



Centre for Environment  
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# **SCALE UP AGROECOLOGY FOR SUSTAINABLE AND RESILIENT FOOD SYSTEMS IN KENYA**



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## Executive Summary

Kenya's agricultural sector faces unprecedented threats, including unsustainable agricultural practices, soil degradation, adverse effects of climate change and declining productivity due to extensive use of toxic agrochemicals.

These threats call for the need to transform the country's food system in a manner that is eco-friendly, resilient, and just by shifting to agroecological production practices as opposed to conventional practices rooted in synthetic fertilisers and pesticides, and hybrid seeds.

Meeting the country's food security and nutrition needs requires integration of ecological principles into farming to restore soil health, enhance biodiversity protection, and strengthen resilience to climate variability. Despite its numerous benefits, adoption of agroecology in Kenya remains limited due to several factors including limited access to organic inputs, inadequate technical support, low awareness among policy and decision makers, subsidy bias towards industrial agriculture, and market and policy barriers.

For the country to achieve its food security and nutrition needs while also addressing the triple planetary crisis of pollution, climate change and biodiversity loss, there is an urgent need to integrate agroecology across all sectoral plans, policies and strategies at national and county level, bolster public investment in agroecology, enhance research, extension, and knowledge sharing on agroecology and establish structured markets and certification systems for agroecological produce to enhance farmers' income.

This policy brief is intended for decision makers at the national and county government levels, particularly the ministries of agriculture, environment and planning and economic development, and other relevant agencies and departments.

## Background

The agricultural sector is the backbone of Kenya's economy, accounting for about 22.5% to the Gross Domestic Product (GDP) in 2024, and a key source of employment and livelihood, particularly for the rural population (KNBS, 2025). While the sector recorded a mixed performance in 2024, the burden of malnutrition persists as a critical concern. The proportion of the population with severe food insecurity increased from 15% in 2016 to 28% in 2023, one in five children are stunted while one in four women are anaemic.

The need to feed Kenya's growing population has led to increased expansion of agricultural activities into natural habitats, creating a significant threat to biodiversity. Food security has also been negatively impacted over the years by the increased incidences of extreme weather events such as droughts, heavy rains, and floods, which are attributed to the adverse effects of climate change (IPCC, 2023). With these challenges, there is a widespread recognition that the current food systems are failing to meet human needs and are exacerbating climate change and biodiversity loss.

## Why agroecology?

Transforming Kenya's food system requires shifting how food is produced, distributed, and consumed to make it sustainable, resilient, equitable, and healthy. Agroecology offers a proven pathway by harnessing natural processes, optimizing farm resources, reducing harmful impacts, and promoting social equity.

Agroecology integrates local and scientific knowledge, fostering interactions among plants, animals, people, and the environment. It emphasizes co-creation of knowledge that blends science with traditional and local knowledge of food system actors. It is widely recognized as a transdisciplinary science, a set of practices, and a social movement (Figure 1).

A transdisciplinary science	A set of practices	Social movement
The integrative study of the ecology of the entire food system, encompassing ecological, economic and social dimensions	Aimed at improving agroecosystems by harnessing natural processes, creating beneficial biological interactions and synergies among their components	That strengthens the economic viability of rural areas based on short marketing chains and safe food production, it supports diverse forms of smallholder food production, food sovereignty, local knowledge, social justice, local identity and culture, and indigenous rights for seeds and breeds



Figure 1: Dimensions of agroecology

Source: Adapted from High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, 2019

The agroecological transition pathway is informed by 13 agroecological principles which are consolidated around the 3 interrelated organizational pillars of a sustainable food system. (Figure 2).

The principles relate closely to the Food and Agriculture Organization of United Nations' 10 elements of agroecology.



Figure 2: Principles of Agroecology

Source: Adapted from High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, 2019



## Benefits of Agroecology



Figure 3: Possible outcomes for agri-food systems transformation

Source: Adapted from High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, 2019

Figure 3 above highlights some of the key benefits that Kenya can realise by integrating the above agroecological principles in her food system.

