

RESEARCH FOR AGROECOLOGY NETWORK SOUTHERN AFRICA POSITION ON AGROECOLOGY

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Introduction

RAENS – Research for Agroecology Network Southern Africa² is a network that aims to strengthen existing initiatives, showcase the potential and scalability of agroecology, facilitate shifts in agricultural training and research towards agroecological and regenerative ways of producing food, fibre, and fodder, and to inform policy, thereby leading to an enabling landscape for agroecology uptake, research and training.

The founding members of the network are:

- The Centre for Coordinating Agricultural Research and Development in Southern Africa (CCARDESA), a SADC institution based in Botswana
- The University of Cape Town (UCT), South Africa;
- Sokoine University of Agriculture (SUA), Tanzania;
- Lilongwe University of Agriculture and Natural Resources (LUANAR), Malawi;
- Marondera University of Agriculture, Science and Technology (MUASt), Zimbabwe;
- Zambia Agriculture Research Institute (ZARI), Zambia;
- Research Institute of Organic Agriculture (FiBL), Switzerland;
- Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Zambia office; and
- Young Professionals for Agricultural Development (YPARD), Germany.

The specific objectives of RAENS are:

1. **To improve coordination of agroecology research** and sharing of experiences in the region, in collaboration with farmers and their organisations, extension agents, market actors and other grassroots practitioners;
2. **To develop a growing number of agroecology scholars and practitioners** in the region with skills, knowledge and relevant tools;
3. **To increase the availability and awareness of agroecological knowledge materials**, methodologies and tools, including the innovations of regional actors;
4. **To contribute to an improved policy environment for gender-sensitive agroecological transitions** at local, national and regional levels through evidence-based policy guidance.

¹ This position paper will be reviewed periodically by network members.

² Pronounced RAINS.

Although agroecology is a well-established concept, the interpretation of its meaning varies considerably. This short position paper thus sets out the understanding of agroecology that underpins the work of RAENS network members. We build from the definition used by the High Level Panel of Experts on Food Security and Nutrition (HLPE) of the UN Committee on World Food Security (CFS):

“Agroecological approaches favour the use of natural processes, limit the use of purchased inputs, promote closed cycles with minimal negative externalities and stress the importance of local knowledge and participatory processes that develop knowledge and practice through experience, as well as more conventional scientific methods, and address social inequalities. Agroecological approaches recognize that agrifood systems are coupled to social–ecological systems, from food production to consumption and involve science, practice and a social movement, as well as their holistic integration, to address food security and nutrition” (HLPE 2019).

Agroecology past and present: Setting the scene

Agroecology draws on both traditional and contemporary scientific knowledge. It has its roots in the traditional and indigenous knowledge systems of many farmers across the world, who over centuries have developed approaches to nurture their soils, manage pests and diseases, develop new crops and breeds, and adjust to changing climatic conditions (Altieri, 2018). Millions of farmers, especially small-scale farmers in the global South, remain strongly connected to the rhythms of nature, and in many aspects farm agroecologically. Through such practices, biodiversity loss and greenhouse gas emissions are reduced, and a substantial amount of carbon is stored in the vegetation and soils. Traditional, sustainable farming practices were systematically undermined by colonialism and remain under threat due to inappropriate agricultural development programmes, market distortions favouring the use of synthetic chemical inputs (fertilizers, pesticides, herbicides and fungicides), and new technologies that often are not needs-based, context-specific, or respectful of local knowledges and skills. Far from rejecting technology, agroecology embraces appropriate innovations grounded in local contexts and needs.

The increasing industrialization of agriculture in Africa raises profound concerns – not only for small-scale farmers but for the wider landscapes and socio-cultural systems of which they are a part. High-external input, resource-intensive agricultural systems have caused massive deforestation, water scarcities, biodiversity loss, soil depletion, high levels of greenhouse gas emissions and multiple negative impacts on human wellbeing (FAO, 2022). Urgent actions are needed to transform our agri-food systems, especially in the climate change ‘hotspot’ of sub-Saharan Africa, which is already experiencing faster warming than the global average, as well as droughts, heatwaves and occasional flooding (Engelbrecht *et al.*, 2024).

