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Enabling circular economy transition in Kenya's food processing industry: Insights from the Circular Retrofitting for Sustainable Industrialisation (Geckocir) project

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KEY MESSAGES

- Only about 10% of waste generated in Kenya is formally recycled, highlighting significant untapped opportunities for circular production systems.
- Kenya has established a strong policy foundation for circular economy transition, but implementation gaps continue to limit impact.
- Environmental policies can accelerate circular production in the food processing sector, but they must function as enablers of innovation and investment rather than primarily as compliance instruments.

1. BACKGROUND AND CONTEXT

Kenya is increasingly recognised as one of Africa's frontrunners in advancing circular economy models, supported by a relatively robust and progressive policy framework (European Commission et al., 2020). Since the enactment of the Environmental Management and Coordination Act (EMCA) in 1999, the country has introduced several policies and strategies that signal a shift from a linear 'take-make-dispose' model towards more circular economy-oriented systems that prioritise waste prevention, reuse, recycling, recovery, and resource valorisation (Muriithi & Ngare, 2023).

This transition is particularly relevant for Kenya's food processing sector, which generates substantial quantities of organic waste while consuming significant amounts of water, energy, and raw materials. According to the Waste Management Policy (2021), Kenya generates more than 22,000 tonnes of waste daily, equivalent to approximately eight million tonnes annually, of which 60–70% is organic waste originating primarily from households, markets, agro-processing activities, and food industries. Despite its considerable valorisation potential, a significant proportion of this waste continues to be disposed of in dumpsites and landfills, with only about 10% being formally recycled (ANDE, 2025).

In response to these challenges, Kenya has intensified its policy efforts in recent years. Notably, the Sustainable Waste Management Act (2022) established a comprehensive framework that recognises waste as a resource and promotes the waste hierarchy of refuse, reduce, reuse, repair, recycle, recover, and dispose. While these developments have created important opportunities for advancing circular economy practices, they have also exposed several implementation challenges and policy gaps.

This research brief draws on key informant interviews with food processing companies operating in the mango, macadamia, coffee, and avocado value chains under the Circular Retrofitting for Sustainable Industrialisation (GeckoCir) project. The findings provide industry perspectives on the opportunities, barriers, and areas where policy and institutional support could be strengthened to accelerate the transition towards more resource-efficient and sustainable production systems.

2. Industry perspectives on environmental and circular economy-enabling policies

2.1 Enabling policy environment

Recent policy developments, particularly the Sustainable Waste Management Act (2022) and the Extended Producer Responsibility (EPR) Regulations, have marked an important shift in the expectations placed on food processing industries. Beyond conventional environmental compliance, companies are increasingly expected to view waste as a resource and integrate circular practices into their production systems. In particular, EPR has extended producer responsibility beyond factory operations to the post-consumer stage, encouraging processors to rethink how products, packaging, and waste streams are managed.

2.1.1 What have Kenya's key environmental policy shifts meant for food processing companies?

Over the past two decades Kenya has undergone a significant environmental policy shift, from managing pollution and waste disposal to promoting circular economy approaches that view waste as a resource. This evolution can be understood through three key phases, as outlined in Table 1.

Table 1: Key policy transitions and implications for food processors

Policy phase	Key policies	Focus area	Implications for food processing companies
Phase 1: Pollution Control and Compliance (1999–2014)	EMCA (1999); Waste Management Regulations (2006)	Environmental protection, pollution control, and regulatory compliance.	Compliance with environmental permits, audits, and waste management requirements.
Phase 2: Resource Efficiency and Waste Recovery (2015–2021)	National Sustainable Waste Management Strategy (2015); Waste Management Policy (2021); NCCAPs	Waste minimisation, recycling, resource recovery, and recognition of waste as a resource.	Increased focus on reducing waste and recovering value from organic waste streams.
Phase 3: Circular Economy and Producer Responsibility (2022–Present)	Sustainable Waste Management Act (2022); EPR Framework and Regulations (2022–2024)	Circular production, waste valorisation, industrial symbiosis, and producer responsibility.	Growing expectations to adopt circular practices, valorise organic waste, and comply with EPR requirements.

2.2 Opportunities created by the policy-driven shift towards circularity

- **Creation of industrial symbiosis networks:** Industry stakeholders acknowledged that recent policy developments have created a more favourable environment for industrial collaboration and the productive use of by-products. Several respondents highlighted the benefits of co-locating complementary industries within industrial parks and processing zones, particularly Export Processing Zones (EPZs), which were identified as enabling environments for inter-firm exchanges.

