NATIONAL AGROECOLOGY FOR FOOD SYSTEM TRANSFORMATION STRATEGY, 2024 - 2033

DRAFT SIX

Ministry of Agriculture and Livestock Development

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Foreword

Agricultural growth and development is crucial for Kenya's overall economic and social development. Agriculture contributes approximately 25% directly to GDP and 60% of export earnings. Further, 80% of the rural population rely on agriculture as their primary source of livelihood. Agriculture therefore retains significant potential in addressing pro-poor growth and development and improving the standard of living of Kenyans by substantially reducing the number of people affected by poverty and hunger as outlined in the Sustainable Development Goal 1 & 2.

The sector continues to play a pivotal role in the realization of economic growth and poverty reduction through contribution in food and nutrition security; raw materials for agro-industry; employment creation; and foreign exchange earnings. It remains a major economic pillar that addresses the Vision 2030 agenda. The Government of Kenya recognizes the important role the application of agroecology approaches can play in transforming agriculture into sustainable food production system in the face of emerging challenges of climate change and climate risk management. The Agricultural Sector Transformation and Growth Strategy 2019 -2029 (ASTGS) addresses the challenges in the agricultural sector and recognizes that this sector can deliver the 10% annual economic growth that is envisaged under the economic pillar of Vision 2030.

Cognizant of this, the Kenya Kwanza government under the Bottom-Up Economic Transformation Agenda (BETA) has prioritized agriculture as one of the 5 pillars of our economic recovery plan. Thus, there is need to embrace the sustainable production systems to enhance productivity in the realization of climate risks mitigation and adaptation measures to ensure increased productivity, incomes, food and nutrition security for all. The Government has identified priority agricultural value chains earmarked for increased resource allocation among them; tea, coffee and edible oils that are grown under sustainable management practices targeting local and export markets.

The National Agroecology for Food System Transformation Strategy, 2024 - 2033 provides a coordination mechanism for all the actors in agroecology space in transforming food and agricultural systems in an integrated manner through holistic and long-term solutions. This includes an explicit focus on social and economic dimensions of food systems with a strong focus on the rights of women, youth and indigenous communities.

Hon. Mithika Linturi
Cabinet Secretary
Ministry of Agriculture and Livestock Development

Preface and acknowledgement

Realization of food and nutrition security as envisaged in the Government key policies calls for increased agricultural productivity. Currently, agricultural production is negatively affected by constraints that include: increasing population pressure; unsustainable land and environment management practices; dependency on unreliable rainfed agriculture; inaccessible and high input costs; low technology adoption; inadequate access to markets among others. There is an increasing demand for safe, healthy and nutritious food, combined with a growing global population and the escalating impact of climate change and disasters, are challenging the current paradigm of food production and consumption.

Over the past decade, Kenya has been experiencing successive impacts of climate change resulting to substantial socio-economic losses. Drought and floods are the main climate hazards, negatively impacting lives and livelihoods, with human health increasingly being at risk. Climate change's impact on food security relate not just to food supply, but also to food quality, food access and utilization and the nutritional properties of some crops due to post-harvest losses. Climate change has also resulted in frequent severe, erratic weather patterns, emerging pests and diseases that calls for more attention and efforts in terms of investments in the agriculture sector in terms of resources and capacity enhancement to transform the current food production systems to a more sustainable and resilient food production system.

Agroecological innovations are based on the co-creation of knowledge, combining science with the traditional, practical, and local knowledge of producers. By enhancing their autonomy and adaptive capacity, agroecology empowers producers and communities as key agents of change. There exist many stakeholders in the agroecology space each handling various activities geared towards sustainable production systems. Currently the space is uncoordinated with duplication of efforts by the addressing challenges faced by the current food production systems. To address the above effectively and efficiently, agroecology has to be dynamic, well-coordinated and a never-ending process.

This National Agroecology for Food System Transformation Strategy, seeks: to streamline, rationalize and put in place a system that is consultative, efficient and effective and takes into account economies of scale to not only use the current scientific, human and physical capacities but also position Kenya as a hub for agricultural food products that are organically produced through sustainable approaches for increased local and export market share; and, to create an enabling environment for a vibrant agroecology industry that contributes to the overarching national policies of economic growth and wealth creation, poverty reduction, gender equity, increased productivity, improved livelihoods, environmental sustainability, and eventually sustainable development. In addition, the National Agroecology for Food System Transformation Strategy seeks: to promote an innovative, commercially oriented, and modern agricultural sector; and, to facilitate the development of sustainable production systems for crops, livestock, and fish in line with the aspirations of the BETA Agenda, Vision 2030, the ASTGS and the SDGs

The development of this strategy was highly consultative and interactive with the views of key stakeholders informing the process. In developing this Strategy, the Ministry of Agriculture and Livestock Development has benefited immensely from the expertise of individuals, groups, and organizations who I wish to appreciate for their invaluable input to the strategy.

Mr. Paul Ronoh
Principal Secretary
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Mr. Jonathan Mueke
Principal Secretary
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Executive summary

There is increasing recognition that food systems in Kenya – i.e. the way we produce, distribute and consume food – is not sustainable and they are therefore unable to sufficiently meet the needs of our growing population. While agricultural output grew by 10% from 2018-2022, the burden of malnutrition continues to persist. The proportion of the population with severe food insecurity increased from 15% in 2016 to 28% in 2022, one in five children are stunted while one in four women are anaemic. Worse still, Kenya's food system is heavily impacted by global climate change while also contributing to a larger share (over 60%) of GHGs and biodiversity loss. The intensity of extreme weather events including droughts, heavy rains and floods have worsened over the years with serious negative effects on food security and the ecosystems.

The need to transform Kenya`s food system has been recognized through the development of country`s Food System Transformation Pathway Plan. The transformation aims to make food systems to be (i) healthy and nutritious, (ii)inclusive, enabling sustainable livelihoods for all stakeholders; (iii) environmentally sustainable, and (iv) resilient. This plan is anchored on the various international commitments including UN Food Systems Summit (2021), UNFCCC COP 27 and CBD COP 15. These frameworks recognize agroecology as an approach to facilitate a transition towards more productive, sustainable and inclusive food systems. Agroecological approaches on the other hand provide ways of harnessing ecosystem services and natural processes in a productive manner. They include; organic agriculture, agroforestry, regenerative agriculture and permaculture. The overall goal of the National Agroecology for Food System Transformation Strategy is to promote a sustainable transformation of the food system in Kenya to ensure food security and nutrition, climate resilient livelihoods and social inclusion for all.