The transformation of agri-food systems to agroecology and more sustainable forms of producing and consuming food offers many opportunities for social and environmental wellbeing and for realising the Sustainable Development Goals (FAO, 2019; Lieppert *et al.*, 2020). As a holistic approach, agroecology has the potential to increase dietary diversity and access to safe and nutritious food; enhance environmental sustainability; reduce agricultural greenhouse gas emissions; boost climate resilience; and support equitable and sustainable livelihoods (El Bilali

et al., 2021; United Nations 2021). Furthermore, because of the pro-poor nature of agroecology-oriented agricultural growth in most SADC countries, it holds potential for a significant reduction in poverty (SADC 2008).

What, exactly, do we mean by agroecology?

Our understanding of agroecology is embedded in a holistic and integrated perspective that sees it as a **set of practices, as a science and discipline, and as a social movement** (Wezel *et al.*, 2009).

As a set of **agricultural practices**, agroecology seeks ways to improve agricultural systems by harnessing natural processes, creating beneficial biological interactions and synergies, avoiding synthetic and often harmful external inputs and enhancing ecological processes and ecosystem services.

As a **science and discipline**, the focus is on the application of ecological concepts and principles to the design and management of sustainable food systems, including the integration of research, education, action and change.

As a **social movement**, the aim is to transform agriculture to build locally relevant and economically viable food systems that support diverse forms of smallholder food production and family farming, farmers and rural communities, food sovereignty, local knowledge, social justice, local identity and culture, and indigenous rights.

The truly **transformative** part of agroecology is when we start linking these components together and seeing the connections and opportunities that arise through a more holistic approach. This transformative agroecology seeks to “develop food systems that meet local and regional food, feed, and fibre needs, conserve and protect natural resources, provide essential environmental services, ensure food security and sovereignty, make food justice a reality, and create the opportunity for present and future generations to enjoy healthy and satisfying lives” (Gliessman 2015, xii). Transformative agroecology envisages a shift away from corporate-dominated agribusiness towards care-based, solidarity economies and local markets.

This understanding aligns with the **FAO’s 10 elements of agroecology**, adopted by 197 member states and intended as a framework that can be adapted to local contexts in support of agroecological transitions towards sustainable agriculture and food systems. Linked to these 10 elements are **the 13 Principles of AE developed by the High-Level Panel of Experts on Food Security and Nutrition** (HLPE)--a science-policy interface of the UN Committee on World Food Security (CFS) commissioned by the FAO and increasingly accepted as a road map for holistic food systems transformation. Figures 1a and 1b illustrate the 13 principles and 10 elements of agroecology, respectively.

13 Principles

10+ Elements



Figure 1a and 1b The 13 principles and 10 elements of agroecology (FAO 2018; HLPE 2019)

A key aspect is that these principles **go beyond technical, agronomic practices to encompass social values; issues of equity, dignity, justice and fairness; as well as more equitable and co-created forms of knowledge production and governance** (Bezner Kerr *et al.*, 2022). We understand agroecology as a transformative movement, science and practice that is context specific, but based on key ecological as well as social principles. The latter include local self-determination, collective rights and access to the commons, recognition of diverse ways of knowing, integration of humans in nature, and solidarity (Declaration of the International Forum for Agroecology 2015). Agroecology represents an alternative to the industrial food system and can contribute towards achieving food sovereignty, understood as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Nyéléni Declaration 2007). As a network, RAENS supports full implementation of the UN Declaration on the Rights of Indigenous Peoples and the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP).

