



# CONSUMER GUIDE ON AGROECOLOGY

WHAT CONSUMERS NEED TO UNDERSTAND

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# Contents

<b>Acronyms</b>	<b>V</b>
<b>Introduction</b>	<b>1</b>
Background on Agroecology	1
The Food Systems Debate	1
<b>Food Safety</b>	<b>6</b>
The Food Safety Situation in Kenya	6
What Does Agroecology Offer?	7
<b>Nutrition and Food Diversity</b>	<b>9</b>
Nutrition Issues in Kenya	9
What Agroecology Offers	10
<b>Food Price Stability</b>	<b>12</b>
Stability of Food Prices in Kenya	12
What Does Agroecology Offer?	13
<b>Inclusive Markets</b>	<b>15</b>
Context	15
What Does Agroecology Offer?	15
<b>Food Culture Promotion</b>	<b>17</b>
Context	17
What Does Agroecology Offer?	18
<b>Environmental Conservation</b>	<b>19</b>
Context	19
What Does Agroecology Offer?	19
<b>Rural Development</b>	<b>21</b>
Context	21
What Does Agroecology Offer?	21
<b>Food Sovereignty</b>	<b>22</b>
Context	22
What Does Agroecology Offer?	22
<b>Climate Change Mitigation</b>	<b>24</b>
Context	24
What Does Agroecology Offer?	25
<b>Women and Gender Roles</b>	<b>26</b>
Context	26
What Does Agroecology Offer?	26

# Acronyms

<b>BFA</b>	Blue Food Assessment
<b>CGA</b>	Consumer Grassroots Association
<b>CO<sup>2</sup></b>	Carbon dioxide
<b>COVID-19</b>	Coronavirus disease
<b>FAO</b>	Food and Agriculture Organization
<b>FEWSNET</b>	Famine Early Warning Systems Network
<b>WFP</b>	World Food Programme

# Definition of terms

**Agroecology** is an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of sustainable agriculture and food systems. It seeks to optimize the interactions between plants, animals, humans, and the environment while also addressing the need for socially equitable food systems within which people can exercise choice over what they eat and how and where it is produced.

**Food safety** Food safety incorporates different processes of food handling procedures from food preparation, processing, storage, and distribution of the food products to the consumer's table. It entails different principles throughout the food chain which aims to prevent food from becoming contaminated and causing food poisoning.

**Food system** is the chain of activities involving the production, processing, transport, marketing, and consumption of food.

**Food sovereignty** is the right of peoples to healthy and culturally appropriate food produce through ecologically sound and sustainable methods. It emphasizes local food economies, sustainable food availability and center culturally appropriate foods and practices.

**Seed sovereignty** is the right of a farmer to save, use, exchange and sell his or her own seeds. Seed sovereignty seeks to address the ownership of seeds by local communities since a larger majority of seeds are becoming property of several major agricultural or seed corporations.

# Acknowledgement

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Finally, the completion of this project could not have been possible without the unwavering support and dedication of my colleagues at Consumer Grassroots Association (CGA). Thank you for going beyond and doing extra in the interest of the Consumer.

**Alice Kemunto**  
Executive Director,  
Consumer Grassroots Association.



# Foreword

Agroecology has emerged as an alternative approach to dealing with the myriad challenges brought about by conventional agriculture. The ever-increasing number of people who are food insecure, coupled with loss of biodiversity, land degradation, climate change, and environmental pollution among many other negative outcomes clearly point to a failure of our current food systems. Agroecology applies ecological and social concepts and principles to the study, design, and management of farming and agricultural systems to ensure food and nutrition security for all. Considered a holistic scientific approach, a set of principles and practices, and a social movement, agroecology recognizes that food systems are coupled with socio-ecological systems from food production to consumption.

Consumers are one of the key stakeholders in the food system, yet their potential and contribution to transitioning current unsustainable food systems to a more agroecological one is rarely recognized. Since the Earth Summit in 1992, it is recognized that achieving sustainable development requires the active participation of all sectors of society and all types of people. A consumer is any person who purchases or offers to purchase goods or services other than for the purpose of resale and enjoys certain rights. These consumer rights include the right to goods and services of reasonable quality,

the right to necessary information related to the goods and services, the right to the protection of their health, safety and economic interests, and the right to compensation for loss or injury arising from defects in goods or services. Agriculture and the food system therefore presents opportunities to either protect or undermine consumer rights, depending on how its managed.

This consumer guide on agroecology presents ten key issues and areas through which agroecology can enhance the protection of consumer rights. From food safety, food sovereignty, inclusive markets, environmental conservation, climate change, and gender, Consumer Grassroots Association (CGA) has done a wonderful job in preparing the Guide and highlighting how these issues relate to consumers. With a vision of empowering consumers, CGA is committed to grassroots consumer protection through education, research and advocacy on consumer-care issues. CGA works towards a fair, just, and safe marketplace for all Kenyan grassroots consumers in all sectors of the economy. The Guide will go a long way in creating consumer awareness on agroecology, and is a must read not only for consumers, but also for decision-makers and producers who play a critical role in ensuring consumer rights in the food and agriculture sector are respected.

**Martin Oulu, Ph.D.,**  
Coordinator,  
Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA)



# Introduction

## Background on Agroecology

Agroecology refers to the application of principles and concepts of ecology in farming and comes from two words “agro” and “ecology.” “Agro” is agriculture-related, while ecology is a branch of biology that deals with relationships between organisms and their surroundings.

Agroecology therefore promotes farming practices that work with and not against nature and in so doing, help conserve biodiversity, mitigate against climate change, enable resource use efficiency through circularity<sup>1</sup>, and practices that ensure local supply chains are developed and prioritized.

From as early as the 20th Century, scientific literature shows that Agroecology is not a new invention. It is unique from other sustainable development approaches. It has been embraced by families worldwide and is deeply rooted in the interest to realize sustainability. Agroecological innovations hinge on knowledge co-creation; combining science with producers’ traditional, practical, and local knowledge. Agroecology also improves producers’ decision-making ability and adaptive capacity in their communities.

At its core, agroecology promotes agricultural practices which conserve the environment. For such practices to be adopted and become the norm, we need to understand and rethink how we analyze and utilize knowledge as well as the sociopolitical environments in which agriculture is practiced. For this reason, holistic scientific research approaches should be considered. Moreover, agroecology intends to create a strong socio-political movement by bringing together all stakeholders in the food system to ensure a shared vision and work towards a truly sustainable food system. Consumers are a key constituency in the alliance of stakeholders.

