



**CASE STUDIES: EXPLORING
AN AGROECOLOGICAL
APPROACH TO AGRI-FOOD
SYSTEMS IN SOUTH AFRICA**



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About this paper

The Southern African Faith Communities' Environment Institute (SAFCEI) commissioned a series of research papers focused on agroecology in South Africa, Tanzania, Zimbabwe and Zambia. This paper provides an overview of the state of the agri-food system in South Africa and the potential provided by an agroecological framework as a response to current challenges of ecosystem degradation, climate change and malnutrition. A series of key findings and recommendations are provided. SAFCEI aims to use this work to further deepen its understanding of the linkages between climate and food justice in Africa and to support the generation of advocacy material and practical recommendations it can offer to its members.

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LIST OF ACRONYMS

EMG	Environmental Monitoring Group
FAO	Food and Agriculture Organization (United Nations)
HLPE	High Level Panel of Experts
IPCC	Intergovernmental Panel on Climate Change
PEJD	Pietermaritzburg Economic Justice & Dignity
PGS	Participatory Guarantee Systems
SAFCEI	Southern African Faith Communities’ Environment Institute
SKI	Seed and Knowledge Initiative

EXECUTIVE SUMMARY

South Africa's food system, shaped by colonial and apartheid-era policies and later by neo-liberal economic policies, fails to deliver the nutrition needed for its citizens. Government's endorsement of industrial-style agriculture is harmful to ecological and human health, and it reduces the ability of farming systems to maintain resilience or adapt to climate change.

Despite the efforts of many civil society and farmer organisations to push for an agroecological framework for the agri-food system, government remains committed to top-down interventions that do more harm than good.

The two case studies profiled in this paper illustrate agroecological approaches at the urban market garden and the rural farm scale.

Key findings

- **Agroecology is more than production practices**, it extends into attempts to shift the dominant marginalising and discriminatory agri-food system. Agroecological farming, with its emphasis on food and cultural traditions, justice, co-learning and social issues, is able to transform the agri-food system.
- **Key limitations to scaling up of agroecology must be removed.** This includes perverse government subsidy systems and an extension service that is not trained adequately in sustainable farming techniques.
- Access to land is not the only determinant of success. Farmers need **access to capital, infrastructure, labour and training**.
- More **financial support** must be found to enable those already training or advocating for agroecology on the ground to share their knowledge with others.
- **Seed saving** must be incorporated into agroecological farming activities as insufficient and/or expensive organic seed provision is a key constraint to uptake of agroecological farming.
- **Participatory guarantee systems** (PGS) are becoming a popular way for smallholders to provide assurance to their markets that they are producing sustainably. Advocacy work may not be enough to shift the agri-food system towards an inclusive and equitable one that generates benefits for both people and planet. More consumer involvement in systems such as PGS could lead to a change in consumption patterns that would reshape the system from the bottom-up.



1. INTRODUCTION

South Africa's agri-food sector is characterised by unequal access to land, a degraded basis of production, concentrated ownership of production, as well as distribution and retail structures. Outcomes of this system are growing hunger and malnutrition and the rise of non-communicable diseases. The system has been shaped by colonial and apartheid era policies, the inequalities of which were entrenched with the adoption of a neo-liberal economic model post-independence in 1994.

South Africa has a dualistic agricultural sector with a small commercial sector (about 32 000 farmers) (International Trade Administration, 2021) and a much larger smallholder and subsistence sector (estimated at

between 2-4 million smallholder farmers. The commercial sector is well financed, with extensive investments in infrastructure and good access to markets. The smallholder market struggles to gain access to capital and markets.

There is an urgent need for transformation within the agri-food system to enable it to deliver nutritious and affordable food for all, while not harming the planet.

SAFCEI calls for agricultural systems that work with and not against nature, that build resilience to climate change and that are socially just. It therefore supports the adoption of agroecology as a framework for agri-food systems.

1.1 About this paper

This paper provides an overview of the current state of South Africa's agri-food system and positions agroecology as a suitable framework for the country. It uses two case studies (one urban market garden and one rural farm) to highlight the potential of agroecology to act as a transformative lever for system change because it acts at multiple levels: production, social and economic.

Agroecology is also at its core an emancipatory approach focused on building the agency of food producers and consumers. This is borne out in the case studies, in which farmers belong to PGSs – a localised inclusive, democratic and transparent mechanism for assuring organic production and supporting collective action.

Participatory guarantee systems

PGS is an inclusive, transparent and accessible way for smallholders to 'certify' their produce as organic. A PGS comprises farmers, consumers, retailers and other interested parties that collectively inspect the farm against agreed upon organic standards to provide assurance that standards have been met. It not only provides this assurance to market but is also a vehicle for empowering farmers in knowledge sharing, enabling shorter market linkages and capacitating farmers to engage with local governments. PGS is a system that is suitable and affordable for smallholder farmers.

This system actively includes consumers in the process, which both educates about agroecology, shortens food supply chains and raises awareness of the need to farm in a way that does not harm the planet.

More information can be found at www.pgssa.org.za



2. CHARACTERISTICS OF SOUTH AFRICA'S AGRI-FOOD SECTOR

There are structural drivers of the failure of the agri-food system in South Africa. These include entrenched, intergenerational poverty due to unequal land access and historical exclusion from economic opportunities; a degraded base of production; and concentrated ownership of key functions within a neo-liberal economic framework that is promoted by the current government. This section explores these drivers in more depth.

2.1 Unequal access to land

Colonial and apartheid land policies have skewed ownership of arable land towards the commercial farming sector, predominantly white farmers.

The imposition of taxes, which required payment in cash, forced many Africans off the land to find paid migrant work in cities in the early 1900s. The 1913 Natives Land Act limited African land ownership to 7%, later increased to 13% in 1936. In the 1960s, about 3.5 million Africans were forcibly moved to 'homelands' – now called communal areas (Mani et al., 2021).