The RAENS network also places emphasis on the following:

Youth. We emphasize the potential of agroecology to empower local communities, especially youth and women. Youth have a critical role to play in realising the potential of agroecology, especially given that SADC countries have young populations (Chevallier *et al.*, 2020) and high rates of youth unemployment. Agroecology can catalyse important changes in youth empowerment and employment through strengthening youth leadership in tertiary institutions, in

food systems and markets, and at farm level. A focus on curricula change towards agroecology is a critical component of this work.

Gender. The relational components of agroecology present a powerful opportunity to bring gender parity to our agri-food systems by recognising the central role played by women as seed custodians, food and nutrition providers, and caregivers of both land and family. However, the contributions of women have often been rendered unimportant and unmeasurable. It is vital that agroecology initiatives recognise the importance of gender, as well as other intersectional inequalities embedded in food systems, so they are not re-enforced and to enable positive changes in food and nutrition (Zaremba *et al.*, 2022).

Multifunctionality. Agroecology is multifunctional – it is not only a production system; it is a holistic, integrated approach that supports livelihoods, biodiversity conservation, water management, climate change adaptation and livelihoods, and household food security. This means that it requires a level of transdisciplinary research and interdepartmental coordination among government, NGOs, donors and other actors working on all of these issues. It cannot be tackled by a siloed, productivist approach. We need to be much more innovative in its governance implementation and evaluation.

Knowledge production. Agroecology is knowledge-intensive and contains both traditional/indigenous and contemporary scientific innovations (Altieri 2008). Yet the dismantling of public-sector support for agriculture has led to a research agenda set by agribusiness and shaped almost exclusively by a paradigm focused on profit and yield and on crops, breeds and traits for large-scale commercial farmers. We need to restore, rebuild and support a research and development agenda that places smallholder farmer needs, knowledge and practices, as well as agrobiodiversity and nutrition, at the centre, that firmly embeds an approach based on co-created and farmer-led research and innovation, and that addresses the required food system transformations.

There is confusion about many terms related to sustainable agriculture, including agroecology, organic agriculture, conservation agriculture, climate-smart agriculture, regenerative agriculture. Some aspects of these approaches and practices may overlap with agroecology, but the holistic and integrated approach of agroecology, its emphasis on people, place, culture, biodiversity, politics and governance, and its links to global social movements for food sovereignty are unique (IPES-Food 2022).

Transitioning to agroecology in Southern Africa

Within SADC countries, the agricultural sector accounts for 65% - 70% of regional employment (Gosling *et al.*, 2020; Mutengwa *et al.*, 2023), with 38% of land under agricultural use (Chevallier *et al.*, 2020). Yet the region relies on an increasing percentage of food imports (Gosling *et al.*, 2020), with some 43% of the regional population experiencing food insecurity, compounded by rising food prices (Chevallier *et al.*, 2020). SADC countries depend on a “resilient agricultural system and natural resource base,” yet this is being undermined by climate change, unsustainable agricultural practices, and threats to social wellbeing through harm to health and bad labour practices (Chevallier *et al.*, 2020). In this context, agroecology offers vital opportunities for transforming agri-food systems towards being more socially just and environmentally sustainable.

Agroecology has to date been underfunded and under-prioritised (Gosling *et al.*, 2020). The corporatisation of agrifood research in recent decades and the reduction in publicly funded agricultural research are global phenomena and ones that can be seen on a regional scale (Buhler *et al.*, 2002). Low levels of suitable agricultural technology adoption amongst small-scale farmers is a significant challenge (Gosling *et al.*, 2020). Appropriate financial, research and extension support for agroecology in southern Africa could enable it to realise its potential for the adoption of place-based, appropriate, inexpensive technologies suited to smallholder farming. This project offers a vital opportunity to mobilise the necessary capacity and to pool resources towards enabling agroecological innovations for a just and sustainable agri-food systems transformation in the region.

When considering food system change towards agroecological food systems in the SADC region, RAENS members see value in the following, phased approach (after Gliessman 2015, 2016), recognizing that the kinds of transitions will obviously differ, depending on the scale and nature of the farming system.