- **Emergence of new waste-based businesses and services:** The shift towards circularity has created opportunities for specialised waste collectors and resource recovery enterprises.
- **Increased resource efficiency and energy self-sufficiency:** Companies are finding ways to convert waste into energy and reuse it within their operations.
- **Additional revenue streams from by-products:** Materials previously considered waste are increasingly becoming marketable products.

2.3 Barriers to circular economy adoption

Finding 1: Policy and regulatory weaknesses continue to constrain circular economy transition

Although Kenya has established robust environmental and circular economy frameworks, several policy and regulatory weaknesses remain, including:

- Weak implementation of existing policies and regulations
- Fragmented coordination between regulators and county governments.
- Weak waste data collection and reporting systems.
- Policies and regulations that are not sufficiently sector-sensitive, particularly with respect to the characteristics and management of organic waste streams.
- Some regulatory requirements developed under earlier environmental frameworks, such as EMCA (1999), have not kept pace with emerging circular economy technologies and practices.

Implication: Collectively, these weaknesses have created confusion, unclear compliance processes and regulatory uncertainty, limited evidence-based waste management planning, and reduced the effectiveness of existing policies in supporting the transition towards circular production systems and the uptake of emerging circular technologies.

Finding 2: Industry participation in policy development is still limited

Industry stakeholders noted that engagement often occurs too late in the policymaking process and is not sufficiently extensive to effectively inform policy design.

Implication: This has resulted in regulations that are perceived as unrealistic, difficult to implement, and disconnected from the operational realities of food processing industries.

Finding 3: Existing regulatory approaches are often perceived as punitive rather than supportive

Food processing companies viewed the current regulatory framework as being primarily focused on compliance and enforcement, citing strict timelines, multiple licensing requirements, and high compliance costs.

Implication: This has increased the cost of compliance, diverting resources that could otherwise be invested in circular technologies and innovations.

Finding 4: Lack of incentives is slowing down circular economy investments

Although many companies are pursuing circular solutions, stakeholders reported that limited fiscal incentives and the high cost of green technologies constrain investment and scaling.

Implication: High taxes and import-related charges have made investments in circular technologies and innovations prohibitively expensive for many firms.

Finding 5: Access to green finance remains a major barrier

Despite growing opportunities for climate and green finance, many medium-sized food processors lack the information and technical capacity required to access these funds.

Implication: the pace of circular transition has been slowed, even among companies willing to invest in sustainability initiatives.

3. Recommendations**3.1 Strengthen policy implementation and adopt more supportive regulatory approaches**

Government agencies should prioritise the effective implementation of existing policies and strengthen coordination between national and county institutions. Regulators need to complement compliance and enforcement with technical guidance and realistic transition timelines that support industries adopting circular practices.

3.2 Institutionalise industry participation in policymaking

Government agencies should institutionalise structured and continuous engagement with food processing industries and other circular economy actors throughout policy formulation, review, and implementation to enhance policy relevance, strengthen ownership, and improve compliance.

3.3 Introduce fiscal incentives to accelerate circular economy investments

The Government of Kenya should introduce targeted fiscal incentives to encourage investment in circular economy solutions. Measures such as reduced import duties on green technologies, Value-Added Tax (VAT) exemptions for recycling equipment, tax holidays, and accelerated depreciation allowances would lower investment costs and encourage wider adoption of resource recovery and waste valorisation technologies.

3.4 Improve access to green finance and strengthen industry capacity

The government, financial institutions, development partners, and industry associations should work together by creating platforms that increase awareness of financing opportunities and providing technical support to help firms prepare bankable proposals and meet funding requirements. Strengthening these capacities would enable more companies to scale circular economy investments.

3.5 Develop sector-specific circular economy guidelines for food processing industries

Government should develop practical and sector-specific circular economy guidelines that reflect the characteristics of food processing industries and their organic waste streams. This would improve regulatory effectiveness while encouraging wider adoption of circular production systems.