The National Agroecology for Food System Transformation Strategy has identified five challenges facing our food systems. First, the country has fragile agri-food systems characterized by declining productivity in both crop and livestock, degradation of land, water, soils, and other ecosystems supporting agricultural production. Second, limited access to and consumption of safe, diversified, and healthy diets leads to food insecurity and malnutrition. Third, there is a weak policy environment and incentives for supporting agroecology transitioning and scaling up. Fourth, there is limited integration of agroecological approaches in research, curriculum, and practice. Last, gender and social inequalities are driven by the uneven distribution of resources and power leading to the marginalization of smallholder farmers, indigenous communities, women, and youth.

To address these constraints, this strategy has outlined five strategic areas to be addressed by actionable strategic actions to stimulate agri-food system transformation. These include, (i) Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches, (ii) Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all, (iii) Create an enabling environment and incentives for agroecology transitioning and scaling up (iv) Strengthen research, innovation, and training, to foster co-creation, and co-learning on agroecological approaches and Enhance social equity, inclusion and participatory governance in the food system.

The implementation of the strategy will be spearheaded by an Agroecology Strategy Implementation Summit comprising of departments within the relevant national ministries, Council of Governors, farmers' association and private sector actors. The coordination of the strategy implementation will be led by the Intersectoral Forum on Agroecology and Agrobiodiversity (ISFAA) National Technical Committee on Agroecology at the national level while at the devolved level, a Technical Working Group will be established within CASSCOM.

Definitions of terms

Agroecology:	Agroecology is an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.
Food System:	The food system includes all processes, infrastructure, and actors involved in all aspects of feeding a population
Healthy and safe diet:	This a diet that consists of adequate intake of fruits, vegetables, legumes; less energy intake from free sugars and fats; and that the food is not contaminated with potentially harmful bacteria, parasites, viruses, toxins and chemicals
Sustainable consumption:	Refers to the need to address under-consumption on one hand and changing consumption patterns among consumers in developing countries

Abbreviations and Acronyms

ABS	Access and Benefit Sharing
BETA	Bottom-Up Economic Transformation Agenda
CIDP	County Integrated Development Plan
CASSCOM	County Agriculture Sector Steering Committee (CASSCOM)
CBD	Convention on Biological Diversity
CECMs	County Executive Committee Members
CGs	County Governments
GDP	Gross Domestic Product
FAO	Food and Agriculture Organization
FLW	Food Loss and Waste
GHGs	Greenhouse Gas Emissions
HPLE	High-Level Panel of Experts
IPCC	Intergovernmental Panel on Climate Change
KEPHIS	Kenya Plant Health Inspectorate Service
MoALD	Ministry of Agriculture and Livestock Development
MTP	Medium Term Plan
NDC	Nationally Determined Contribution
NSAs	Non State Actors
PES	Payment for Ecosystem Services
PESTEL	Political, Economic, Social, Technological, Environmental, and Legal
R & I	Research and Innovation
SSA	Sub Saharan Africa
SDGs	Sustainable Development Goals
SMEs	Small and Medium-sized Enterprises
SWOT	Strengths, Weaknesses, Opportunities, and Threats

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Chapter One: Background

1.1 Agri-food system context in Kenya

Kenya is a lower-middle-income country, the largest economy in East Africa with a Gross Domestic Product (GDP) of KES 13.37 trillion in 2022 (Republic of Kenya, 2023). Agriculture remains the dominant sector accounting for 21.2% of GDP in 2022 (Republic of Kenya, 2023). While agricultural output grew by 10% from 2018-2022, the triple burden of malnutrition continues to persist. The proportion of the population with severe food insecurity increased from 15% in 2016 to 28% in 2022. Similarly, the prevalence of undernourishment rose, from 22.3% in 2013 (10 million people) to 29.4% in 2017 (14.7 million), erasing almost two decades of progress. On the other hand, between 1990 and 2017, the proportion of the population who are overweight almost doubled from 13.2 to 25.5% (FAO *et al*., 2019). Meanwhile, the percentage of obesity in the adult population increased from 5.9% in 2012 to 7.1% in 2016 (FAO et al., 2023).

To feed the rising population in Kenya (from 40 million in 2009 to 53 million in 2023), there is continuous unabated expansion of agriculture into natural habitats due to demographic and economic pressures, posing a significant threat to biodiversity. Further, the intensity of extreme weather events including droughts, heavy rains and floods (IPCC, 2022) have worsened over the years with serious negative effects on food security. For example, by 2022, Kenya and her East African neighbours were experiencing severe drought conditions (with the lowest March to May rains recorded in 70 years) that brought the threat of starvation to millions (FEWS NET, 2022).

In the face of the confluence of environmental degradation, climate change and the triple burden of malnutrition, there is increasing recognition that food systems are not meeting the needs of people, and their environmental costs are contributing to global climate change and biodiversity loss. A food system gathers all the elements (environment, people, inputs, processes, infrastructure, policies, laws and institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes (HPLE 2017) (Figure 1).

Figure 1: Simplified diagram for the food system (Source: HPLE, 2017)

Food systems play a vital role in nourishing human life, supporting well-being, and sustaining livelihoods. Transforming food systems is crucial to meeting the Sustainable Development Goals (SDGs), particularly SDG 2: Zero Hunger, but also for other goals, including SDG 3: Good Health and Well-Being, SDG 5: Gender Equality, SDG 10: Reduced Inequalities, and SDG 15: Life on Land. Yet there are challenges across the food system components from production, distribution, consumption of food, to food waste and recovery as well as other cross-cutting contexts within which the food system activities are undertaken such as gender and social inclusion and financing.

Kenya's food production system (agriculture, livestock, forestry, and fishing) is increasingly reliant on external inputs which increases the vulnerability of the farmers while also reducing returns from their farming practices. Moving towards greater organic inputs has been found to enhance and preserve the environment, while at the same time being more affordable. Smallholder farmers who constitute the largest proportion of agri-food producers have also limited access and control of genetic resources such as seed and livestock breed (Bosire et al., 2022). Limited sovereignty of seed and other genetic resources limits the types of food farmers can produce which negatively impacts food security. The IPPC has also shown that access to diverse seeds is a key strategy in ensuring we are able to continue to produce the food we need as climate change impacts become more severe.