## Consumers and the Food Systems Debate

A food system refers to the complex web of related activities involved in the production, processing, transport, and consumption of food. We should not forget that a food system also includes the related resources used up in each process as well as the impacts on the environment, health, and society.



Agroecology promotes **farming practices that work with and not against nature**





1 The 9 Rs of circularity or circular economy are Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover.

Food systems’ boundaries may be defined at different scales such as local, regional or global and for different contexts such as rural or urban. Food systems can also be differentiated from but are also part of other systems such as health, ecological systems, etc. hence we sometime also talk of an eco-agri-food-health system. A sustainable food system is one that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised (FAO 2018).

Food systems are fundamental for human society’s survival. They are key to meeting our food and nutritional needs, sustaining our economies, alleviating poverty, and shielding our societies from potential crises of famine and hunger. However, current food systems in the world, Kenya inclusive, are highly unsustainable, inefficient and inequitable. Humanity is confronted with food-related problems such as increased hunger and malnutrition, climate change, unhealthy diets, food safety concerns, social injustices, and so much more. The challenges and growing consciousness worldwide about food systems trends relate to how individual and collective

food production and consumption decisions contribute to health, equitability, and sustainability.

Conversations about how to transform our food systems remain a niche and are driven by a few small to medium-scale producers, whose approach to farming is now changing. Civil society organizations have also been at the forefront, calling for a different approach to food and farming systems. The rallying call has been the failure of the current approach to food systems, which focuses largely on big volumes and profits at the expense of the environment and the people.

Important to note is that some farmers also have difficulty choosing between more industrial agriculture forms or “alternative” farming practices, especially due to lack of information and misleading communications from industries and financiers. The debate also lacks a strong consumer voice, a key stakeholder and the end user of goods and services.

### Who is a Consumer

A consumer is an individual or group of people who purchase goods or services for personal use. They are the end users of goods or services.



Sustainable food and farming systems require the meaningful participation of all actors including consumers, who have significant influence. Through their purchases, consumers tend to express their preferences and values, that help shape the decisions producers make. Consumers directly finance food systems by absorbing costs along the value chain. Meaningful public engagement on food rights, alternative food production and food systems require that all segments of society are adequately empowered. Therefore, consumer engagement becomes a critical element in all food rights conversations. Consumer demands on the type and quality of food also greatly influence how food is produced, albeit in specific market demands within the overall food market landscape. However, the majority of consumers globally, Kenya inclusive, continue to be left out of the most critical conversations around the type of food they eat and how it is produced or processed, transported and accessed.

In Kenya, producers and consumers; the main stakeholders in a food system, are not adequately connected. This state has led to a failure in the ability of either party to take into account their respective interests and challenges. While it is assumed that producers have the final say on how food is produced, distributed or even priced, this is not the case for most Kenyan producers and remains a reality for small-scale farmers who produce more than 70% of the food consumed in Kenya. Producers are influenced by the cost and availability of inputs, varying weather patterns aggravated by climate change and political interests that dictate policies and what form of food production is supported through legislation, public financing and incentives. Smallholders must choose between promised increased productivity through high dependence on external chemical inputs and sustainable, safe food production methods. On the other hand, consumers remain largely unaware of these and other challenges facing producers, yet they are highly affected by the decisions made along the entire food system.

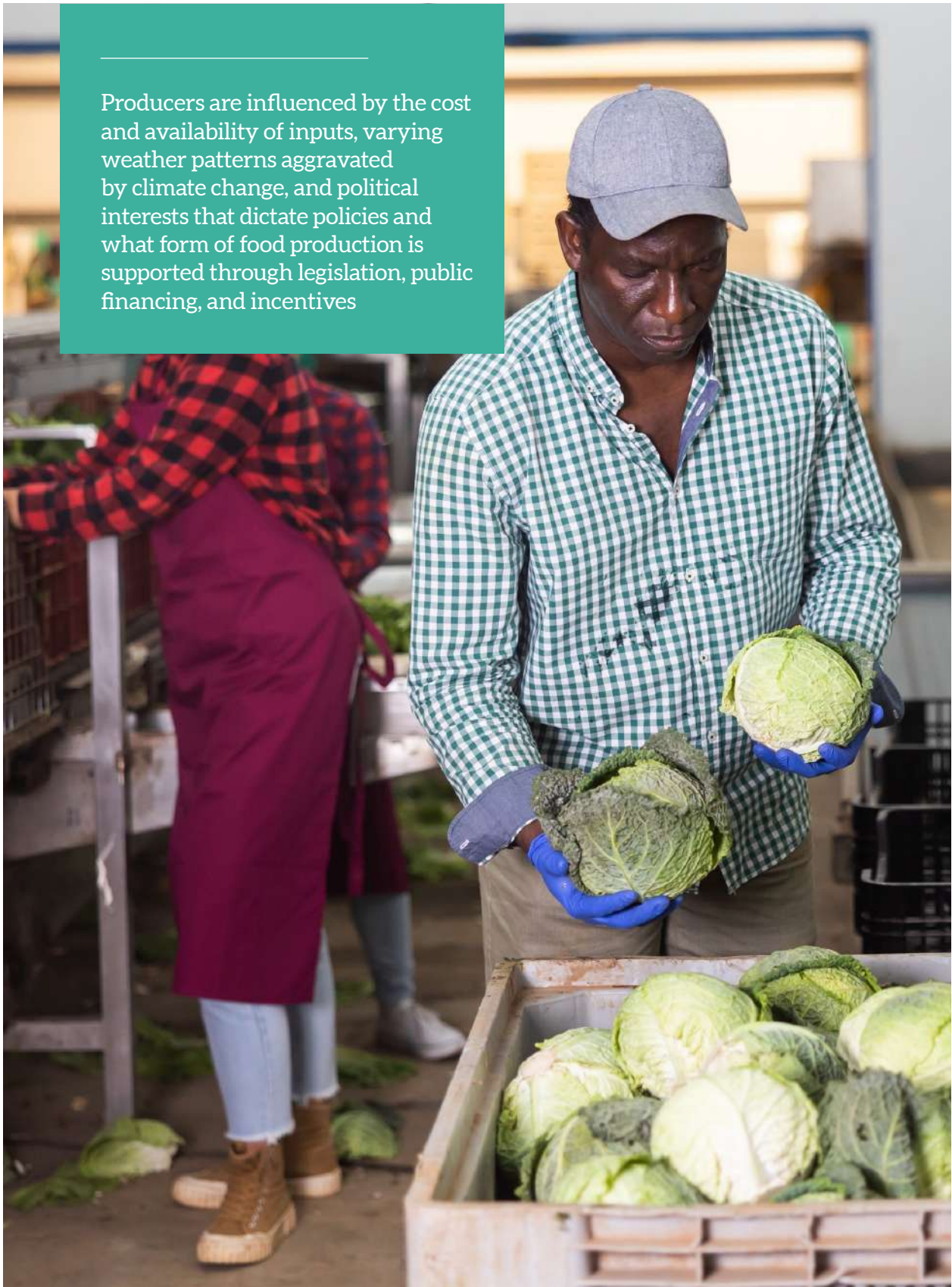
In addition to production, other aspects of food systems such as processing, value addition, transportation and pricing mechanisms, remain out of the control of consumers. Information and awareness on food systems issues are necessary to enhance consumer involvement in accountability and policy conversations on food and farming systems in Kenya. Furthermore, there is a shift in the level of participation in farming activities amongst Kenyans. With increasing urbanization and the growth of the service industry, more Kenyans are moving from earning an income from farming in rural areas and therefore only remain connected to the food system through consumption.