Here, in constrained conditions, they continued to farm food and livestock, but the high densities of people and livestock led to degradation of the land (Mani et al., 2021), among other drivers like drought. This, in turn, resulted in lower farming productivity and growing rural poverty.

The country's land restitution and redistribution policies have been ineffective in restructuring ownership of arable land. By 2012, 87% of arable land in the country was still owned by white commercial farmers (Pereira, 2014) and this had only reduced to 72% by 2017 (Republic of South Africa, 2018).

Land on its own, however, is not sufficient for successful farming. Smallholder farmers need support in gaining access to infrastructure and markets, as well as capital (Mani et al., 2021). Beyond these challenges, the basis of production in South Africa – water, soil and biodiversity – is increasingly degraded.

2.2 Degraded base of production

An estimated 60% of land in South Africa is degraded, with 91% prone to desertification (Mani et al., 2021). Land degradation lowers the ability of an ecosystem to contribute services, such as providing grazing, fuel, timber, water and food – both farmed and wild (Mani et al., 2021).

Destructive and ongoing production practices (deep tillage, monocropping) in the commercial sector accompanied by high use of external synthetic inputs (fertilisers, agrochemicals) degrade soils, necessitating even more intensive use of chemicals to maintain yields. And the communal areas are degraded due to the high population pressure, overuse of soil and overgrazing in constrained areas (Mani et al., 2021).

South Africa faces a water deficit by 17% by 2030 if nothing is done to fix aging infrastructure, address water quality and make usage more efficient (Roodboi, 2020). In addition, 56% of treatment plants are in poor or critical condition with “billions of litres of poorly treated or untreated sewage, industrial and pharmaceutical wastewater” directed into water bodies – polluting our rivers and oceans (Development Bank of Southern Africa, 2022:1).

According to South Africa's Revised National Biodiversity Framework (Republic of South Africa, 2021):

22% of South Africa's ecosystems are under threat and a significant number of bird, reptile, insect and mammal species at risk of extinction, including 14% of plants.

Climate change is and will increasingly drive water shortages as late or infrequent rains will result in droughts (Development Bank of Southern Africa, 2022). It will also impact the ability of rain-fed agriculture to produce food. Agriculture already uses about 60% of all available water (The Conversation, 2016), making further uptake of irrigation infrastructure to enhance productivity in climate change problematic.

The increase in carbon monoxide is also driving the spread of woody plants across arable land areas that will further reduce water availability and ecosystem productivity (Mani et al., 2021).

It is the way in which farming is practiced that makes it so dangerous to human and planetary health. The industrial model uses harmful agrochemicals, monocropping, intensive livestock production, and heavy tilling – all of which degrade soils, pollute water bodies and harm ecosystems (Benton et al., 2021). It also takes place within an inequitable and harmful economic framework.

2.3 Concentrated power

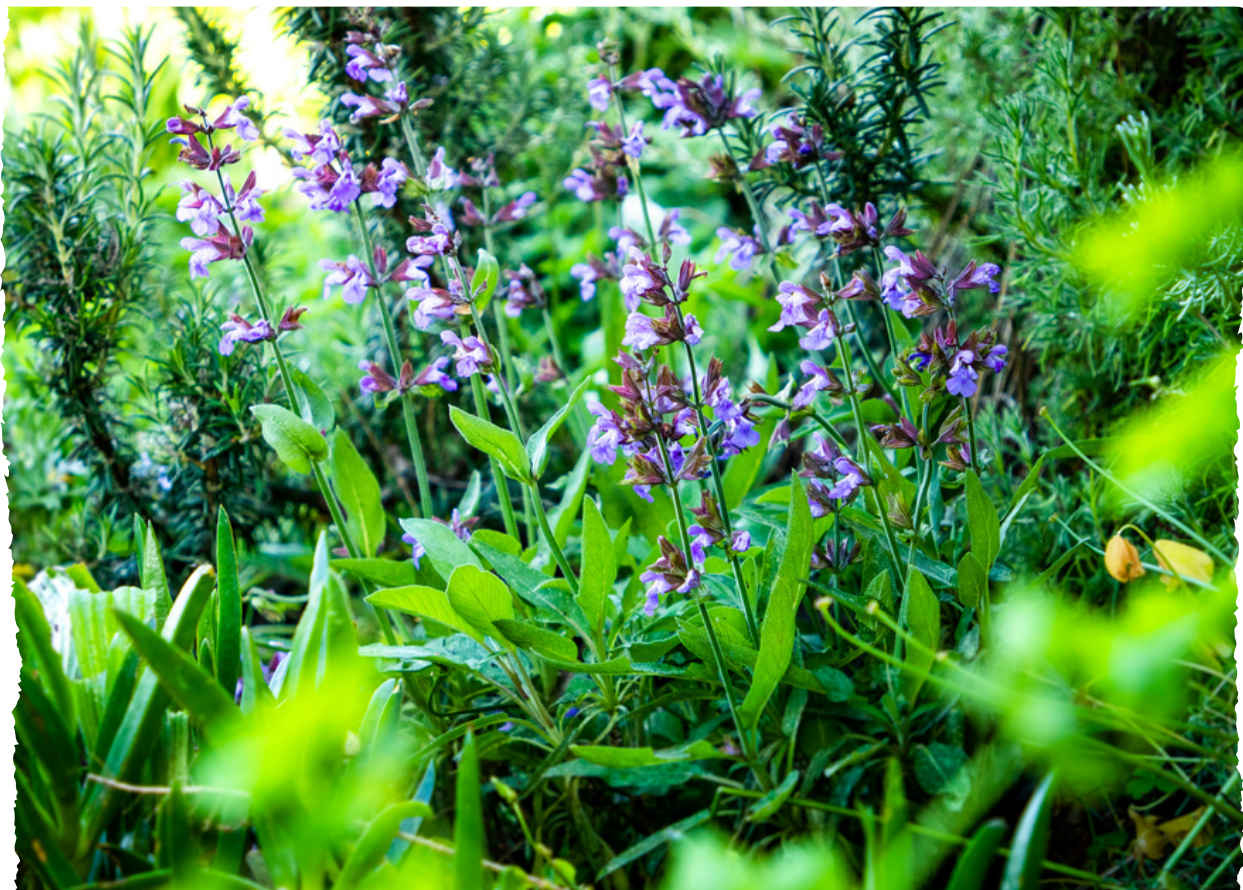
Concentration of the agri-food system starts at the input stage. The input market is dominated by two companies for germplasm and seed (Pioneer Hi-Bred and Bayer-Monsanto), four companies for fertilisers (Omnia, Kynoch, Sasol and Foskor) and three for animal feed (Astral, Afgri and Quantum) (Greenberg, 2016).