The food provisioning challenges are exacerbated by low productivity – associated with poor soil health, poor agricultural practices, deteriorating ecological status of the environment and climate change. A recent Central Bank of Kenya study showed that productivity for all key crops – cereals, vegetables and pulses – was lower than their potential (Central Bank of Kenya, 2023). The current production system is also characterized by a trend towards monocultures which reduces agricultural biodiversity. This is further compounded by climate change which is expected to worsen food security for millions. By February 2023, over 4.4 million people were facing high levels of acute food insecurity, associated with drought and consecutive years of below-average rainfall (NDMA et al, 2023)). Overall, while sustainable production systems exist, awareness and uptake of good agricultural practices is limited. This is further compounded by weaknesses in existing agricultural extension and training systems which emphasize less on agroecosystem sustainability.

Beyond production, agricultural and food markets are characterized by long value chains and poor aggregation and distribution systems. Smallholder farmers face structural barriers that prevent them from accessing markets including, discriminatory social norms and economic barriers for marginalized groups. There is need for the development of inclusive market systems which involve and benefit a range of actors including poor and marginalized groups who are often excluded – or even exploited – by traditional market systems. Urbanization is also influencing changes of diets towards more ultra-processed food and animal-sourced proteins thus contributing to more overweight and Greenhouse Gas (GHG) emissions (HLPE, 2017). This challenge is compounded by a widening demand-supply gap which has led to a surge of food imports, particularly maize, wheat and rice (USDA, 2019).

Kenya has high levels of food loss and waste with 20 - 40% of food produced in Kenya being lost while the Food Waste Index Report 2021 indicates that every Kenyan throws away an average of 99 kilograms of food every year which costs the economy KES 72 billion[1]. The food system also faces governance issues such as inequitable access to resources such as land and finance (Wambugu et al., 2018). While smallholders are central to the food systems transformation, their voices are most often ignored. This is made worse by limited funding to support the scaling up sustainable agricultural practices as well as for research and development. Budget allocations for agriculture have averaged 3.3% for national government and 8% for county governments. The combined investment is yet to reach Kenya's commitment to allocate least 10% of national budgetary resources to agriculture – greatly affecting the development of the country`s food system[2]. The foregoing suggests the need for agri-food system transformation.

1.2 Rationale for agroecology in supporting agri-food system transformation

The need to transform Kenya`s food system has been recognized through the development of Kenya's Food System Transformation Pathway Plan. Food systems transformation involves paradigm shifts at all stages to become (i) healthy and nutritious, (ii) inclusive, enabling sustainable livelihoods for all stakeholders; (iii) environmentally sustainable, and (iv) resilient, (Ruben et al., 2021). There are two main approaches of delivering food system transformation – sustainable intensification or agroecological approaches. Sustainable intensification approaches seek to increase yield while also conserving the environment. These include; climate-smart agriculture, nutrition-sensitive agriculture and sustainable food value chains. Agroecological approaches on the other hand provide ways of harnessing ecosystem services and natural processes in a productive manner. They include; organic agriculture, agroforestry, regenerative agriculture and permaculture.

Agroecology presents an opportunity to address many of the challenges facing our food systems in a manner that is eco-friendly, resilient, and just. Agroecological approaches favour the use of natural processes, improving the use of inputs available at the farm level, promoting closed cycles with minimal negative externalities, with an emphasis on the importance of local knowledge and participatory processes

[1] The Food Waste Index Report 2021 by UNEP indicates that FLW accounts for Ksh 72 billion annually due to wasteful consumption.
[2] Maputo Declaration https://www.nepad.org/caadp/publication/au-2003-maputo-declaration-agriculture-and-food-security

that develop knowledge and practice through experience, as well as more conventional scientific methods, and address social inequalities (HLPE 2019). Agroecology is inspired by natural ecosystems, combining local and scientific knowledge and focusses on the interactions between plants, animals, humans and the environment. Innovations are based on the co-creation of knowledge, combining science with the traditional, practical and local knowledge of producers. By enhancing their autonomy and adaptive capacity, agroecology empowers producers and communities as key agents of change. Rather than tweaking the practices of unsustainable agricultural systems, agroecology seeks to transform food and agricultural systems, addressing the root causes of problems in an integrated way and providing holistic and long-term solutions. This includes an explicit focus on the social and economic dimensions of food systems. Agroecology places a strong focus on the rights of women, youth and indigenous peoples. Agroecology is increasingly seen as a transdisciplinary, participatory and action-oriented approach that embraces three dimensions (Figure 2).

Figure 2: Dimensions of agroecology

The UN Food Systems Summit (2021), UNFCCC COP 27 and CBD COP 15 are some of the international commitments which recognize agroecology as an approach to facilitate a transition towards more productive, sustainable and inclusive food systems. The agroecological transition pathway is informed by the consolidated set of thirteen key agroecological principles (Figure 3) that relate quite closely to the FAO's 10 elements of agroecology. Adapting generic principles to local context through co-learning, rather than promoting prescribed practices or technology, results in concrete practices suited to local circumstances and enables a demand-driven development agenda (Sinclair et al, 2019).

Figure 3: Agroecology principles (Based on HPLE 2019)

The food system transformation through agroecology follows a transition pathway which focuses on; i)complementary use of all available nutrient sources, with a focus on achieving optimal efficiency from applied nutrients; organic and inorganic, with the goal of restoring soil nutrient balance ii) redesign of farming systems to increase system diversity, improve soil and animal health, enhance diversification and recycling, reduce inputs, and increase synergies on farms and across landscapes; iii) establishes a close relationship between people who grow the food and the people who eat and v) building a new global food system that is not only sustainable but also helps restore and protect Earth's life-support systems. This food system is based on participation, localness, fairness and justice (Gliessman, 2007). The integration of these principles in our food system would contribute to agri-food systems transformation across many domains including food and nutrition, health, environment and climate change adaptation and mitigation, economic and social cultural outcomes (Table 1).

Table 1: Contributions of agroecology

Dimension	
Food and nutrition security	• Biodiversification of plants and animals will result in increased dietary diversity. • Promotes self-sufficiency through food and seed sovereignty which brings back as much control as possible to local farmers and other local food system actors.
Human Health	• Enhanced food safety; reduced health risks from pesticide exposure; reduced use of antibiotics, growth hormones, animal byproducts, vaccines, chemical pesticides and fertilizers. • Reduce budget incurred on health provision because of reduced incidences of non-communicable diseases.
Environmental	• Promotes nature-based solutions that enhance adaptation and mitigation against climate change affects by approximately 80 million tCO2e per year by 2050, equivalent to the annual emissions of Kenya in 2019(FOLU, 2022). • Enhanced ecosystem services through biodiversity conservation, integrated soil fertility management

	• Reduce hidden externality (environmental cost of production) substantially (ranging from 10% to 30%).
Economic	• Production of agroecological inputs such as organic fertilizers and bio pesticides will create green jobs for the youth. • Reduces cost of production by promoting producing more with less external inputs. • Enhance economic growth and GDP by expanding the trade and export of organic products.
Social-cultural	• Restoration, preservation of indigenous knowledge and genetic resources • Foster strong linkages between producers and consumers through a circular and solidarity economy • Change power relationships by encouraging greater participation in decision-making on food systems • Places a strong focus on the rights of women, youth and indigenous peoples.