Through its various activities on food systems, Consumer Grassroots Association (CGA), has identified gaps in consumer engagement on food rights and food systems issues. Consumers, including consumer organizations, feel constrained to actively agitate on food-related concerns due to lack of information and understanding of food systems. There is limited knowledge on alternatives to industrial food systems, which consumers can actively promote. Information on agroecology, including its potential to address food safety concerns, access to nutritious food for all and affordability among other issues affecting consumers, is either unavailable or producer centered and therefore not easily accessible for the best interest of consumers. Therefore, there is need for coordinated action and collaboration among the range of actors in the food system.

This Consumer Guide on Agroecology is intended to bridge the information divide between consumers and producers, input suppliers, distributors, processors, decision-makers, regulators and any other player in the food system. It explains agroecology from a consumer perspective. The guide highlights a ten-point framework on Agroecology.

We hope it provides a good first step in enhancing the ability of consumers to meaningfully engage in the food systems debate and contribute significantly to the agroecological transformation that we envisage.

Producers are influenced by the cost and availability of inputs, varying weather patterns aggravated by climate change, and political interests that dictate policies and what form of food production is supported through legislation, public financing, and incentives



# Food Safety

## The Food Safety Situation in Kenya

Food safety is a key component of food security and functional food systems and it attracts the attention of both agriculture and health sectors.



Globally, one in ten people fall ill after consuming contaminated food and **420,000 die from food-related illnesses every year.**

The United Nations World Health Organization notes that unsafe food containing bacteria, viruses, parasites or chemical substances cause more than 200 diseases, ranging from diarrhea to cancers. Globally, one in ten people falls ill after consuming contaminated food and 420,000 die from food-related illnesses yearly. Children under five years carry 40% of the foodborne disease burden, accounting for 125,000 deaths yearly.

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of the foodborne disease burden, accounting for 125,000 deaths every year.

In 2020, CGA carried out a consumer survey on food safety in Nairobi, Kirinyaga, and Kajiado counties. The survey which covered various areas such as the respondents' role in food provision, food sources, level of concern, awareness of food safety issues and proposed interventions, showed that most consumers were concerned about safety of their food. Nine out of every ten consumers expressed greater concern about food safety in their county, with the other major food safety concerns identified being pesticide use/misuse (87%), lack of proper sanitation in the markets (60%), contamination during transportation (37%) and contamination during preparation (30%)<sup>2</sup>

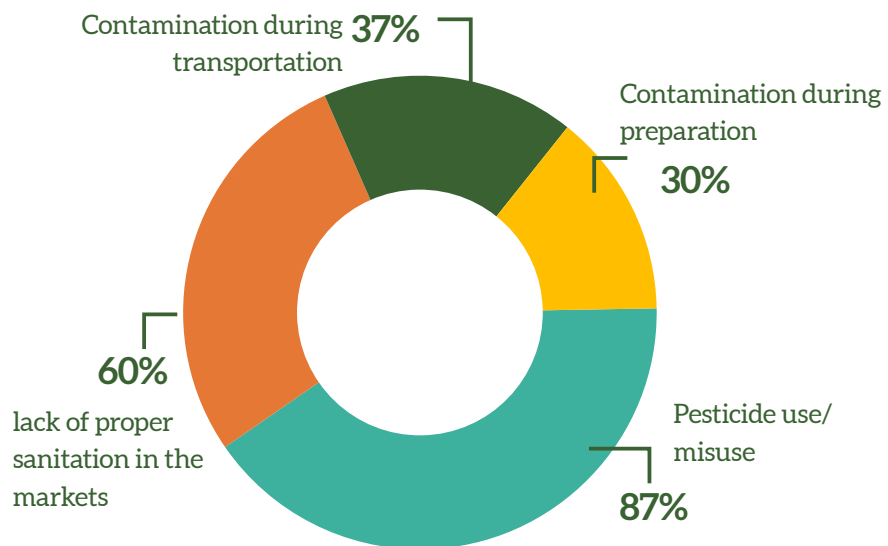


Further, more than 67% of the respondents felt that their food markets did not guarantee food safety. The level of trust in food markets varied significantly depending on the food source or type of market. Consumers who bought from big supermarkets felt their markets were safer, followed by those who bought from local supermarkets. Consumers who bought from their local open-air markets had the least confidence in the safety of their products, followed by those who bought from street vendors (mama mboga). Kirinyaga had the highest level of consumer confidence in food markets at 44%, followed by Kajiado (32%) and Nairobi (30%).

2 <https://consumergassroots.org/wp-content/uploads/2021/06/Food-Safety-Program-Kenya-Digital.pdf>

# 9/10

consumers expressed greater concern about food safety in their country.



The safety of food is one of the fastest rising global concerns. With increased pressure to produce more food to feed a rapidly growing population, food safety risks are increasing from production to distribution of fresh and processed food. There is a connection between the form of agriculture practiced and food safety issues. In Kenya, more emphasis is given to industrial agriculture which relies on chemical inputs and monoculture. This exposes consumers to the risk of pesticide residues. In addition, the level of contamination due to a failed distribution and post-harvest management system is also a concern. Connected activities such as food processing and retailing, have been identified as weak links where the quality and safety of processed foods have been questioned in various media exposés<sup>3</sup>. With the challenges facing food systems today, there is increased focus on finding alternative forms of food and farming that will guarantee sustainability, efficient production, and consumer health and safety.