Grain storage is controlled by Afgri, Senwes and NWK (Greenberg, 2016). Food processing and manufacturing (including milling) is dominated by Tiger Brands, Pioneer Foods, Nestle, AVI and Unilever (Greenberg, 2016). Only four companies (Shoprite Group, PicknPay, Spar and Woolworths) account for the bulk of sales in the formal food sector (Pereira, 2014).

Current structures effectively exclude smallholder farmers from the country's food system by creating high barriers to entry for small farmers, manufacturers and retailers (Pereira, 2014).

While this highly concentrated production, distribution, processing and retail structure may be able to leverage economies of scale to deliver large volumes of food, it is not necessarily nutritious or even affordable food. There are negative outcomes to the use of this model in South Africa.

"Only 5 000 to 7 000 commercial farmers – mostly white – generate 80% of agricultural output in South Africa, most of which goes to supermarkets."
International Trade Association, 2021



3. OUTCOMES OF SOUTH AFRICA'S AGRI-FOOD SYSTEM

Expected outcomes of a 'healthy' agri-food system include sufficient, nutritious, affordable and accessible food. South Africa's system is not able to do this.

3.1 Hunger and malnutrition

Almost 50% of South Africans are 'hungry'. The country is food secure at a national level, but at the household level there are high levels of hunger, mal- and undernutrition, particularly among children (Pereira, 2014). The last South African National Health and Nutrition Examination Survey in 2012 found that only 45.6% of the population was food secure with 32.4% of those living in urban informal areas and 37% of those in rural formal areas experiencing hunger (Pereira, 2014).

Food security at the individual and household level is determined to a significant degree by the ability to buy food, or by access to arable land and the other resources necessary to grow food (Battersby, 2011).

As the country urbanises, more South Africans are accessing food through the formal retail sector, and it is therefore people's ability to buy food that determines how much and what kind they buy. High levels of poverty and unemployment in the country mean that about 18 million people (out of a population of about 60 million) are on social grants, which further orients their consumption towards the purchase of food – from supermarkets and local stores (Pereira, 2014).

The price of food has escalated significantly over the past few years – an average 10% increase for the average household food basket according to the Pietermaritzburg Economic Justice & Dignity [PEJD] (2021). A volatile global market, rising electricity and agricultural input prices – particularly for fertilisers, and disruptions to global supply chains because of Covid-19 lockdowns are all driving up prices of basic goods.

South Africa's food system is also exposed to global price shocks, which are passed onto households (Pereira, 2014). This puts immense strain on low-income houses or those dependent on social grants (PEJD, 2021). In April/May 2021, the National Income Dynamics Study – Coronavirus Rapid Mobile Survey found that 2.3 million households reported child hunger with 620 000 households reporting that a child was hungry almost every day.

The country is undergoing a nutrition transition towards food with higher fat and protein content, that is more highly processed and with more calories (Pereira, 2014). Only able to buy cheap food, the poor fill their trolleys with high calorie products – white starches, sugar and oil. In a survey undertaken in 2021 by PEJD, women note that “whatever we have got, we eat, it doesn't matter anymore as long as we can eat it”. The transition is accompanied by an increase in obesity and overweightness that is linked to growth in non-communicable diseases (Pereira, 2014).

3.2 Lowered climate change resilience

Healthy ecosystems are needed to adapt to climate change. These systems need to support ongoing soil health, water provision, air purification and maintenance of biodiversity. South Africa, with large swathes of land degraded and growing water scarcity, is particularly vulnerable (SAFCEI, 2021). This, combined with high levels of poverty and unemployment, make adaptation critical, and difficult.

South Africa is a significant greenhouse gas emitter; thus, it contributes to climate change. It needs to focus on mitigation (some of which could be achieved by shifting to more sustainable agricultural practices) and adaptation.

The food system is particularly vulnerable as the Intergovernmental Panel on Climate Change [IPCC] (2007) predicts a warming climate and shifting and diminishing rainfall, which will impact farmers' ability to reliably produce food.

The IPCC noted in 2007 already that agricultural productivity in sub-Saharan Africa would likely decline from 21% to 9% by 2080 (SAFCEI, 2021). And it noted that most communities do not have the necessary safety nets to adapt (SAFCEI, 2021). In addition, the rapid loss of biodiversity in the country means that our ability to make new medicines and breed new crops and animals able to withstand new climatic conditions is limited.



4. AGROECOLOGY AS A TRANSFORMATIVE RESPONSE

Agroecology is a transformative approach to farming and food systems that can deliver nutritious, safe and affordable food for all, without damaging the planet (Agroecology in Action, 2022).

This approach is an innovative way of combining science, lived experience and local and traditional knowledge to “study, design, manage and evaluate agricultural systems that are productive but also resource conserving” (Agroecology in Action, 2022:1).

For those that practice and/or advocate for agroecology, the approach also encompasses social and political aspects.

As a set of practices, agroecology uses natural processes to create beneficial biological interactions and synergies that enhance farming productivity while minimising damage to the environment (Wezel et al., 2020).