In Kenya, the existing policy framework in the agriculture and environment sectors promote some agroecological principles such as resource use efficiency, input use and uptake of CSA practices. However, Kenya does not have a specific strategy on agroecology upon which efforts for its adoption and scale up can be anchored. The National Agroecology for Food System Transformation Strategy therefore represents an opportunity to address biodiversity loss while simultaneously providing benefits of climate adaptation, food and nutrition security, water conservation, ecosystem resilience, sustainable livelihoods and human rights through the integration of the 13 principles. In addition, Kenya can also follow in the footsteps of other countries which have developed agroecological policies to guide their food system transformation.

In recent years, policies specifically designed to support agroecology have emerged in a few countries: Argentina (Patrouilleau et al. 2017), Brazil (Niederle et al. 2019), France (Hubert & Couvet, 2021), India (Dorin, 2021), Nicaragua (Fréguin-Gresh & Sabourin 2019), and Senegal (Boillat et al. 2021; Bottazzi & Boillat, 2021) and Uganda.

In addition, there are some policies or investments that are incompatible with some agroecological principles (Sinclair et al. 2019). Identifying gaps in existing food systems policy and regulatory frameworks and misalignments with the transition to agroecology is therefore an important step for transformation. Some of gaps to be plugged include; mainstreaming of agroecology and other innovative-sustainable practices into existing national and county policies and strategies; funding for agro ecological initiatives and innovations, sustained research and development and, policy coherence to enable their adoption at scale and in a transformational way (Sinclair et al. 2019).

At the county level, several counties have either developed or are in the process of developing agroecology policies or strategies. These include Muranga, Kiambu, Vihiga, Busia, Kakamega and Elgeyo Marakwet. The National Agroecology for Food System Transformation Strategy will provide a national framework that Counties can use to domesticate county agroecology strategies, policies and laws. Overall, the strategy will support Kenya's attainment of its environmental, economic and social commitments as defined in the Sustainable Development Goals (Charin et al., 2022; Kerr et al, 2021).

Chapter Two: Situational Analysis

2.1 Introduction

The overall socioeconomic context of Kenya's agricultural and food systems has undergone significant structural changes in the last few decades due to the combination of population growth, urbanization, and economic growth. The increasing demand for food, combined with a growing global population and the escalating impact of climate change and disasters, are challenging the current paradigms of food production and consumption (IFAD, 2021). These dynamics have important implications for sustainable development and are projected to strongly increase in the coming decades. Moreover, socio-cultural factors such as religion, beliefs, food preferences, gender discrimination and education, continue to influence food consumption patterns and nutrition and therefore the attainment of the Sustainable Development Goals (SDGs).

Agroecology is an integrated and holistic approach for systemically addressing the challenges related to food and agricultural production and facilitating mutually supportive interactions between household livelihood strategies, the ecological health of the farm systems and the broader food systems. The approach applies principles and practices that protect longer-term absorptive and adaptive capacity of the agroecosystem and regenerates farmers' natural assets rather than depleting them - thus delivers optimal productivity and long-term food security and well-being.

2.2 Key issues and challenges facing agricultural and food system in Kenya

Providing food and nutrition security to all Kenyans is a critical national mandate. The National Agroecology for Food System Transformation Strategy aligns with the recognition that the country's future depends on a healthy population and an economy that is resilient to the effects of climate change and other emerging shocks. Transforming the agricultural and food systems to create resilience and capacity to provide nutritious food for all Kenyans is however faced with many contextual issues and challenges.

2.2.1 Agriculture and food production

The agricultural sector in Kenya is characterized by mixed cropping and livestock systems and to a small extent small-scale culture and capture fisheries. The key challenges facing the agricultural and food production systems in the country include;

Rising dependence on external inputs: There is increased consensus that food output will need to increase to meet the demands of the growing population. One of the most celebrated achievements of agriculture in the last century was the shift towards the high-input, resource-intensive farming systems (Green Revolution) which began in the 1950s, leading to significant increase in production of food. The increased production resulted in part from the introduction into developing countries of new, high-yielding varieties which require large amounts of chemical fertilizers and pesticides to produce high yields (Madeley, 2002). This raises concerns about cost and potentially harmful environmental effects (loss of biodiversity, deforestation, water availability, soil health and GHG emissions). While there is no doubt about the enormous success of the high-input, resource-intensive farming systems in increasing yields, there is evidence highlighting its long-term unsustainability (HPLE, 2019). Overdependence on external inputs also limits space for local indigenous knowledge and innovation. Their high cost also lowers the returns from agricultural enterprises.

Sovereignty of seed and other genetic resources: Seed is the first link in the food chain. The growing of seed and the free exchange of seeds among farmers is indeed the basis to maintaining biodiversity and food security. For generations, small holder farmers have freely shared a wide variety of seeds to produce food. The conversation about seed sovereignty is gaining momentum in the developing world due to concerns that new laws are being introduced across the world (e.g., Ghana, Liberia and Sierra Leone)

which limit what they can do with their own seed varieties (AFSA, 2017). This is exacerbated by limited protection of local seed and livestock breeds from bio-piracy. A big share of the commercial seeds is concentrated around a few types of crop and animal species that are grown or kept at commercial scale. There is also inadequate research on the economic, nutritional and agroecosystem health benefits of indigenous seeds and food. Agricultural research is often largely tailored towards industrial or corporate model of food production with little focus on the value of indigenous foods.

Degradation of land and other ecosystems supporting agricultural and food production: The continued degradation of land, soil, water remains a big challenge to agriculture. This is associated with unsustainable practices such as continuous cropping, livestock overstocking, pressure on pastoral systems, expansion of area under agriculture, land use change and reduction of forest cover. In Kenya, almost all the counties are at risk of land degradation. High land degradation is likely to occur in about 61.4% of the total area of Kenya, while very high degradation is already affecting 27.2% of the land (Republic of Kenya, 2017). Some of the impacts of the degradation include poor fertilizer yield response, reduced provisioning o ecosystem services, reduced productivity and water stress (Figure 4).