- First, **increase the efficiency** of industrial and conventional practices and **reduce the use of expensive, scarce, and environmentally damaging inputs**.
- Second, **substitute alternative practices for industrial/conventional inputs and practices**
- Third, redesign the agroecosystem so that it functions on the basis of a new set of ecological processes
- The **fourth level** refers to **re-establishing connections between growers and eaters** and reforming markets with a focus on re-orientating these towards approaches that support local and regional food systems
- The fifth level focuses on **systemic reform**, including financial support for agroecology, reducing “perverse incentives” that perpetuate existing agro-food systems, addressing power dynamics, and engaging with social and political principles of participation, fairness, connectivity and land and natural resource governance.

Combined, these will promote a food system that realises food sovereignty and is based on equity, participation, democracy, and justice, and which is not only sustainable, but restorative and healthy for all people and the Earth.

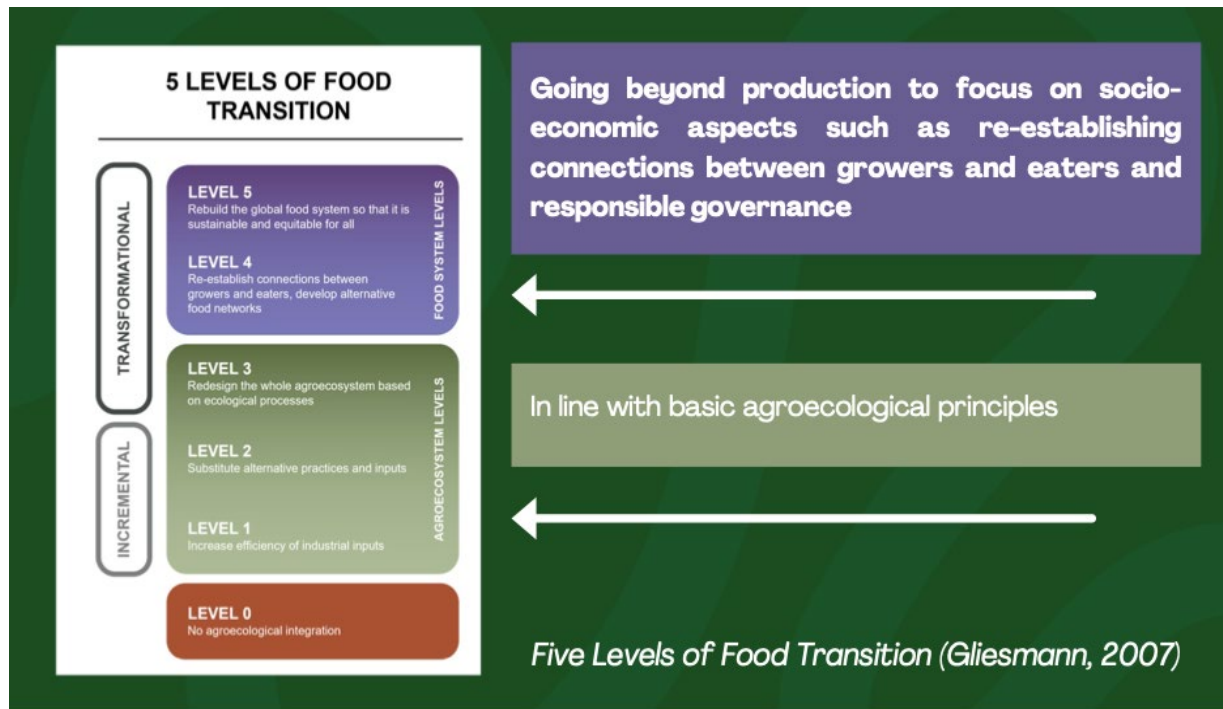


Figure 2 The five levels of food transition (Gliessman 2007)

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