## What Does Agroecology Offer?

In the context of growing concern for more healthy food systems and food production, agroecology as a sustainable farming system approach is gaining greater traction. The agroecological approach to farming and the food system offers various remedies to food safety issues. These include:

### → Reduced use of chemical pesticides and antibiotics

High residues of agrochemicals used in production have been blamed for various health problems. By using locally available natural remedies for pests and diseases, agroecology significantly reduces the dependence and use of agrochemicals, which remain the biggest food safety risk. It also fosters an environment where chemical pesticide use is reduced, and the same happens to antibiotics used in animal production.

<sup>3</sup> See Kenya's 'contaminated sugar' row: What we know. Available: <https://www.bbc.com/news/world-africa-44550813> and Kenyans buying meat laced with chemicals from supermarkets. Available: <https://businesstoday.co.ke/kenyans-buying-meat-laced-with-chemicals-from-supermarkets/>

Agroecological farming practices such as crop diversification also help to reduce the risk and severity of pest and disease attacks, implying a reduced to zero use of synthetic chemicals.

→ **Shorter chains, then traceability**

One important principle of agroecology is that the chain from producer to consumer should be as short as possible. This reduction builds transparency along the chain and makes traceability a possibility. In the agroecological market arrangement, the producer and consumers are encouraged to know each other, creating a better trust and accountability platform between the two parties.

→ **Improved livelihoods and food self sufficiency**

The agroecological approach contributes to food security through increasing diversity in production,

and, hence improving diets. The approach is based on a bottom-up process where solutions are based on the local problem and the opportunities available. Further, it also contributes to food sovereignty since it places the farmer and the household members at the priority of decision-making on food production. It also helps the farmer in being more independent as opposed to depending on the production inputs and other technology transfers for their production. For instance, the reliance on external farm inputs such as seeds as opposed to farmers' self-produced and locally sourced inputs. The reduced reliance on external inputs also saves the farmer significant amounts of money which can be directed to other priorities, not to mention the peace of mind of being out of debt.





# Nutrition and Food Diversity

## Nutrition Issues in Kenya

Food functions can be categorized into social, psychological, and physiological. Food's physiological or life-supporting function is the most basic and important to our bodies. In supporting human life, food offers nutrients to the body for its functions such as energy production, growth, development, building and maintaining a strong immune system. The ability of food to provide these nutrients in an accessible way is therefore a very important aspect. Food's social and psychological relate to aspects of warm relationships, acceptance, belonging, accomplishment, love, self-fulfillment and a sense of security.

Inadequate nutrition manifests itself in various ways amongst different groups depending on their age, stage of life and specific nutritional needs. Key indicators of lack of proper nutrition include malnutrition which is more pronounced in children than adults. Other nutrition-related complications such as anemia, especially amongst adolescent girls and women of reproductive age, are also indicators of poor nutrition.



Key indicators of lack of proper nutrition include malnutrition which is more pronounced in children than adults



While there are several drivers of poor nutrition, including health and sanitation and the effect of culture on food choices, lack of diversity in the foods consumed is the main driver of poor nutrition. Kenya's varied geographical and agroecological conditions, as well as its diversity of people, communities and cultures, lay a foundation for a country with a rich diversity<sup>4</sup> of crops, livestock and associated biodiversity. However, the knowledge and traditions regarding food and farming practices are slowly fading to pave way for the production and consumption of a few staples under monocultures. This production regime has been encouraging overreliance on external inputs with "promised better returns for farmers" and "food for all."

At a political level, agricultural development policy pushes for an industrial farming and livestock breeding model. This model threatens the sustainable use and conservation of biodiversity for food and agriculture. It does so by encouraging farming practices that are not eco-friendly. The approach bypasses local knowledge of local biodiversity and its functioning; and the resident farmers and rural communities. Government and private sector-led initiatives to increase agricultural production mostly follow a highly industrial approach.

4 Diversity in this context refers to both at species and intra-species levels i.e. types to varieties/breeds

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More than

**30%**

of Kenyans living in rural areas have a dietary diversity score of **less than four** from a possible **12 food groups** identified by the Food and Agriculture Organization (FAO) and the World Food Program (WFP)



This approach effectively locks most smallholder farmers and households from profitably participating in commercial farming using eco-friendly practices, given the prohibitive costs and unfair standards.

Dietary diversity<sup>5</sup> in Kenya is on the decline. Based on three studies conducted in Meru<sup>6</sup> (high and low rainfall areas), Kitui<sup>7</sup>, and Northern Kenya<sup>8</sup>, more than 30% of Kenyans living in rural areas have a dietary diversity score of less than four from a possible 12 food groups identified by the Food and Agriculture Organization (FAO) and the World Food Program (WFP). Studies have confirmed a strong correlation between low dietary diversity and malnutrition, obesity and other nutrition deficiency-related conditions (FEWSNET, 2013). Kenya's dietary diversity decline is largely fuelled by a continued focus on a few mainstream foods. Lack of support for producing non-mainstream foods such as wild foods, pulses, roots and tubers, and oil crops has reduced their production and supply.

## What Agroecology Offers

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### → Production of diverse foods

At the farm level, agroecology practices and principles promote the production of diverse foods. The principles of biodiversity and economic diversification encourage the production of a wide range of agricultural produce, from crops, livestock and tree products. This diversification ensures the availability of a diverse range of food products from the farm level. This diversity is extended in the local markets, where consumers who are not necessarily involved in production can access these foods.

### → Strong local markets

By ensuring connectivity between producers and consumers, agroecology encourages the establishment of strong local food markets. With markets built around a strong connection between producers and consumers, there is an immense opportunity to instill demand-driven production of safe, nutritious, and diverse foods. With an adequate flow of information between producers and consumers, there is a great possibility of adjusting production and consumption based on nutrition, dietary needs and production seasons.

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5 Food diversity: average number of food groups or items consumed within a household over a period of 24 hours. (Gichuhi, Wanjiku, & Wakibi, 2010)

6 Study in Meru: The relationship between agricultural biodiversity, dietary diversity, household food security, and stunting of children in rural Kenya (M'Kaibi, Nelia, Ochola, & Plessis, 2016)

7 Gaps in food security, food consumption and malnutrition in households residing along the baobab belt in Kenya (Momanyi, et al., 2019)

8 Study in Northern Kenya: Comprehensive Food Security and Vulnerability Survey: Summary report Kenya 2016 (VAM-WFP, 2016)

Such strong local markets are also immune from distribution chain disruptions such as those witnessed during the Covid 19 and the Ukraine war.