### Current state of agroecology in Kenya

- Kenya has made significant progress in promoting agroecological practices, particularly through development of agroecology policies and initiatives. Murang'a County was the first county in Kenya to develop a policy on agroecology (see Table 2).
- According to Kenya Organic Agriculture Network (KOAN), there are approximately 173,000 hectares of land in the country currently under organic cultivation. In addition, Kenya has at least 64,000 organic producers, 100 organic processors, and about 6 certified organic farmer markets mainly spearheaded by NGOs. Additionally, there are about 11 organic traders and 7 organic input suppliers.
- Some progress has been made in developing certification schemes for organic farming. There are local certification bodies currently operating in the country, among them, Encert and AfriCert (KOAN, 2024). These are mostly spearheaded by NGOs and the private sector.
- In recent years, efforts have also been made by some universities and colleges, such as Egerton University, to integrate agroecology into their academic curriculum from certificate to post-graduate programs.
- In some parts of the country, there are training and outreach programs for agroecology, led by the private sector and civil society actors (AFSA, 2020).
- Some of the common agroecological practices currently practiced in Kenya include integrated pest management (IPM), agroforestry, composting and organic manure use, soil and water conservation, livestock production, food forest, seed saving and agro-processing.

### Kenya's commitments to agroecology

The 2010 Constitution of Kenya acknowledges sustainable development as a valuable principle to good governance and guarantees every citizen the right to healthy and adequate food, and a clean and a healthy environment. The country's long term development blueprint - Vision 2030 - further emphasizes the need to produce food sustainably. In keeping with the provisions of the Constitution, several policy frameworks have been developed at national and county level to position the country towards a sustainable path to agricultural production. Table 1 provides a summary of national policy frameworks that provide for agroecology in Kenya.

**Table 1: Policy framework on agroecology at the national and county level**

Sector	Framework	Relevance
Agriculture	Agricultural policy 2021	<ul style="list-style-type: none"> <li>Provides for promotion of agroecology among other nature-based solutions to achieve sustainable and resilient food systems.</li> </ul>
	National Agroecology Strategy for Food System Transformation Strategy (NAS-FST), 2024-2033	<ul style="list-style-type: none"> <li>This is Kenya's central commitment to agroecology that aims to sustainably transform the country's food system to ensure food security and nutrition, climate resilient livelihoods and social inclusion for all.</li> </ul>
Environment	National Environment Policy 2013	<ul style="list-style-type: none"> <li>Provides for promotion and support for eco and organic farming to maintain soil fertility.</li> </ul>
	National Biodiversity Strategy and Action Plan (2019-2030)	<ul style="list-style-type: none"> <li>Calls for provision of subsidies that support agroecological initiatives and elimination of subsidies on environmentally harmful agrochemicals.</li> <li>Provides support to smallholder farmers to implement agroecological practices and techniques through rural development programs.</li> <li>Provides for promotion of agroecological practices as a mechanism for soil and water conservation.</li> <li>Calls for promotion of agroecology as a strategy for achieving climate smart agriculture (CSA) at the county level.</li> </ul>

At the county level, there is growing commitment from the county governments to promote agroecology. However, more counties are yet to commit to promoting agroecology as part of

agricultural transformation. The table 2 highlights some of the counties that have developed or are developing the policy frameworks for agroecology.