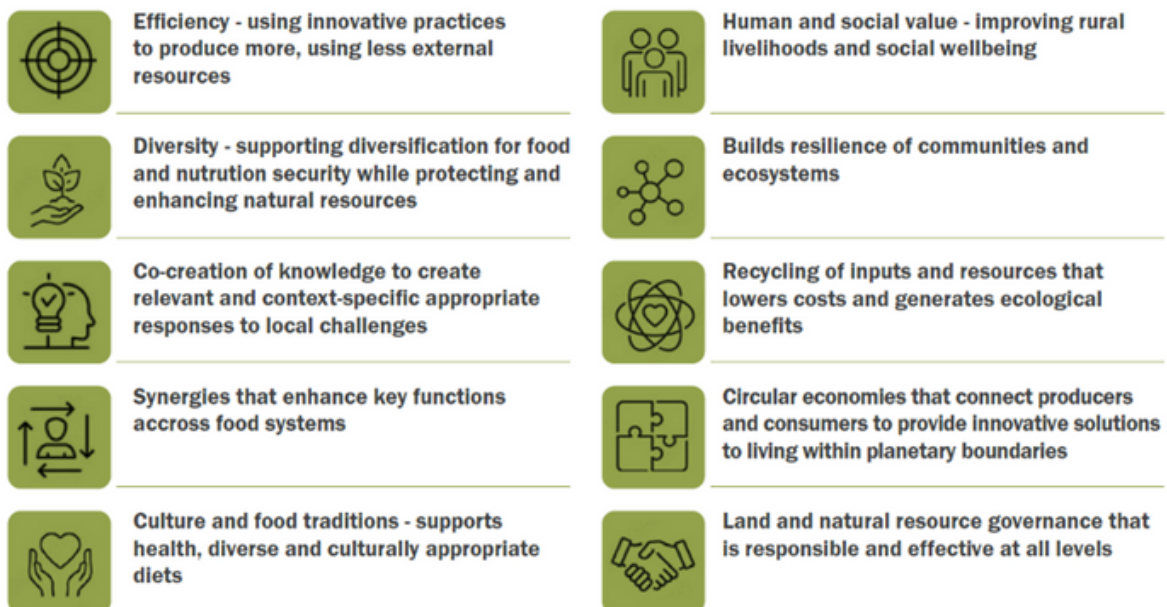
As a social movement, agroecology provides a solution to malnutrition by delivering a greater diversity of foods with higher nutritional content (Wezel et al., 2020). It also combats the effects of climate change by lowering greenhouse gas emissions (mitigation) and building more resilient farming systems (adaptation). And it works to make the agri-food system more equitable, inclusive and fair for both producers and consumers (Wezel et al., 2020).

There are 10 elements of the agroecological approach, decided on through a global multi-stakeholder consultation process undertaken by the FAO in 2014. These are diversity, co-creation of knowledge, synergies, efficiency, recycling, resilience, human and social values, culture and food traditions, responsible governance, and circular and solidarity economy (Wezel et al., 2020).

The 10 elements can be divided into contextual features (human and social values, culture and food traditions), characteristics of and practices within agroecological systems (diversity, synergies, efficiency, resilience, recycling, co-creation and sharing of knowledge), and enabling features

(responsible governance, circular and solidarity economy) (FAO, 2018). There is an emphasis on putting the “aspirations and needs of those who produce, distribute and consume food at the heart of food systems” (FAO, n.d.:1). This means focusing on dignity, inclusion, equity and justice through building autonomy of farmers and communities, promoting the right to food and ensuring access to genetic resources (FAO, n.d.). There is a particular emphasis on creating opportunities for women and youth, ensuring that they are included in both the economic opportunities available in farming and in decision making (FAO, n.d.). The elements, their associated practices and beneficial outcomes are described in the figure below.

Elements of Agroecology



4.1 What would a sustainable agri-food system look like?

The elements of agroecology provide a contextual, flexible framework for the agri-food system encompassing social, ecological and economic elements. In particular, the system needs to (SAFCEI, 2021):

- Encourage and support the use of local and improved crop varieties and livestock breeds to enhance genetic diversity. This work must be done in collaboration with farmers to ensure alignment to their needs and to support resilience building.
- Eliminate agrochemicals in production systems, along with other technologies that pose a risk to human and environmental health, such as genetically modified crops and insects.
- Focus on more efficient use of resources to make the most of what we have and ensure that resources are available to future generations, as well as reducing farmers' dependence on corporate supply of inputs.
- Embrace practices that conserve and enhance biodiversity, sequester carbon and ensure the availability of potable water.
- Acknowledge agricultural heritage systems that foster social cohesion; this means recognising and actively applying farmers' rights and including farmers in co-production of knowledge.

- Reducing the carbon footprint of production, distribution and consumption, which will also reduce soil and water pollution.
- Actively strengthen adaptive capacity within communities to external shocks, including climate change.
- Promote democratic governance of natural resources to generate an equitable and inclusive system.

In addition, the High Level Panel of Experts on Food Security and Nutrition (HLPE) note that a large-scale transition towards a sustainable food system rest on several cross-cutting initiatives. It notes that these are (HLPE 2019) are:

- Inclusive and participatory forms of innovation governance.
- Information and knowledge co-production and sharing among communities and networks.
- Responsible innovation, such as open knowledge-sharing platforms, that steers innovation towards social issues.

This paper explores the potential of the farms used as case studies to contribute towards these elements, and therefore the potential of agroecology to act as a lever for large-scale transformation of the agri-food system.

4.2 Agroecology in South Africa

There is significant civil society organisation support for agroecology in South Africa with consistent advocacy work undertaken to shift agricultural policy towards agroecological principles.