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→ **Protection of the diversity of seeds and animal breeds**

Agroecology puts a strong emphasis on biodiversity conservation. This assertion not only facilitates the production of diverse foods in the present but

also builds and maintains a strong basis for dietary diversity in the future. The diversity of foods to choose from has been decreasing over time. The biggest losers are indigenous foods due to over-emphasis on a few varieties and breeds at the expense of more nutritious, resilient plant varieties and animal breeds.



# Food Price Stability

## Stability of Food Prices in Kenya

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Increased food prices  
above **10%**  
of the base price can  
hugely impact consumers  
who spend **more than a  
quarter** of their income  
on food due to high  
budget constraints.



Food prices are determined by many factors locally, regionally, and globally. Food price determinants range from production factors, marketing and distribution, peace and stability, and overall economic factors. While the overall trend is that prices go up in the long run, fluctuations can include reductions in the short term. Lack of stability generally negatively impacts how consumers budget for and access food. Increased food prices above 10% of the base price can hugely impact consumers who spend more than a quarter of their income on food due to high budget constraints.

In the past decade, Kenyans have experienced noticeable spikes in prices for food commodities, including both processed and unprocessed items, cutting across imported and domestically produced. Public outcry has often followed these variations as they usually significantly affect Kenyan consumers' ability to purchase/access food. Increased dependence on food imports has significantly contributed to vulnerability to global shocks. The increased shift in consumer trends to more consumption of food items not grown locally has greatly contributed to increased reliance on food imports.

Today, the world has become a global village and hence there is a lot of interconnectedness between countries. This shows that any kind of changes will be felt in one way or the other. For instance, the Russia-Ukraine war has had a huge impact on the prices of food commodities in Kenya, including key food items such as wheat flour, cooking oil, and rice imported from other countries. Further, the onset of COVID-19 pandemic also demonstrated that over-relying on food imports was bad for Kenya as prices of food commodities shot up globally as supply lines were affected. With several precautionary measures by different countries as a result of the covid pandemic such as the ban on the exportation of major food items, the country felt the effect. These two examples demonstrate that the Kenyan consumer is overly exposed to external shocks both regionally and internationally -- that affect the production and supply of food.

At local level, different communities are also affected at different levels by price fluctuations in locally produced foods. This effect is sometimes a result of national and county politics, regulations, access and prices of farm inputs, transportation and logistics, amongst other factors. These shocks affect consumers even more due to the lack of alternative foods and channels to access them.

## What Does Agroecology Offer?

### → Lower cost of production and thus lower cost of food

Agroecology lowers production costs in the long run with reduced dependence on external inputs in food production. This reduction is achieved through the recycling and reuse principle, that encourages use of locally available resources and production through a circular economy model where wastes from one enterprise are used as material for the other enterprise(s). Examples of this approach include using natural soil fertility management techniques both green and farmyard manure in farming; using natural pest, weed, disease control and management practices, water recycling and constituting homemade feeds for livestock using crop wastes.

### → More efficient food market arrangements

The agroecological market approach ensures fairness, transparency, and equity for all players through active social participation. It reduces the need for long-distance transportation, processing, and refrigeration by encouraging strong local markets. For example, direct purchase from producers cuts the cost of refrigeration and storage and even processing of perishable foods, while doing away with middlemen. Overall, through this social participation process, producers can meet, on a timely basis, the food needs and demands of local consumers. Participation of local food producers and consumers in decision-making reduces food wastage and losses due to rejection in the markets because of better appreciation of production processes, safety and quality requirements by both parties. Social participation mechanisms that

increase trust amongst farmers also help in reducing certification costs, which are increasingly gaining momentum, especially in the organic farming sub-sector. Community participatory certification mechanisms reduce the all-expensive certification processes needed to certify safe, nutritious food.

### → Creation of stability through availability of options

By adopting agroecology practices, the diversity of products implies that consumers can appreciate a wide range of foods in their diets. This increased food diversity cushions consumers against price shocks that might affect a few food products as there will be alternatives in the market. The conversation is already happening on starch foods with calls to broaden the options for starch-rich foods to cushion the Kenyan consumer from market and climate change shocks that affect maize, which is the most important source of starch in the country. The principle of diversification is engrained in the agroecology approach and could better guide the transition through sustainable diversification.

### → Food sovereignty

By encouraging the self-determination of local people in their food production and organization of their food systems, agroecology helps build food sovereignty for all people. The use and reliance on locally available inputs for production rather than on an increasingly unpredictable global market ensures that farmers have control over decisions that affect the food system. Producing diverse food products in the country also helps cushion consumers from global food crises.



# Inclusive Markets

## Context

With increased commercialization, there is immense interest in consolidating and controlling food markets. High commercial interests have adversely changed the formats and arrangement of food markets globally. The negative impact is that food marketing and trade, both globally and locally, are increasingly monopolized. A few powerful people and institutions have more power than most of the actors and control what is traded, what is available, and at what prices. This kind of arrangement also influences what is produced, how it is produced, and where it is produced.

Producers and consumers in the current market system are not adequately connected. This disconnect means that producers continue to lack adequate information on consumer needs and trends. This state denies producers the ability to align themselves with changing consumer trends and hence they remain only to be guided by intermediaries who do not openly share information to maintain an upper hand in their dealings with producers.

Due to inadequate access to market information, consumers and producers have a lower advantage than the other value chain actors. Producers do not earn enough for their work, while consumers are forced to pay more than the actual price for food. For food items traded across countries, it is even more difficult to have open conversations about price mechanisms and producer incomes. A strong collaboration mechanism is needed to foster a holistic and inclusive conversation about food markets. This mechanism should be able to bring together both producers and consumers and eliminates the current barriers to fair and inclusive participation of all actors in food markets.

In addition, supermarkets' requirements for uniformity, consistency, regular supply, and large volume chains keep small producers from engaging

in these markets. The impacts of structured supply chains are raising concerns about efficiency and equity. Despite the "supermarket revolution" and the rise of modern global food supply chains, local food systems play a critical role. Food losses have also been experienced throughout food value chains in developing countries, owing to managerial and technical limitations in harvesting, storage, transportation, processing, packaging and marketing. This loss is usually caused mainly by consumer behavior, policies and regulations that address other sectoral priorities. For example, the quality of a particular food item is usually judged mainly by its appearance, on whether it is more appealing to the eye or not, which in turn locks out smallholder farmers growing organic food.