**Table 2: Policy frameworks on agroecology at the county level**

Sector	Framework	Relevance
Agriculture	Murang'a County Agroecology Policy 2022-2032	<ul style="list-style-type: none"> <li>This is the key framework that aims to support productivity and sustainability of the agroecological food production system in Murang'a County in line with the National agroecology Strategy for Food System Transformation Strategy.</li> <li>Among others, it commits to create and fund a county agroecology department or board, integrate agroecology in mainstream agriculture in all productive sectors and mainstream agroecology in extension services.</li> </ul>

Agriculture	Vihiga County Agroecology Policy, 2025	<ul style="list-style-type: none"> <li>This policy seeks to promote the adoption of Agroecology practices to enhance agrobiodiversity conservation for a more sustainable food system.</li> <li>Key commitments in this policy include supporting production and consumption of safe and diverse diets, promotion of indigenous agricultural knowledge and practices, supporting and promoting marketing of agroecology products and strengthening of research and extension services on agroecology.</li> </ul>
	West Pokot County Agroecology Policy, 2025	<ul style="list-style-type: none"> <li>This policy aims to integrate biodiversity conservation and sustainable ecosystem use into agriculture, enhancing incomes, food, and nutrition security by mainstreaming agroecology into policies and programs.</li> <li>Key commitments include integrating agroecological practices into county policies, building knowledge and skills, promoting sustainable agro-enterprises and markets for agroecological products, and strengthening indigenous seed and food sovereignty.</li> </ul>
	Makueni Agroecology Policy, 2025 (Draft)	<ul style="list-style-type: none"> <li>This policy aims to guide Makueni County's agroecological transition, fostering a sustainable food system that ensures food security, better nutrition, climate-resilient livelihoods, and inclusive growth.</li> </ul>

At the international level, agroecology has been recognized by many governments, including Kenya, as an effective approach for transforming global food systems towards a more productive, sustainable and inclusive path. The UN Food Systems Summit (2021) and the Global Stocktake

under the United Nations Framework Convention on Climate Change (UNFCCC) are some of the frameworks that have recognized agroecology. Table 3 highlights some of the regional and global policy frameworks to which Kenya has committed that expressly call for the promotion of agroecology.

**Table 3: Regional and global policies on agroecology**

Sector	Framework	Relevance
Agriculture	Comprehensive Africa Agriculture Development Programme (CAADP) Strategy and Action Plan: 2026-2035 <sup>1</sup>	<ul style="list-style-type: none"> <li>Seeks to promote and support the adoption of conservation agriculture and the promotion of agroecological practices as a strategy for achieving sustainable food production on the Continent.</li> </ul>
	Global Stocktake (UNFCCC) <sup>2</sup>	<ul style="list-style-type: none"> <li>Outcome of the first Global Stocktake encourages implementation of integrated, multi-sectoral solutions, such as land-use management, sustainable agriculture, resilient food systems, nature-based solutions and ecosystem-based approaches to mitigate climate change impacts and losses.</li> </ul>
Environment	Kunming-Montreal Biodiversity Action Plan <sup>3</sup>	<ul style="list-style-type: none"> <li>Recognizes application of agroecology as one of the approaches for achieving target 10 on Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry.</li> </ul>

<sup>1</sup> <https://au.int/en/documents/20241230/caadp-strategy-and-action-plan-2026-2035>

<sup>2</sup> <https://unfccc.int/documents/636608>

<sup>3</sup> <https://www.cbd.int/gbf/targets>

		<ul style="list-style-type: none"> <li>Encourages the use of integrated pest management to reduce the risks of pesticides and highly hazardous pesticides (HHPs) to protect biodiversity from pollution (Target 7).</li> </ul>
	Global Framework on Chemicals- For a Planet Free of Harm from Chemicals and Waste <sup>4</sup>	<ul style="list-style-type: none"> <li>Commits to phase out HHPs in agriculture promote transition to and make available safer alternatives by 2035.</li> <li>Calls on governments to implement policies and programmes to increase support to safer and more sustainable agricultural practices, including agroecology, integrated pest management and non-chemical alternatives by 2030.</li> </ul>

## Gaps and Barriers

While Kenya has made strides in promoting agroecology, it is yet to be given greater attention due to various actors, including farmers, pesticide regulators and decision makers. The following gaps and barriers have slowed down the development and adoption of agroecology in Kenya.