Leading organisations in this regard are Biowatch, the Environmental Monitoring Group (EMG), the Seed and Knowledge Initiative (SKI), the African Centre for Biodiversity, SAFCEI and many others. There is an Agroecology South Africa platform comprising more than 70 organisations working to have agroecology adopted as a framework for agriculture in the country. Several organisations such as the South African Organic Sector Organisation, PGS South Africa and the Knowledge Hub for Organic Agriculture in Southern Africa advocate for an organic policy that encourages producers to eliminate harmful production practices.

The EMG is part of the Avaclim project that has been undertaken in South Africa, Brazil, India, Ethiopia, Senegal and Burkina Faso. The project aims to create the "necessary conditions for the deployment of agroecology in arid areas" by 2022 (EMG, n.d.). An example of the many on-the-ground projects undertaken in South Africa is that of Phakamani Siyephambili. This project in the Eastern Cape province aims to support food sovereignty by enabling producers to use their indigenous knowledge and agroecological practices to provide better nutrition for their communities, but also to generate income from sale of produce (Avaclim, 2020).

By 2019, five years after launching, there were 783 members across three municipalities and 13 geographical locations, all producing organic food (Avaclim, 2020).

There are also several organisations working on agroecological curriculums, although none have been approved by the relevant government departments yet. The country has a draft organic policy, which has not progressed for almost a decade. Policymakers note the importance of sustainable agriculture but take no concrete steps towards supporting a more equitable, inclusive and environmentally friendly system.

The concentrated nature of the agri-food system results in rigid and inequitable power dynamics between those that control the system and those working in and consuming from it.

Against this backdrop, the paper explores two case studies. The first is the Ocean View Organic Farmers Cooperative in Cape Town, Western Cape province and the second is Hillview Farm near Cambridge in the Eastern Cape province. The former is an urban market garden and the second a farm, granted to the co-owner Busisiwe Mgangxela through the Land Reform programme. Both produce for self-provision and for market. They are analysed against the elements of agroecology and sustainability presented in the introduction to this paper. Information for the case studies was drawn from interviews with the farmers.



5. CASE STUDY: OCEAN VIEW ORGANIC FARMERS COOPERATIVE

The Ocean View Organic Farmers Cooperative (OV Organics) is an emerging social enterprise established in 2020 that is based in the Cape Town suburb of Ocean View. The cooperative comprises five coloured women who collectively farm a 6 000-square meter market garden that produces a range of organic seasonal vegetables. They are in a formally registered cooperative and are registered as small-scale farmers with the Department of Agriculture.

5.1 The history

The original five founders of the cooperative applied in 2018 to take part in a one-year urban farming internship with Neighbourhood Farms, a non-governmental organisation working in Cape Town's south peninsula.

They, along with other interns, learned how to farm from scratch, converting the unused land on Ocean View Secondary School into a productive farm. In early 2020, Neighbourhood Farms left the project handing over management of the farm to 10 remaining interns. Five men and five women. The men chose to move onto other professions and the five women formed the cooperative and carried on farming. Over time, some of the founding members have fallen away, to be replaced with others from the community who bring farming, accounting and marketing skills.

5.2 Growing the business

Within two weeks of the decision to form a cooperative, South Africa went into a hard lockdown because of Covid-19. The cooperative members had no markets at that point and no capital or savings buffers. They very innovatively connected with local feeding schemes to provide organic vegetables, attracting some donors that would cover base costs and they launched a vegetable box delivery scheme.

Over 2020 and into 2021, they developed a small bakery business, opened an on-farm restaurant and set up a planter box business. They also opened in 2021 an allotment garden enabling community members who were providing the elderly and vulnerable people with food, space to grow their own. In 2022, Boskos, an indigenous food and medicine food forest, was opened and managed by non-cooperative members but long time supporters of the farm.

The farmers are registered with the provincial Department of Agriculture and thus eligible for grants. These grants take the form of vouchers for seedlings and compost. While this is a welcome subsidisation, it is not possible to source organic seed and seedlings through the grants, and to apply for them is administratively burdensome.

Organic seeds are very expensive to buy when planting at a commercial scale because the market is not developed enough to enable lower pricing of seeds.

The farmers note also that they lack critical skills around production planning, for example, and business management skills. They have attempted to upskill themselves through online courses and some face-to-face training but do require dedicated training in some critical areas.

As noted in the introduction, small-scale farmers need more than access to land to succeed. They need infrastructure, markets and access to capital. While the cooperative has garnered some grant support from the Department of Agriculture, this is in the form of vouchers for inputs (seed and fertiliser). While necessary, this doesn't enable the farmers to invest in security to protect against theft of crops, shade cloth and fencing. And items such as shade cloth and fencing must be replaced through the income generated through sales of produce.

With no capital or savings to draw on, the farmers must take from their meagre drawings to make these replacements or leave them unattended.

5.3 Financial model

The cooperative has established several income streams – produce sales, ongoing donations towards supply to feeding schemes, rental incomes from the nursery and a community allotment, and an on-site café. As per cooperative regulations, the financial standing of the cooperative is transparent, and all members have sight of banking transactions and monies. This is done through regular reporting on a WhatsApp group and sharing of the bank statements.

5.4 An agroecological approach

From inception, the cooperative has adopted an agroecological approach to farming using organic farming practices and successively engaging in larger collaborative endeavours. Their undertaking is described below against the elements of agroecology, as grouped by the FAO (2018) into contextual features, characteristics and practices and enabling features.

Contextual features

Contextual features of agroecology include human and social values as well as culture and food traditions. OV Organics puts this into motion through the following principles and activities.

AGROECOLOGICAL ELEMENT	OV ORGANICS ACTIVITIES
Human and social element	<ul style="list-style-type: none">• Hosts community meetings for free, including events for vulnerable and abused women.• Provides free space for children’s activities.
Culture and food traditions	<ul style="list-style-type: none">• There is an effort to align the café’s offerings with local cuisine.

Characteristics and practices

Characteristics and practices include diversification, synergies, efficiency, resilience, recycling, co-creation and sharing of knowledge. The table below provides an overview of what OV Organics undertakes in each of these areas.