Figure 4: Degradation of ecosystems in Kenya

Declining biodiversity for food and agriculture: The increased adoption of monoculture (associated with trends towards specialization and commercialization) is a leading driver of declining resilience of the food system. While monoculture systems score well on financial earning, they are highly vulnerable to climate change and other related socio- economic shocks. The current agricultural and food production systems lack balance between specialization and diversification of farms and rural spaces, which is causing farmers to lose their autonomy (by relying on distant markets). Globally, out of 6,000 edible plant species that we have cultivated over centuries, just nine crops now account for more than 65% of all crop production (FAO, 2016).

Impacts of climate change on food systems: Kenya has been experiencing successive impacts of climate change resulting to substantial socio-economic losses. The country has endured three severe droughts in the last decade (2010-2011, 2016-2017 and 2020-2022) with widespread livelihood losses and massive displacement of populations (ASAL Humanitarian Network, 2022). Climate change's impact on food security relate not just to food supply, but also to food quality, food access and utilization and the nutritional properties of some crops. In response, Kenya has put up several measures to address climate change impacts (e.g., Climate Smart Agriculture Strategy (2017-2026) and updating of the Nationally Determined Contribution (NDC). However, Kenya's total GHG emissions have continued to increase, rising from 56.8 $MtCO_2e$ in 1995 to 93.7 $MtCO_2e$ in 2015, representing an increase of 65.2 % over the period (Figure 5). The emissions are projected to increase to 143 $MtCO_2e$ in 2030 (Republic of Kenya, 2021).

Figure 5: Kenya`s carbon emissions (Republic of Kenya, 2022)

Agroecology promotes nature-based solutions that enhance adaptation to climate change impacts and contribute to climate change mitigation of approximately 80 million tCO2 e per year by 2050. The uptake of agroecology will therefore help the country meet her NDCs since Agriculture and land use changes are the leading sources of greenhouse gas (GHG) emissions; mostly associated with, livestock enteric fermentation, manure left on pasture and agricultural soils and fertilizer application (Figure 6).

Figure 6: Share of carbon emissions by sector in Kenya (Ministry of Environment, 2020)

2.2.2 Aggregation, distribution and processing

Kenya's agriculture is predominantly small scale, accounting for 75% of the total production. Due to declining sizes of farm units, the low quantities of surpluses from small-scale producers often do not meet the market requirements of large scale off-takers. The existing models for distribution and markets are associated with the following challenges;

- Weak linkages between producers, consumers and other food system actors.
- Inefficient food supply chains and markets characterized by high transaction costs, increased cost in logistics, information asymmetries and long value chains which increase the carbon footprint.
- While markets for conventional inputs like hybrid seed, fertilizer and pesticides are well developed, those for organic and biological inputs are still nascent (Place et. al., 2022).
- The hidden social and environmental costs of unsustainable farming remain invisible in market prices. Consequently, incentives to transition to more sustainable production and consumption practices are weak (Negowetti, 2017).

Creating options using enterprise and market-based solutions, especially for smallholder farm households is one of the most probable paths to ending poverty and igniting prosperity in the economy.

2.2.3 Food marketing and consumption

Sustainable consumption is concerned with the need to address under-consumption on one hand stimulating the demand for healthy, diverse and safe diets by reducing the use of harmful agrochemicals, promoting diversification and localizing diets- while also improving food security, livelihoods and equity in the food system. Achieving these outcomes is associated with various challenges;

Shifts in consumption preferences in favor of food that are considered unhealthy: The burden caused by non-communicable diseases (NCDs), such as cardiovascular disease, cancer and diabetes, is on the rise globally. This trend is in part attributed to the consumption of poor and unhealthy diets (foods rich in energy and calories, fats, added sugars or salt, and an inadequate intake of fruits, vegetables and dietary fibre). This 'nutrition transition' reflects rapid urbanization, the increased production of processed food, the direct effects of food marketing exposure and differences in individual purchasing power and the income elasticities of food choice. While Kenya's diet problem is primarily a poverty problem, change in income does not necessarily translate to better diets (Ecker, Andrew, & Pauw, 2023). The poor consumer choices not only affect their nutrition and health outcomes, but also lead to a cycle that affect what is produced and available in the market (Figure 7).

Figure 7: The cycle of unsustainable food diets Source - APSID

The 'triple burden' of malnutrition and food insecurity: Ending hunger, achieving food security and improving nutrition are all key steps toward sustainable development. Despite undernutrition having declined strongly, most Kenyans still do not meet the recommended intake of nutritious food such as fruit and vegetables (Pengpid & Peltzer, 2018). Diets are mostly cereal-based, which leads to frequent dietary inadequacy. Worryingly, prevalence of undernourishment, food insecurity and hunger are rising in the last few years, erasing almost two decades of progress (Figure 8). While the country has made progress in reducing stunting for children under 5 from 40% in 2000, the one in five children under 5 are still stunted (KNBS, 2022[3]). The food provisioning challenges, which run across the food system are likely to remain a significant barrier to sustainable development, if unaddressed.

[3] 2022 Kenya Demographic and Health Survey (2022 KDHS)

Figure 8: Undernourishment and food insecurity in the Kenyan Food System (2000 - 2022)

Food safety: Food safety is a key concern in the food system since unsafe food remains a major cause of disease and death. Estimates from WHO 2015 report on the global burden of foodborne diseases show that contaminated foods cause about 1 in 10 people fall ill every year from eating contaminated food and nearly half a million die as a result (WHO, 2015)[4]. While the burden of foodborne diseases is a global concern, African and South-East Asia have the highest incidence and death rates. In Kenya the major food safety concerns relate to;

- Improper and increased use of pesticides and other agro-chemicals which increases residual levels that are harmful to humans. While there is limited data available concerning the use or concentrations of pesticides in water, soil and food, available evidence indicates and worryingly rising trend (Box 1).
- Weak monitoring and limited enforcement of food safety standards and regulations due to among other factors a skewed focus on hotel and restaurants at the expense of other sectors.
- Overlap in mandate between regulators such as Kenya Plant Health Inspectorate Service (KEPHIS) and Public Health department.
- Poor food handling practices and personal hygiene from production to consumption).
- Aflatoxin contamination in grains (especially maize, wheat and groundnuts). Aflatoxin is a carcinogen produced by mold that grows on improperly dried or handled crops. In 2004, maize contaminated with Aflatoxin caused 317 cases of liver failure and 125 deaths in Kenya (IFC (n.d).