## What Does Agroecology Offer?

### → Fair market systems and practices

Agroecology employs the principle of fairness in the interactions of all actors in the food system. In terms of markets, agroecology promotes practices that encourage fair and equitable distribution of profits for all food system actors commensurate with their contributions and efforts at different levels. The principle of fairness supports dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, employment and respect of intellectual property rights.

### → Equitable participation

Agroecology promotes the equitable participation of all actors in the food system, including small-scale producers and traders.

This resolve is anchored under the principle of participation that champions food systems where all actors have the enabling environment and platform to not only effectively participate in food systems but also contribute to decision making and influence positive change in the food system. This approach encourages social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems. Through agroecology, consumers have a better platform to articulate their needs and concerns in the form of food and farming systems and be part of the solution to shaping a form of food and farming system that works best for them.

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→ **Transparent food supply chains**

Agroecology approach to markets offers more transparency to all actors, including consumers whereas industrial agriculture approach fails to bring on board consumers into the food systems conversations, leaving consumers guessing about important aspects of their food. Agroecology further provides the recipe for building transparent food systems that allow consumers to understand and interrogate their food systems, while giving their inputs in important decisions affecting the food they consume.





# Food Culture Promotion

## Context

Food culture is the collective habits, rituals, beliefs, values, lifestyle and practices around producing, procuring and in-taking food.

- It shapes the way people live and feel.
- It contributes as well as affects their identity and other aspects of culture.
- Food culture is an important aspect of the social function of food as it helps define people and reinforces connections at family, community, society, nationality or even regional and global levels.

At the same time, food cultures are not static. For instance, the eating habits of human beings have evolved and the rapid erosion of food culture is of great concern.

The erosion of food cultures over the past three decades supersedes any level of change over the past 200 years. This observation is a clear indication that there are very specific factors that are pushing this change in our current society. One of the factors is increased interactions between different cultures; be it through information technology systems, which are now abundant especially in urban areas, or through actual physical interactions where people travel and meet. In these interactions, societies considered more superior or sophisticated end up transferring their food cultures to their counterparts,

some of which might not be healthy. Examples include French fries, pizza, sausages, fried chicken, bread and sandwiches, among other food items from the US and Europe that have slowly penetrated countries worldwide.

While abandonment of one's food culture is mainly assumed to be an individual's and society's collective choice, various structural, economic and policy tools indirectly create this change. Due to interest in designing food and farming systems with a focus on global trade, local production is not supported. Through these producers are encouraged to produce "commercially" with a limited focus on traditional foods. Urbanization also plays an important role where more people in urban areas are embracing eating in restaurants than preparing food at home. Major actors in the hospitality industry including international franchises have become a big attraction for the urban middle class, influencing consumer food preferences. Eventually, these food choices are transferred to the rural populations, changing people's food choices and what they identify with. For instance, the young people who come to identify pizzas as their favorite food, their children might have more of that pizza than anything else, and the next generation might then find traditional foods strange and foreign.

Through structured investments, various attempts to build strong traditional food value chains and compete with global franchises have been made. Some of the hotels established in Nairobi are either struggling or have been closed.

These cases are due to a lack of strong government ownership and enabling policy environment to support the businesses. The businesses' access to requisite financial muscle and match their competitors have been futile. Traditional food production is also not supported through policy and financing as there is no interest due to the local nature of its market and also the fact that this system is mainly sustained by smallholder farmers who are seen as "difficult to organize."

## What Does Agroecology Offer?

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### → Recognition

Food is cultural, and as the Swahili saying goes, mwacha mila ni mtumwa. An agroecological approach to food and farming systems strongly recognizes the place of food cultures in building strong, resilient food and farming systems. Agroecology supports healthy and culturally appropriate diets, ensuring food and nutrition security. It is also key in building strong agri-food systems that connect local consumption with local ecosystems and traditional knowledge.

### → Co-creation of knowledge

Co-creation, as one of the principles of agroecology, protects indigenous knowledge associated with farming and food. It gives space for nurturing local food cultures and questioning new or foreign food ideologies. Agroecological approaches value and strengthen the role and place of indigenous knowledge on food production, preparation, and consumption.

### → Supports the production of diverse indigenous foods

By supporting the production of diverse indigenous foods, agroecological farming practices enhance the availability of these foods in the market. These foods often adapt to local conditions, they are resistant to many pests and diseases and are climate change resilient. Agroecology thus helps keep the options for indigenous foods available for consumers in urban and rural areas.



# Environmental Conservation

## Context

Food and farming systems' impact on the environment is one of the most current public debates globally and is a source of unsustainability of current food systems. Evidence has continued to show that unsustainable farming practices affect overall environmental health.

The major issues revolve around soil degradation, water and aquatic life, and biodiversity loss. It is estimated that nearly 2 billion hectares of soil resources worldwide have been degraded. These include approximately 22% of the total cropland, pasture, forest, and woodland.

Globally, soil erosion, chemical deterioration and physical degradation are the important types of soil degradation. On biodiversity loss, the world has seen an average 68% drop in mammal, bird, fish, reptile, and amphibian populations since 1970<sup>9</sup>. The loss is caused by habitat destruction due to unsustainable agriculture and deforestation.

Agricultural practices contributing significantly to environmental degradation include poor land cultivation, high use of chemical inputs, and mono-cropping. Land degradation is also high in pastoral systems where overgrazing is the main driver. There have been concerns from the general Kenyan public on the impacts of high chemical inputs used in production and their environmental effects. Important components of biodiversity, such as pollinators have reduced in numbers, with this trend attributed to the use of toxic pesticides in the country.

Nearly  
**2 billion**

hectares of soil resources worldwide have been degraded. These include approximately 22% of the total cropland, pasture, forest, and woodland.



## What Does Agroecology Offer?



### Environmentally sustainable food and farming practices

Agroecology practices promote environmentally sustainable food and farming practices. All agroecology principles and practices align with conserving the environment and enhancing overall ecosystem health. And since agriculture depends on health ecosystems, adopting and promoting agroecology enhances agricultural productivity in the long run.

<sup>9</sup> <https://www.zsl.org/sites/default/files/LPR%202020%20Full%20report.pdf>

→ **Improved environmental and human health**

Agroecology reduces dependence on chemical inputs by supporting the use and recycling of locally available resources. This metric is also achieved through building collaborations amongst different elements and enterprises. Decreasing dependence on purchased chemical inputs reduces overall use and the negative impacts of chemical inputs on the environment. The overall effect is a healthier environment which translates into healthier lives for consumers.