AGROECOLOGICAL ELEMENT	OV ORGANICS ACTIVITIES
Diversification	<ul style="list-style-type: none"> • Intercropping. It is a market garden, so rows planted to different vegetables are close enough together to constitute intercropping. In addition, plants such as marigolds are planted in vegetable rows to act as pest deterrents. • Crop rotation. Crops are rotated in a simple sequence – root, leaf, root, leaf crops. • Multiple income streams. The cooperative has the farm, a café, nursery and farm tour offering, as well as stable donations.
Synergies	<ul style="list-style-type: none"> • There is no integration of livestock into production. This is an urban farm prone to theft and it cannot afford night-time security. It does source horse manure from local stables for making compost. • Use of trees and hedges. Bana grass is used as windbreaks and to provide shelter for small wildlife. It provides almost continuous ecological corridor access across the farm. This is key to preserving biodiversity.
Efficiency and recycling	<ul style="list-style-type: none"> • Recycling of biomass. Biomass is used to make compost, including crop residues where feasible. If diseased, these need to be burnt. • Recycling of nutrients. Legume crops are grown and turned into the soil when they have finished producing to fix nitrogen in the soil. • Re-use of water. The farm predominantly uses borehole water for irrigation. Municipal water is used for washing of produce – the wastewater from this process is cycled back into the farm garden. • Home-made remedies. The farmers make their own pest and disease remedies from natural ingredients. They also make use of effective microorganisms to boost microbial activity in the soil, which deters pests and diseases from emerging.
Resilience	<ul style="list-style-type: none"> • Own water sources. The farm uses borehole water for production, although there are issues with the salt content. • Extreme weather events. It is not planted for resilience in terms of trees and windbreaks to shelter crops from extreme rains, hail, winds, etc.
Co-creation and knowledge sharing	<ul style="list-style-type: none"> • Networks. The cooperative is part of local and regional networks. These include food security groups and PGS South Africa – see more below. • Farmer-to-farmer visits. The farmers take part in ongoing farmer visits to other locations and provide tours to farmer groups from other regions. They have also participated in several research projects.

Enabling features

Enabling features encompass responsible governance and building a circular and solidarity economy. The table below provides an overview of what the cooperative undertakes in each of these areas.

AGROECOLOGICAL ELEMENT	OV ORGANICS ACTIVITIES
Responsible governance	<ul style="list-style-type: none"> • The farm is governed in a cooperative structure, which mandates collective decision-making. Each member has a vote. Each year a chair, secretary and treasurer are elected to conduct leadership and administrative duties. In addition, members act as farm manager and marketing managers. • While not responsible to any other bodies, the cooperative does have a responsibility towards the school governing body to conduct itself professionally. This includes paying rent on time, keeping to the code of conduct and looking for synergistic opportunities to raise the profile and income for both partners.
Circular and solidarity economy	<ul style="list-style-type: none"> • The cooperative enjoys good relationships with its customers, marketing and selling directly from the farm, through veggie boxes and at local markets. This means that the local market is prioritised creating shorter farm to fork linkages. • In addition, the provision of subsidised organic food through donations to feeding schemes and the allotment ensures that organic produce goes where it is needed most. • The farm's membership in a PGS, which it founded, also helps to build solidarity among small-scale farmers in the area as they collectively market their produce and appeal to local government for support under the local economic development mandate.

5.5 Opportunities and blockages Opportunities and blockages

There are key elements of the agroecological approach evident, most notably their production practices and participation in co-creation and sharing of knowledge. What has been done very well is the creation of relationships with local communities. This is strengthened through the creation of the PGS, which is linked to provincial, regional and national PGS groups, perhaps providing an inclusive and equitable platform that can call for food sovereignty.

There are key blockages to their success, including lack of applicable

knowledge regarding elements such as production planning, seed saving and business management. Agroecology is not included in extension officer training. The lack of access to capital is a significant challenge. The Department of Agriculture's grant process (which is administratively burdensome) needs to align with the capacity and actual needs of smallholder farmers. The inability to buy in sufficient quantities of organic seed is a critical limitation for all organic farmers. There needs to be an enabling policy environment for the organics input market, with subsidisation switched to those players contributing towards a sustainable agri-food system.





6. CASE STUDY: BAFO AND BUSI ORGANIC FARMING PTY LTD

Hillview Farm, near Cambridge, East London is in South Africa's Eastern Cape Province. It is home to Bafo and Busi Organic Farming Pty Ltd owned by Busisiwe Mgangxela and her husband.

6.1 The history

Busi's parents were farmers, and she helped to herd cattle and sheep and water the plants from a young age. Her interest in nutrition stemmed from her mother, also a trained nurse, who planted vegetables for health. Busi started her training as a nurse in 1983, graduating in 1985. She went on to get a diploma in mid-wifery and a degree in nursing education and administration. She managed a surgical ward in Saudi Arabia for two years before returning to South Africa.

In 2011, Busi and her husband started farming remotely using paid labour to look after the fields and pigs, but by 2014 both were hands-on on the land left to Busi's husband by his father. They started with 0.2 hectares of land for vegetables, herbs and medicinal plants and 2 hectares for grains. They then applied to the Department of Land Reform for a 48-hectare farm in the Eastern Cape, providing enough space for Busi to expand her operation. There is a 30-year lease agreement with the Department.

6.2 Growing the business

Busi has to a large degree taught herself the basis of agroecological production, starting by researching online and then joining Zingisa

Educational Project in 2015. The project provided education on agroecological principles, including intercropping, crop rotation, mulching, seed banking and water harvesting. She received five days of training with Trust for Community Outreach and Education. As Busi became more knowledgeable she shared her knowledge more widely. After phoning into a radio show to advise another caller on the use of pesticides, she became a regular contributor on farming advice. From this place, she was invited into a network of educational institutions working on agroecology, including Rhodes University and Fort Hare.