[4] Based on estimates of the global burden of foodborne diseases 2015" – the most comprehensive report to date on the impact of contaminated food on health and well-being.

Box 1: Use of pesticides in Kenya

- The volume of imported insecticides, herbicides and fungicides has more than doubled within four years from 6,400 tonnes in 2015 to 15,600 tonnes in 2018, with a growth rate of 144% (AAK, 2018).
- Despite European restrictions and interventions to use less hazardous products, some of the withdrawn pesticides are still in use in Kenya, and continue to threaten the environment and the health of Kenyan citizens.
- Many pesticides are either acutely toxic, are endocrine disrupters (acting on the hormone system), are toxic to different wildlife species or are known to cause a high incidence of severe or irreversible adverse effects.
- There is limited research evidence concerning the use of pesticides with most research focusing on the persistent organic pollutants, such as DDT, which are rarely used anymore. Epidemiological health studies related to pesticide exposure in Kenya, do not exist.
- KEPHIS takes food samples, initiated and funded by the EU (EC, 2013), but the actual levels of pesticides are not made available to the public. Additionally, no regular monitoring system is in place.
- Kenyan consumers and farmers are not aware about the extent of pesticide use, their concentrations in food and environment and their possible effects on the environment and ecosystem services. Due to the high toxicity towards human health and the environment and due to their persistence (length of time in the environment), many of these pesticides are banned or heavily restricted in Europe.

In the face of these challenges, developing and encouraging agroecological farming techniques can help make soils more productive, minimize the use of agrochemicals and pollution, and therefore help reduce budget incurred on health provisioning because of foodborne diseases.

2.2.4 Resource and waste recovery

Resource and waste recovery offer multiple benefits by closing cycles and reducing waste that translates into lower dependency on external resources, conserving resources, increasing the autonomy of producers and reducing their vulnerability to market and climate shocks (FAO, 2023). Recovery encompasses practices such as waste-to-energy, recycling, nutrient cycling, composting, water recycling and circularity. The circular economy aims to minimize waste by designing products and systems that allow for the reduction, reuse, and recycling of materials, thus reducing environmental pollution, lowering greenhouse gas emissions, and promoting a more sustainable and resilient economy.

The government has put in place several policies such as Environmental Management and Coordination Act (EMCA), Waste Management Regulations (2006), Bio-energy Strategy (2020-2027) and National Solid Waste Management Strategy (2015). However, the country has high levels of waste being generated and not recycled. For instance, in Kenya's capital city of Nairobi, over 2,400 tons of solid waste are generated every day, but only 45% is recycled - against a target of 80% (NEMA, 2014). The resource recovery is impeded by poor waste collection and recycling infrastructure, inadequate funding, and a lack of awareness of circularity at a household level.

Kenya continues experience high levels of food loss and waste (FLW) with 20-40% of the food being lost or wasted (FAO, 2022; Liebetrau, 2019). The Food Waste Index Report 2021 indicates that every Kenyan throws away an average of 99 kilograms of food every year or a total 5.2 million tonnes every year, which costs the economy KES 72 billion or 0.5% of the country's GDP (United Nations Food System Dialogues, 2021). High FLW is driven by lengthy value chains, poor storage and handling, limited market infrastructure to support food recovery and limited awareness about food preservation and recovery. While considerations for FLW reduction are urgent for enhancing efficiency of resources and minimizing environment degradation, the country lacks a framework for food recovery or redistribution. Agroecology can provide a holistic approach to circularity and waste management in production, post-production and consumption.

2.2.5 Gender and social inequalities

Gender inequalities and other forms of marginalization affect people's access to healthy diets (Republic of Kenya, 2018). Disproportionate access to and control over land remains a big challenge with 75.2% of women not owning any agricultural land compared to 66.4% of men (KNBS, 2022). In addition, indigenous people living around conservation areas suffering greater injustice in access to land, despite being guardians of local ecosystems. Some of the indigenous communities to have continued to demand and claim restitution of their traditional land rights on the basis that they were dispossessed through historical and prevailing discriminatory legal processes (Wachira, 2008).

Limited access to credit and financing varies significantly across men, women and youth. While only 11.6% of Kenya`s population was excluded from accessing any form of financial services providers, the youth aged 18 -25 years were more financially excluded at 22.5% of the population (FinAccess, 2021). On average, 85.9% males' access formal finance compared to 81.4% of females. However, access through informal channels by women in 2021 stood at 6% compared with 3.2% among men. Within the agricultural sector, women account for 70% of the agricultural labour force, but receive only 10% of the funding. This situation is compounded by gendered interventions, where most support is geared towards higher value enterprises. These enterprises are likely to be owned by men therefore excluding women and youth (Muriithi, 2015; Andersson et. al., 2022).

Unequal participation in labour market is rife with women being burdened by the amount of unpaid care work they complete. Women living in rural areas work for long hours caring for family therefore constraining their participation in agriculture and income generating activities. Majority of time-saving technologies have not been specifically adapted to women's needs. These outcomes are driven by unequal gender norms, gendered division of work, and institutional and structural constraints (Mulwa and Gichana, 2020).

Uneven distribution of hunger and nutrition reflects the unequal distribution of power in global food systems. Producing and providing food is a power game that Kenya's smallholder farmers are losing given their little control over productive and financial resources in the food system. Thus, food and seed sovereignty issues remain key for the future of food system. Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems (Declaration of Nyeleni, 2017).

The protection and use of natural resources by communities are prescribed globally under the principle of access and benefit sharing. The International Treaty on Plant Genetic Resources for Food and Agriculture provides for conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security. However, access and benefit sharing principles relating to plant genetic resources for food and Agriculture have not been domesticated in Kenya. Nonetheless, there are initiatives to document genetic resources and their associated traditional knowledge at county level and national repository. This documentation is being undertaken for purposes of promotion and protection in 13 counties under the Traditional Knowledge and Culture Expressions Act of 2016. While the legal framework is in place, there is still limited recognition of communities as the owners of plant and animal genetic materials.

In view of the inequalities in access to resources, finance, labour markets and food systems, agroecology places a strong emphasis on human and social values and therefore seeks to address gender inequalities by creating opportunities for women and other vulnerable groups.