# Rural Development

## Context

Rural areas in Kenya have always lagged regarding access to infrastructure and services due to disparities existing between urban and rural areas. This state makes urban areas attractive to private sector investment in services when considering incomes. This preference causes very slow growth and even stagnation in some places when it comes to development. Further, it creates a vicious cycle where development is inhibited. The lack of primary infrastructure makes it difficult to invest. Lack of investment and work opportunities means low incomes, making rural areas unattractive for private sector investment and causing outflow of important human resources.

Agriculture remains the biggest income earner in most rural areas despite the reducing direct participation of rural dwellers in this sector. Several studies on rural development and aspirations of rural people have continued to show that most people living in rural areas either lack the resources and knowledge to venture into farming, Sometimes they do not consider farming their main source of income or are just not interested in getting into farming.. A study<sup>10</sup> expounding on this question, concludes that there is a need to re-assess and appreciate the aspirations and different goals of the rural people.

Those engaged in agriculture and related activities have also faced numerous challenges. Among them are exploitative markets and a lack of access to services necessary to enhance the productivity and profitability of farming activities. The limited access means there remains a challenge to build sustainable, resilient enterprises, especially in the face of climate change. Rural food markets have remained a major

pain point for rural populations. Specifically, food prices for products not produced locally always sell higher in rural areas than in urban areas. This fact, coupled with lower prices paid for farmers' produce, creates a situation where producers in rural areas increasingly find it difficult to meet their food needs, hence the contradictory situation of hungry farmers<sup>11</sup>.

## What Does Agroecology Offer?

### → Promotes rural development

Agroecology promotes strong local food systems that prioritize producer community's food and nutrition security before the external market. This state is achieved by emphasizing diversification in farming and strong local markets. The net effect is that producers who support rural economies can retain as much of their income as possible and overall community income retention, which is important for wealth creation and to sustain their livelihoods in the face of an unstable market.

### → Supports fair and transparent markets

Through fair and transparent markets, agroecology addresses some of the current bottlenecks that affect producer participation in food markets. Through transparent sharing of information on prices, consumer trends and consumer preferences, agroecology ensures that all actors are adequately equipped to exercise their agency.

10 <https://nation.africa/oped/opinion/solve-paradox-of-hungry-farmers-/440808-4495154-u9vixd/index.html>

# Food Sovereignty

## Context

Food Sovereignty is the right of individuals, people, communities and countries to define their own agricultural, labor, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances.

Food sovereignty is about rediscovering the connections between how your food is grown, who grows it, and how they grow it. The best way to protect people's food security and ensure everyone has enough food to eat is to support local farmers. 100 years ago, nearly everyone in our country knew how to grow food. Today there are still many farmers who don't know the work and knowledge behind growing food. These changes have been experienced in the last century. Nonetheless, we've learned more about where our foods come from, what happens before we get them on our plate and how much more nutritious they can be when grown in a particular way and place.

Kenya has been importing food from other countries to fill the gap experienced in the production of staple foods such as maize, rice, and sugar<sup>12</sup>. Reliance on imported food means that Kenya does not have control of the food system as these are often controlled by a few multinationals and a few countries. Food sovereignty encompasses a scenario where a country produces enough local food to be distributed and consumed locally. Kenya has a high level of food imports that affect the production and consumption of local food. These imports are cheaper than the local food. Importing other items into Kenya should not affect the production or consumption of local products; it should not depress prices for foods produced domestically.

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Food sovereignty encompasses a scenario where **a country produces enough local food distributed locally, and consumption is also locally.**



## What Does Agroecology Offer?

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### → Food sovereignty

Kenya's traditional food is still primarily grown by a few small-scale sustainable farmers and family farmers. The food is sold, processed, resold and locally consumed. One can make an impact on things by making different choices, for example, a choice of what you eat from the variety produced; and that is what food sovereignty offers.

12 <https://www.trade.gov/country-commercial-guides/kenya-agribusiness>

Consumers are entitled to choose which food production policies best suit their socially, economically and culturally acceptable needs. This shift has helped restore traditions for indigenous people, reconnecting them with local lifestyles and livelihoods in culture.

### → Improved purchasing power, locally

Consumers are offered an opportunity to protect and control domestic production and market, therefore preventing the dumping of cheaper food products from imports and unnecessary food aid programs from foreign countries into their domestic market, enabling them to solve issues of hunger and health by purchasing their own healthy, fresh foods locally. This change leads to short food chains and webs, such as local production, consumption and domestic market. The local purchasing power allows consumers to access food products that are culturally appropriate to their unique wants. It allows the consumer to receive increased crop diversity and indigenous food and vegetables, hence safe, nutritious, and culturally appropriate food, sustaining themselves and their societies.

### → Safe, nutritious food

Consumers can buy food products that are safe to eat and nutritious. They also have access to healthy foods from the local market, making it easier for them to make good choices in what they're eating. Achieving food sovereignty ensures consumers get a diverse range of options when purchasing their food. This ability is important because it helps get all the necessary nutrients daily while providing opportunities for exploring new tastes and flavors.

### → Access to traditional and local seeds

Consumers have access to traditional and local seeds from the local farmers and smallholder sustainable farmers who are the majority producers of staple foods in Kenya. They grow various plants by selecting the seeds to be planted from what is to be consumed. Farmers practice seed saving, which is passed down from generation to generation. This art of saving, use, exchange and selling seeds is known as seed sovereignty. It has given consumers seed access free from genetic modification (GMOs), thus not depending on global seed systems.

### → Seed sovereignty

Seed sovereignty means farmers' control over the seeds they use, in their diversity and quality to maintain a sustainable farming and food system. The consumer has access to dozens of traditional crops and seeds that used to be locally available, but due to genetic modifications of organisms and some external factors, they are either scarce or facing extinction. Seed sovereignty ensures the diversification of traditional crops and seeds, making them accessible to the consumer. Food sovereignty draws its light from seed sovereignty. In a nutshell, seed sovereignty<sup>13</sup> is the farmer's right to save, breed, and exchange seeds and access diverse open source seeds that can be saved – and not patented, genetically modified, owned or controlled by emerging seed giants. The farming communities have preserved and protected the diverse genetic resources (seeds) developed by them throughout their history, ensuring continuity of production of locally, socially, and economically acceptable food.