Busi is an active seed and food sovereignty activist and holds leadership positions in multiple farmer representative groups. She is an accredited trainer and completed the IFOAM Ecological Organic Agriculture Leadership Training.

Contextual features

Contextual features of agroecology include human and social values as well as culture and food traditions. Hillview Farm puts this into motion through the following principles and activities.

Following this, she was nominated to attend continental training in this regard. She is also the Southern African representative on the regional level of the global International Network of Farmer Organisations.

6.3 Financial model

This is a private business, run on a commercial basis. Busi, however, dedicates a lot of her time and resources to spreading the word about agroecology. The vision is to have a permanent training and demonstration centre on site.

6.4 An agroecological approach

The farm applies agroecological principles using organic farming practices. Its undertaking is described below against the elements of agroecology, as grouped by the FAO (2018) into contextual features, characteristics and practices and enabling features.

AGROECOLOGICAL ELEMENT	HILLVIEW FARM
Human and social element	<ul style="list-style-type: none"> • Volunteers on a variety of platforms that provide agroecology training, with a focus on women and youth.
Culture and food traditions	<ul style="list-style-type: none"> • Seed saving – to multiply open-pollinated indigenous varieties. • Cultivates indigenous crops – amaranthus, black jack, stinging nettle, dandelions, rocket and moringa. • Cultivates plants for medicine – including cancer bush and worm wood (<i>Artemisia afra</i>), used for malaria treatments.

Characteristics and practices

Characteristics and practices include diversification, synergies, efficiency, resilience, recycling, co-creation and sharing of knowledge. The table below provides an overview of what Hillview Farm undertakes in each of these areas.

AGROECOLOGICAL ELEMENT	HILLVIEW FARM ACTIVITIES
Diversification	<ul style="list-style-type: none"> • Crop rotation and intercropping – core values of agroecology incorporated into production plans. • Companion planting.
Synergies	<ul style="list-style-type: none"> • Not able to include livestock in production as no infrastructure (like fencing) in place. • Prepares soil with compost, vermicast and vermiliquid from on-site red worm farming. • Beneficial insects and plants – nasturtiums to attract aphids away from cabbage, borage and lavender to attract bees, pansies and zinnia to attract butterflies – and for beauty. • Companion planting • Intercropping of a variety of food plants both for nutritional diversity and for pest control • Used design principles to combine fruit trees, vegetables (including nitrogen-fixing legumes), herbs, medicinal plants, and flowers to act as wind breaks and to enhance soil fertility.
Efficiency and recycling	<ul style="list-style-type: none"> • Kitchen waste used for animal feed and red worm farming
Resilience	<ul style="list-style-type: none"> • Seed saving – to multiply open-pollinated indigenous varieties. • Rainwater harvesting, river on site and borehole, but needs repair. • Makes own remedies for pest and diseases, as well as buying in organic remedies such as neem oil.
Co-creation and knowledge sharing	<ul style="list-style-type: none"> • Active networker and trainer. • Head of South African chapter of the International Network of Farmer Organisations. • Convener for the Western Cape PGS. • Provides training to lead and other farmers.

Enabling features

Enabling features encompass responsible governance and building a circular and solidarity economy. The table below provides an overview of what Hillview Farm undertakes in each of these areas.

AGROECOLOGICAL ELEMENT	HILLVIEW FARM ACTIVITIES
Responsible governance	<ul style="list-style-type: none"> • A private enterprise • Holds governance positions on various representative bodies
Circular and solidarity economy	<ul style="list-style-type: none"> • Active encouragement to local farmers to adopt agroecological practices, including seed saving • Provides for self-provision and then surplus is sold to market • Belongs to local, national and regional networks, holding leadership positions in many of them • Heads up a PGS

Busi is regarded as a lead farmer. She represents farmers from the 13 nearby villages – about 30 farming families – in a committee that feeds into the provincial Department of Agriculture.

She also sits on the South African Organic Sector Association's governing body and is South Africa's representative in the International Federation of Organic Farmers Organisations.

Beyond that, Busi was selected for the IFOAM–Organics International's training of teams of trainers' programme in 2020 and then for its Ecological Organic Agriculture Leadership Training course in 2021. She has gone on to provide assurance for training programmes and to administer training on IFOAM-funded lead farmer programmes.

Busi is also part of PGS SA's Pollinator Programme, which supports the training of lead farmers to set up and manage PGS' in South Africa.

Busi notes that "the land is my mother. The land is my everything. If you talk of land, you're talking food, you're talking water, you're talking minerals. If you talk of land, you're talking of freedom. If you talk of land, you're talking abundance and wealth".

6.5 Opportunities and blockages

Busi notes that agroecology is not just about food security, it goes further to support food sovereignty – "a person's ability to choose the type of food that they want to produce, and the food that they want to eat and that they feel is culturally appropriate". It includes the culture of agriculture.

Busi notes that the agroecological system must incorporate all elements from community seeds banks, continual learning, product marketing and consistent demand. She is an executive director of Movement in Africa, a non-governmental organisation that describes itself as a "co-created community wealth-building social upliftment solution to food sovereignty, peoples healing and environmental restoration: ultimately offering a system that creates healthy and sustainable communities." It aims to support a growing network of hubs throughout Africa focused on food sovereignty, agroecology and permaculture in rural communities.

Her primary constraints are financial – much of the work she undertakes to promote agroecology, including training, is done on a voluntary basis. Primary constraints to growth of the business are infrastructure and capital to buy "women-friendly" tools and processing equipment. A significant issue is the lack of fencing as crops can be ravaged by bush and water bucks, wild pigs and monkeys and it is impossible to keep livestock without fencing.

While there are buildings on the farm that could be used as storage and processing facilities, these need rehabilitation. And various farm equipment is needed, including processing equipment. The Department of Agriculture appears to not invest in infrastructure, and neither do typical donor organisations.