2.2.6 Financing for agriculture and rural and urban development:

Kenya`s share of agriculture spending in the national budget remains below the Comprehensive Africa Agriculture Development Programme (CAADP) target of 10% (Mulwa and Gichana, 2020). In the year 2021/ 22 the share of Agriculture, Rural and Urban Development sector funding was 3.3% of total exchequer issue (Figure 9). Large portions of the budgets are directed into providing subsidies that reduce the price of synthetic fertilizer and seed (usually hybrid maize), which encourage farmers to adopt detrimental forms of high-energy, high-input industrial agriculture (PSA alliance, 2022). At the county level, the average share of the agricultural sectors budget in total budget is 6.8%. However, some counties, e.g., Uasin Gishu, allocated over 10% of their total budget to agriculture (ASTGS, 2019). Within the county agriculture sector budget, allocations towards sustainable agriculture or agroecological programs are highly varied. In 2021/22, Kakamega County allocated up to 32% of their sector budget on sustainable agriculture programs compared to Homa Bay (17%), Elgeyo Marakwet (9%), Busia (3%) and Kericho (2%) (Shivonje, 2022).

Figure 9: Total actual national government funding by sector in 2021(Republic of Kenya, 2022b)

Based on the current funding model, financing to small-scale agriculture is disproportionately low when compared with the importance of agriculture for Country's GDP. A lion's share of public budgets for climate, agriculture and development still goes to conventional agro industrial projects that contribute to the current climate, food and biodiversity crises. Further, there is limited funding for agroecological initiatives and innovations, including lack of incentives for Agroecology[5], limited funds for research and development and, limited capacity of the counties to tap into existing funding opportunities e.g., climate financing. Interventions to support the agroecology transition should therefore seek to ensure that financial support reaches those who need it: small-scale farmers who put agroecology into practice, and local organizations which support them. For this to happen, there is need for both national and county governments to prioritize agroecology in their programming.

2.2.7 Policy environment on agroecology in Kenya

Transformation of food systems towards sustainability requires a robust policy framework to accelerate and scale-up actions to strengthen resilience and enhance adaptive capacity in the relevant sectors. Kenya is guided by various global and national policies and laws that support this transformation. The Constitution of Kenya (2010) Article 43 (1)(c) stipulates that: "every person has the right to be free from hunger and to have adequate food of acceptable quality." Article 53 further provides for child nutrition as a right. Similarly, the Constitution recognizes sustainable development as an important value and principle of governance and grants the right to a clean and healthy environment to all citizens (Article 42 and 43). Similarly, Article 11 recognizes culture as the foundation of the nation and the cumulative civilization of the Kenyan people. A sustainable development path requires prudent exploitation, utilization, management and conservation of the environment and natural resources that minimize waste and pollution. The Kenya Vision 2030, the long-term national development blueprint, together with the Medium-Term Plans (MTPs) recognize the role of the environment and natural resources in achieving this aspiration. MTP III (2018-2022) proposed to establish policies and strategies to promote biodiversity, organic agriculture, and biotechnology and food safety, but these are yet to be fully operationalized (Republic of Kenya, 2017). The National Agroecology for Food System Transformation Strategy proposes various actions on sustainable production and consumption that will place Kenya on trajectory towards sustainability of livelihood and smallholder empowerment while ensuring that the diverse needs and interests of various groups in the society are secured. This is in line with the Kenya Government's,

[5] These include changes in relative prices to promote uptake of agroecological practices. These might include; incentives based on market prices (certification/labels), incentives based on costs (taxation), incentive based on subsidies (eco-schemes, PES) and incentives based on selling credits

Bottom-Up Economic Transformation Agenda (BETA) 2022-2027 which prioritizes agricultural transformation as a pathway to economic recovery and sustainable development (The Kenya Kwanza, 2022). The Constitution and the development agenda therefore set the foundation for the National Agroecology for Food System Transformation Strategy.

Transitioning towards agroecological systems is central to achieving the multiple and interlinked objectives of the Sustainable Development Goals (SDGs). Agroecology can help reduce poverty (SDG 1) and inequality (SDG 10), by contributing to decent work (SDG 8) and increasing access to food (SDG 2). In addition, SDG 12 on sustainable production and consumption is a major vehicle for ensuring that we have sustainable agri-food systems. Regulating and reducing emissions and promoting renewable energy (SDG 13), conservation, promoting marine diversity and regulating fishing practices (SDG 14) and reversing man-made deforestation and desertification to sustain all life on earth (SDG 15) are also key goals for driving the agroecology agenda. Adopting agroecology as an agricultural approach can therefore help Kenya to shift to a sustainable and resilient path that provides enough, safe and nutritious food while respecting human rights.

The UN Biodiversity Conference (COP 15) recognizes biodiversity (ecosystems, species, and genetic resources) as essential for the sustainable production of food and livelihoods. Kenya is signatory to the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization[6]. The UN Climate Conference (COP 27) held in 2022 recognized the priority of safeguarding food security and ending hunger, and vulnerabilities of food production systems to the adverse impacts (UNFCCC, 2022). Several actions are flagged out including sustainable soil and integrated water management, transitioning to sustainable lifestyles and patterns of consumption and production in efforts to address climate change and transitions to low emission and climate-resilient development in line with the Convention, the Kyoto Protocol and the Paris Agreement. To achieve this, IPCC recognizes agroecological principles and practices as key for supporting food security, nutrition, health and well-being, livelihoods and biodiversity, sustainability (IPCC, 2023). Agroecology offers a holistic path towards synergistically achieving targets set by UNFCCC, U.N. Convention on Biological Diversity, the 2030 Agenda and the SDGs.

The County Integrated Development Plan (CIDP) is prepared by all Counties to guide development over a five-year period. Each County establishes their priority areas of focus depending on their resource endowment, national and local priorities. Most counties have prioritized agriculture, livestock, natural resources as their flagship sectors – with the strategies having implications on agroecology. Counties are developing their third cycle of CIDPs with several of them making attempts to integrate agroecological and other innovative approaches in their plan. For instance, Murang'a has developed an Agroecology Development Policy (2022-2032) and County Agroecology Development Act 2022 to guide implementation of agroecological policies and plans in the county (Republic of Kenya, 2022). Other County Governments such as Vihiga, Elgeyo Marakwet and Busia have integrated some agroecology principles into the plan. Establishing a National Agroecology for Food System Transformation Strategy could support all the counties adopt sustainable practices into their plans and strategies.

The National Agroecology for Food System Transformation Strategy draws upon and shall be complimented by several other guiding national and sectoral policies and strategies (Table 2).

