition Security Committees at provincial, district, and ward levels, with representatives from the agriculture and health ministries. By leveraging these opportunities, Zimbabwe can accelerate the adoption of CFS, fostering a resilient, climate-smart, and sustainable food system that aligns with national and international goals for food security and environmental conservation.





POLICY RECOMMENDATIONS

To align with the opportunities identified for advancing Circular Food Systems (CFS) in Zimbabwe, the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD), in collaboration with the Ministries of Environment, Climate Change, and Local Government, should drive the development of a Circular Food Systems Action Agenda. This agenda should establish clear priorities, measurable targets, and a coordinated framework for stakeholders to adopt and implement CFS principles, emphasizing regenerative agriculture, waste minimization, and efficient resource use.

The following recommendations support these objectives:

- 1. Align Policies with Circularity Principles:** Integrate circular principles into existing policies, such as the National Agriculture Policy Framework (NAPF) and the Agriculture and Food Systems Transformation Strategy (AFSTS). These policies should incentivize circular business models, promote sustainable supply chains, and facilitate innovation in waste-to-value practices, ensuring broad stakeholder engagement.
- 2. Strengthen Sectoral Linkages:** Facilitate cross-sector collaboration among agriculture, food production, and waste management to improve backward and forward linkages along the food value chain. Establish platforms for stakeholder coordination to reduce inefficiencies, promote resource recovery, and foster integration of waste-to-resource systems.
- 3. Empower Women and Youth in MSMEs:** Establish targeted financial and technical support programs to enable women- and youth-led MSMEs to adopt circular models. Provide capacity-building initiatives,

mentorship, and access to innovation funding for enterprises engaging in composting, agro-processing, and renewable energy-based solutions.

- 4. Enhance Infrastructure Investment:** Prioritize funding for renewable energy-powered post-harvest infrastructure, including cold chains, processing facilities, and storage. Strengthen irrigation infrastructure to improve water-use efficiency, agricultural productivity, and resilience to climate change.

These recommendations align with Zimbabwe's national frameworks and international commitments, offering a pathway to a resilient and circular food system that promotes sustainability, supports livelihoods, and contributes to achieving the Sustainable Development Goals (SDGs).

CONCLUSION

Zimbabwe is at a critical juncture in transforming its food system to address the interlinked challenges of food insecurity, climate change, and environmental degradation. Embracing CFS principles offers a powerful solution to the interconnected challenges. By integrating sustainable agricultural practices, improving market linkages, and reducing food waste, Zimbabwe can not only enhance food security but also build a resilient and climate-smart economy. The policy recommendations outlined in this brief provide a roadmap for achieving this vision. By promoting circular business models, strengthening linkages across sectors, supporting small-scale farmers, and investing in sustainable infrastructure, Zimbabwe can unlock new economic opportunities while safeguarding its natural resources. Through collaboration and strategic policy action, Zimbabwe has the potential to lead the way in sustainable food systems in Africa, fostering an inclusive and resilient food future for all.

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About FANRPAN

The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) is an autonomous, multistakeholder policy network with a mandate to coordinate agriculture policy research, analysis and dialogue, promote the dissemination of policyrelevant research results across Africa, and act as a platform for dialogue of all food systems stakeholders. FANRPAN was established in 1997 in response to a call by Ministers of Agriculture from Eastern and Southern Africa (ESA) for the formation of a regional agricultural policy analysis and research network to enhance indigenous capacity for policy formulation and analysis and to reduce dependence on foreign experts when countries develop comprehensive agricultural policies and food security strategies (COMESA Gazette, 1994, volume 201, number 1, clause 23). FANRPAN is mandated to work in all African countries and currently has activities in 17 countries, namely Angola, Benin, Botswana, Democratic Republic of Congo, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

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