- Limited access to organic inputs:** Lack of reliable supply chains for existing organic inputs have limited their access and wider adoption among farmers, especially those in remote areas.
- Inadequate technical support:** While agroecology is gaining momentum in some areas, many farmers still lack the technical skills and institutional support to implement it effectively. County governments have yet to integrate agroecology in their agricultural extension services, leaving a significant gap in agroecology-focused trainings and resources.
- Low awareness among policy and decision makers:** Some policymakers, county technocrats, and extension officers lack clarity about what “agroecology” means, its benefits, trade-offs.
- Market barriers:** Without access to premium markets, farmers are less incentivized to adopt agroecological practices, as they cannot capitalize on the higher prices that organic produce can command. The lack of certification systems and market infrastructure for organic products limits their ability to reach consumers who are willing to pay more for sustainably produced goods.
- Policy barriers:** Although Kenya has adopted a national agroecology strategy, its implementation has been slow and fragmented. A few counties have made commendable efforts to domesticate the strategy, but most have yet to do so. Progress has also been hindered by weak coordination among government agencies, limited collaboration between national and county governments, and poor alignment among stakeholders implementing various agroecology initiatives.
- Subsidy bias toward conventional / high-input agriculture:** There are limited financial incentive schemes specifically targeting agroecological transitions (subsidies, credit, insurance) compared to those for conventional input-intensive agriculture. Existing government subsidies often support mineral fertilisers, hybrid seeds and high-input yield increases rather than organic inputs or diversified systems. This biases agricultural

<sup>4</sup> <https://www.chemicalsframework.org/page/strategic-objectives-and-targets>

## Recommendations

If implemented, the following recommendations will enhance adoption of agroecology in Kenya:

- The Ministry of Agriculture must strengthen policy and legal frameworks by integrating agroecology across all sectoral plans, policies and strategies, and encourage county governments to domesticate the National Agroecology Strategy at their regulatory level and integrating agroecology across all sectoral plans, policies and strategies.
- National and county governments must boost public investment in agroecology by establishing dedicated budget lines, offering incentives and subsidies for agroecological inputs, and expanding access to financing to support farmers' transition to sustainable practices.
- The Ministry of Agriculture must enhance research, extension, and knowledge sharing on agroecology by investing in participatory research, reorienting extension services to promote agroecological principles, establishing county-level demonstration farms, and strengthening data collection and documentation on agroecological practices.
- The Ministry of Agriculture must safeguard farmers' seed rights by promoting and strengthening community seed banks and systems to ensure access to indigenous and climate-resilient varieties.
- The Ministry of Agriculture, in collaboration with county governments, must establish structured markets and certification systems for agroecological produce to enhance farmers' incomes. It should also support farmer cooperatives to strengthen their bargaining power and promote value addition for indigenous crops and agroecological products.
- The Ministries of Agriculture at both national and county levels must integrate agroecology into climate, environment, health, and nutrition agendas, while promoting cross-sectoral financing across agriculture, health, environment, and education sectors to support agroecological initiatives.

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### **Pesticide Action Network International (PAN)**

is a network of over 600 participating nongovernmental organizations, institutions and individuals in over 90 countries working to replace the use of hazardous pesticides with ecologically sound and socially just alternatives.

Web: [pan-international.org](http://pan-international.org)

Bluesky: [paninternational.bsky.social](https://paninternational.bsky.social)

Facebook: [PesticideActionNetworkInternational](https://www.facebook.com/PesticideActionNetworkInternational)

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**Centre for Environment  
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### **Scale Up Agroecology for Sustainable and Resilient Food Systems in Kenya**

This case study was produced by **CEJAD** in collaboration with PAN International. It is one in a series of PAN case studies showcasing the benefits and contributions of agroecology to climate resilience, food security, health and biodiversity protection. The series is produced by members of the PAN International Agroecology Workgroup. The full series is available in a number of languages via the QR code.

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