13 <https://www.greenpeace.org/africa/en/blogs/11658/how-to-guide-5-seed-sovereignty-and-saving/>

# Climate Change

## Context

### Impacts of climate change

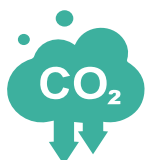
Climate change is the long shift in temperature and weather patterns. Agriculture greatly depends on favorable temperature and precipitation for a good harvest. The shifts in climate change lead to disasters such as heavy rainfall and floods, tropical storms, extreme temperatures and drought threatening food security globally. Unsustainable agricultural practices contribute greatly to climate change through the emission of Greenhouse Gases. Methane is emitted through animal waste like urine, and from poor handling of animal waste. Nitrous oxide is emitted through nitrogen-based fertilizers, while CO<sup>2</sup> is emitted through the clearing of forests and land that acts as carbon sinks to create space.

Climate change indirectly affects crop pests and diseases in that rise in CO<sup>2</sup> level causes mutation and resistance of the pests to control measures like applying pesticides, while the warmer temperatures means pests spread to areas which used to be cold. An increase in CO<sup>2</sup> levels also affects the nutrition composition of some crops<sup>14</sup>, i.e., high CO<sup>2</sup> levels lead to low mineral contents of the crop, low protein, and high carbohydrates, leading to malnutrition among the vulnerable communities. High precipitation from high rainfall and snow thawing lead to flooding of agricultural lands. This process may cause high salinity leading to the destruction of crops and total crop failure in some regions, causing low food supply to markets and higher prices. Lastly, it causes a change in water availability, with dry areas like Northern Kenya experiencing water and pasture scarcity for their livestock, affecting their productivity. The coastal areas experience extremely high rainfall that leads to floods and saltwater intrusion.

Global climate change affects food security by limiting food availability, access, nutritional quality, and utilization. Limited food supply causes a spike in food prices and increases poverty among the local community who depend on agriculture as their source of livelihood. Smallholder farmers should adopt sustainable farming systems to mitigate these impacts of climate change to achieve food and nutrition security.

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Climate change indirectly affects crop pests and diseases in that **rise in CO<sup>2</sup> level causes mutation and resistance of the pests to control measures**



14 <https://www.cimmyt.org/news/pests-and-diseases-and-climate-change-is-there-a-connection/>



## What Does Agroecology Offer?

### → Builds resilience to climate change

Agroecology fosters climate change adaptation, mitigation, and resilience. Farming techniques based on Agroecology approach such as crop rotation, mulching, intercropping, integrated pest management, integrated crop-livestock management, agroforestry, recycling and reusing of farm inputs, and improved water management through water harvesting and storage help in the mitigation of climate change. Farmer adoption of these farming systems makes them resilient to climate change impacts. For instance, recycling and composting reduce the emission of Greenhouse gases mainly from fertilizers and spraying of farm chemicals, agroforestry is a sink for emissions and is a source of fuel and food, while integrated pest management can address climate-induced pest outbreaks. Integrating crops and livestock forms interactions between crop and livestock, contributing to high crop yields and reduced methane gas emissions into the atmosphere.

### → Encourages efficient natural resource use

Water harvesting and diversified crop-livestock integration ensure sustainable use of natural resources closing the ecological cycles such as the nutrient and water cycles. Mulching and cover cropping retain soil moisture thus conserving water. By embracing these practices, farmers become resilient to drought, stabilizing their produce and market price for farm produce. Also, Agroecology builds healthy fertile soil through mulching, cover cropping, and minimal tillage, preventing soil erosion and mineral leaching. It reduces the need for synthetic fertilizers, pesticides and other farm inputs by using available farm inputs, reducing the producers' production cost and retaining fair food prices for the consumers.

### → Fosters holistic approaches

Agroecology provides resilience to the impacts of climate change by encouraging crop diversity and diversified farming practices that are ecologically friendly. Having a variety of food crops for consumers to choose from reduces the risk of total crop failure caused by unfavorable weather conditions. This setting contributes to achieving the global goal of food security and healthy nutrition for all. Also, through Agroecology, farmers are encouraged to use locally available seeds that are well adapted to the region, preserving and conserving the seed from extinction. Crop diversity increases agricultural productivity through diversified flowering plants that attract insects for pollination. Finally, Agroecology brings the community together where they can share knowledge – both scientific and traditional, discuss ways in which they can strengthen food networks at the local level, and get solutions on how they can adapt and mitigate climate change to enable food security and nutrition.



# Women and Gender Roles

## Context

Women make essential contributions to the agricultural and rural economies. Their roles vary considerably between and within regions and over time these roles have been changing in many parts of the world. The role women play in agriculture and rural society in Sub-Saharan Africa is fundamental to agricultural and rural development. Often women manage complex household chores and pursue multiple livelihood strategies, particularly those pertaining to food security at the household level. These activities include producing crops, processing and preparing food, working for wages on other agricultural farms and caring for family members. Such roles or activities may not be defined as “economically active employment” in most accounts,

but they are essential in terms of the well-being of the household members.

Traditionally, women performed certain tasks such as seed saving, while men performed others like plough operations. Such divisions differed across regions depending on their cultural values. For example, in certain cultures, the plough was only used by men and women were expected to remain at home carrying out other work. However, today, as cultures have changed, such roles have also shifted, women's roles in farming are increasing and there is a general underestimation of their work in development policies.

## What Does Agroecology Offer?

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### → Supporting women as leaders

Agroecological approaches to rural development give women opportunities to improve their economic conditions, share their ideas in public spaces and articulate their solutions. Hence women empower themselves to participate in decision-making and influence policy. Learning from each other and sharing is at the core of agroecology. Additionally, agroecology inspires creativity is a more rewarding way of farming, and may help in strengthening women's creative skills and collective work.

### → Encourages biodiversity, traditional knowledge, and specialized work

Agroecology plays a key role in the improvement of the functional biodiversity of a farm. It also encourages local seeds and crop varieties suited to the local climate and associated with the traditional peasant knowledge. It also gives a greater role to women, who are traditionally the keepers of seeds and traditional knowledge within the community. Further, because agroecology involves diverse tasks and knowledge women often have a more diversified role in the household economy as opposed to the conventional monoculture chemical farming.

### → Promotes equity

As a bottom-up approach agroecology places a strong emphasis on human and social values in contributing to the improved livelihoods. These values include equity, dignity and inclusion of all. Through encouraging autonomy and adaptive processes to manage agroecosystems, agroecological processes empower people and communities to overcome hunger, poverty and malnutrition while promoting human rights.





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