4. Conclusion

Kenya has established a strong policy foundation for advancing the circular economy, but translating these ambitions into practice will require stronger implementation, more supportive regulatory approaches, and greater industry involvement. Creating an enabling environment through incentives, improved access to finance, and continuous engagement between government, regulators, and food processing industries can foster a win-win transition that promotes both environmental sustainability and industrial competitiveness. Strengthening these collaborative mechanisms will be critical to accelerating the adoption of circular economy practices across the food processing sector, while also stimulating innovation, unlocking new business opportunities, and enhancing long-term resilience and competitiveness. As the country pursues its Vision 2030 industrialisation agenda and broader climate commitments, the success of these efforts will depend not only on regulatory compliance but also on their ability to catalyse investment and support practical circular solutions.

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Food Processing Side Streams



Value-Added Products Developed from the Side Streams

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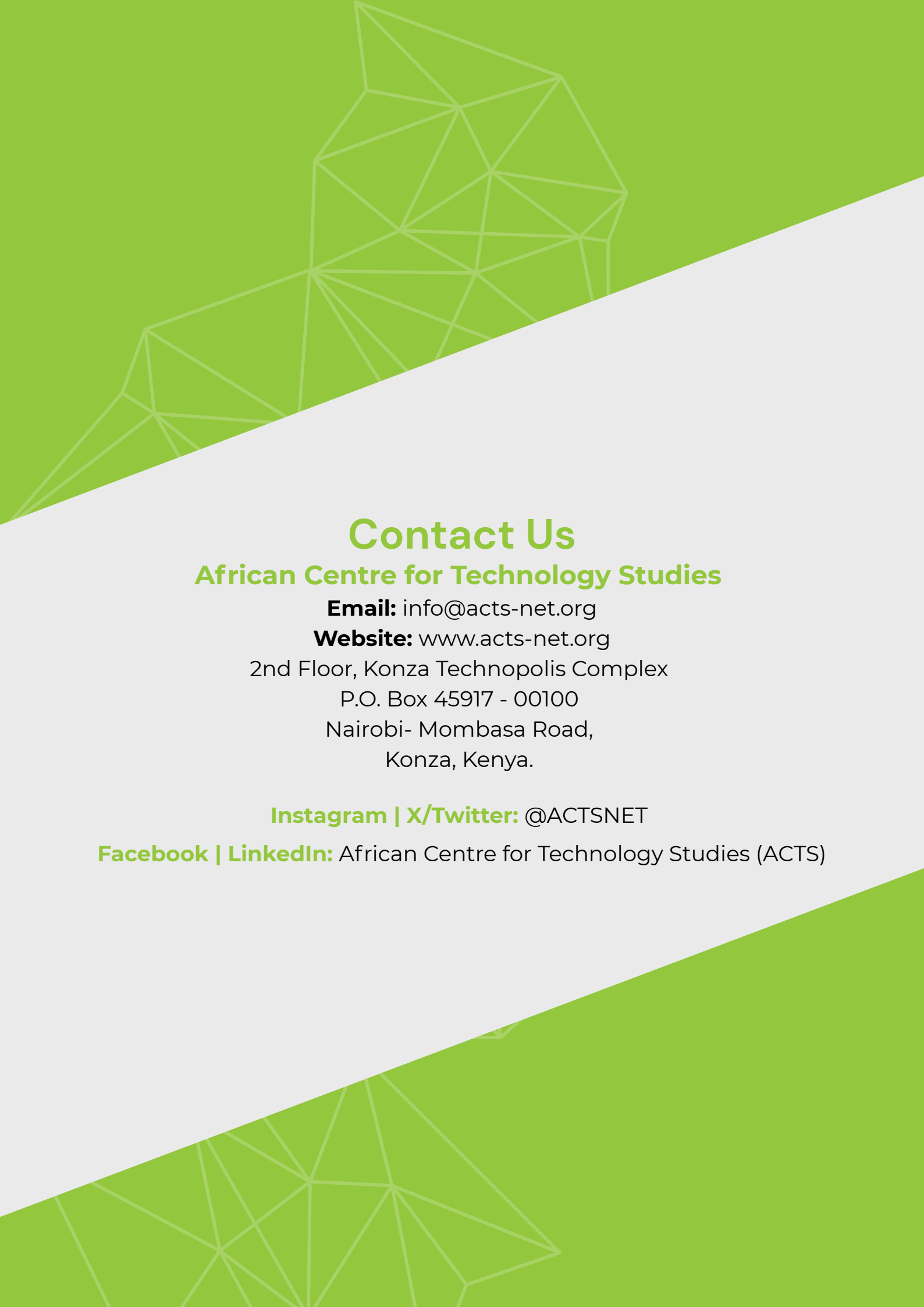
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