Busi contributes to promoting agroecology as a lever for change. She is an accredited trainer and acts as a spokesperson for farmers in leading representative bodies. If supported, she could play a significant role in wholesale system transformation.



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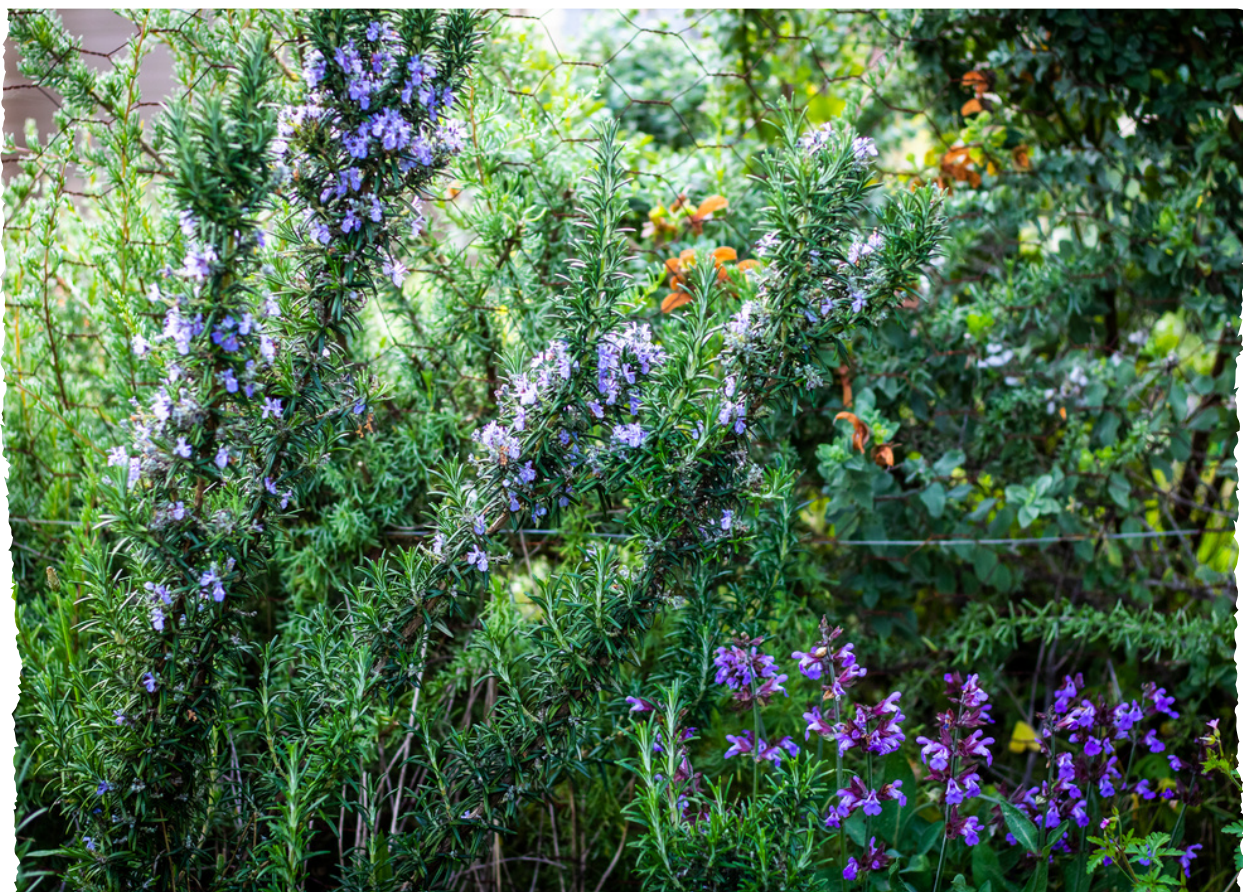
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7. KEY FINDINGS

- **Access to land is not enough**

OV Organics operates in a cooperative model while Busi & Bafo Organic Farming is a privately-owned for-profit business. Both farms, however, face the same challenges around infrastructure and access to capital. This speaks to the point that access to land is not enough, agroecological farmers need ongoing support to enable them to maximise their potential of delivering organic, nutritious food to the mass market.

- **Need appropriate input markets**

While the Department of Agriculture does support to an extent through lease agreements and input vouchers – these vouchers are typically redeemable against products from the industrial agricultural system. For example, it is not possible to redeem them for organic

seeds or seedlings because the organic input market is not yet at scale. The lack of affordable, accessible inputs for agroecology is a key stumbling block to the success of agroecological farmers.

- **Agroecology embodies diversity**

Both farms express the intent of the agroecological systems – going beyond production to also focus on social and cultural value systems (growing indigenous plants for food and medicine and trying to revive the ‘culture’ of agriculture through tours, training and events). And both are active in attempting to shift the food economy towards a circular and solidarity one through participation in PGS, active networking with other farmers, recycling as much as possible, and supporting other farmers.

8. CONCLUSION

There needs to be a radical transformation of South Africa's food system; this is unlikely to be instigated by government or by the corporate players that control the current system. The role of farmers and the consumers they feed has never been more important.

Both case studies in this paper show the diverse roles that farmers play when they are empowered and 'activated'. They are farmers, trainers and leaders. Farmers at both locations are also active advocates for the adoption of sustainable farming techniques and they have extended from roles of primary producers to also provide spaces for experimentation, for learning, for relaxing and for solace.

Consumers have a key role to play as a shift in their consumption patterns would signal to the market the need for change.

Bearing in mind that poverty and geographical location are key obstacles to accessing sustainable products, systems such as PGS could have a critical role to play in actively embedding consumers into the space of the producers. PGS consciously focuses on empowering its members, including in liaising with local authorities to provide support for local production. It also helps to shorten linkages between production and consumption, which generates immediate benefits in a lowered carbon footprint and a boost to the local economy.

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