[6] Regulations on access and benefit-sharing (ABS) were developed before the Nagoya Protocol and are yet to be fully aligned with the new Protocol as well as the Constitution (2010). The ABS are also spread across different national ministries, state agencies and county government. The development of an agroecology strategy is a key enabler and anchor for integrating these principles into the country`s agricultural and food systems

Table 2: Policy framework linked to agroecology

Sector	Framework	Description
Agriculture	Agricultural Policy 2021	The national policy seeks to attain household and national food and nutrition security through innovative and sustainable interventions linked to the country`s long-term development targets. The policy explicitly recommends the promotion of agroecology among other nature-based solutions as way of achieving sustainability and resilience of food systems. This justifies the development of an agroecology strategy as way of realizing these aspirations.
	Agricultural Sector Transformation and Growth Strategy (ASTGS) (2019 – 2029)	The strategy recognizes the declining biodiversity and need to balance the protection of biodiversity as agricultural systems modernize. The strategy puts emphasis on commercial, largescale, and modern agriculture with a view to securing sustainable food security and mitigating against climate change impacts. The development of an agroecology strategy would provide specific actions to achieving sustainability in agriculture and food systems.
	Kenya Climate Smart Agriculture (CSA) Strategy (2017-2026)	Recognizes the link between sustainable agriculture, biodiversity, climate change, and food security. While CSA proposes a transition to more environment-friendly agriculture, it does not provide a holistic path to transformative and sustainable agrifood systems in line with the full package of the 13 agroecology principles.
Environment	Environment Policy 2013	The policy recognizes the link between agriculture and biodiversity and proposes strategies to enhance biodiversity conservation. The policy recommends the development and implementation of integrated land use management strategies, eco/organic farming, soil policy, access and benefit-sharing mechanisms, Payment for Ecosystem Services (PES), and green procurement. An agroecology strategy can support the implementation of these actions.
	Draft Green Fiscal Incentives Policy Framework (2022)	Policy seeks to steer Kenya onto a low-carbon climate-resilient green development pathway through various fiscal and economic mechanisms (Republic of Kenya, 2022). These include; government planning toward green production and consumption, attracting private sector investment and, climate-resilient and sustainable economy. The agroecology strategy can promote these incentives through, sustainable production and consumption and, equitable ABS
	The Green Economy Strategy and Implementation Plan (GESIP) 2016 – 2030	Provides for various actions in, enhancing agriculture infrastructure, developing a natural resource accounting system, pursuing measures such as PES and ABS and, sustainable land management, to facilitate implementation of these actions, an agroecology strategy would be a good anchor for supporting their implementation.
	The National Biodiversity Strategy and Action Plan (2019-2030)	Lists major natural ecosystems as forest, woodlands, shrublands, grasslands, deserts, and wetlands and actions to reduce biodiversity loss. The plan also recognizes agroecology as a mechanism for delivering improvements in biodiversity. However, agriculture, forestry and fisheries sectors are not prioritized in the plan which provides an opportunity for the agroecology strategy.
	National Climate Change Response Strategy (NCCRS) and National Climate Change Action Plans (2015-17; 2018-22)	Strategies aimed to integrate climate change adaptation and mitigation into all government planning, budgeting and development objectives. Some of the actions envisaged include Nature-based Solutions (NBS) and Climate Smart Agriculture (CSA). Implementation of agroecology strategy simultaneously delivers climate adaptation, mitigation and food security.
Health	National Food and Nutrition Security Policy, 2011 and the National Nutrition Action Plan (2012-2017),	All these policies seek to deliver safe and nutritious foods for all. Agroecology has the potential to deliver both nutrition dense foods and food safety.
Gender and social equity	Kenya National Social Protection Policy (2011): National Policy on Gender and Development (2019)	These policies seek to ensure that all citizens live in dignity and protected from all adverse shocks and poverty, Further, the policies affirm the need for gender equality and empowerment to enhance participation all groups for the attainment of sustainable development. Agroecology places a strong emphasis on human and social values and therefore seeks to address gender inequalities by creating opportunities for women and other vulnerable groups in the economy.

Education, Science, Technology, & Innovation (STI)	National Research Priorities 2018 – 2022 (2019); National STI Agenda	The national research agenda seeks to facilitate the transformation of the economy from a factor-based to a knowledge-based and inclusive sustainable economy. While agroecology is key for this transformation, it has not been explicitly highlighted in the agenda. This strategy seeks to prioritize agroecology research as means of contributing to inclusive and sustainable socio-economic development.

The policy environment is supportive of achieving the country`s long term goal of middle-income country with a high standard of life whilst adhering to other international blueprints including the SDGs, EAC Vision 2050 and AU 2063 Agenda. Given the lack of a comprehensive national framework to guide the mainstreaming of agroecology, this strategy provides explicit actions that can support food nutrition and security whilst utilizing the natural resources in an equitable and sustainable manner.

2.3 Environmental scan of agroecology in Kenya

2.3.1 SWOT analysis

The SWOT analytical framework focuses on the key issues facing agrifood systems including food, climate, biodiversity while protecting food sovereignty and seed systems (Table 3):

Table 3: SWOT analysis for the agroecology in Kenya

STRENGTHS	WEAKNESSES
• Growing local movements promoting agro ecological practices including seed and food sovereignty • Rising number of smallholder farmers producing using agroecological practices • Existence of the rich indigenous, local and diverse knowledge on practices to promote agroecology • Existence of organizations that provide certification of products that follow principles of agroecology • Existence of agro ecological and other innovative technologies in agriculture sector • Emerging evidence on the positive impacts of agroecology on environment, resilience, food and nutrition security and social equity • Potential for co-creation of agroecological practices and knowledge among farmers and other stakeholders	• Limited mainstreaming of agroecology into existing national and county policies and strategies. • **Fragmented initiatives in support of agroecology that is not coordinated.** • Limited documentation of successful agro ecological practices and lessons to support uptake and scale up • Most markets for agricultural inputs and outputs favor large scale producers which helps to accentuate already existing inequities that disadvantages smallholder farmers • Limited market incentives and innovation uptake to support the agro ecological transition. • Low levels of circularity for management of solid, food and electronic waste due to limited waste collection and recycling infrastructure, inadequate funding, and a lack of awareness on of circularity at a household level. • Inadequate recognition of communities as owners of plant and animal genetic materials including legal frameworks to manage access and benefit sharing arrangements. • Limited integration of agroecological approaches in research, curriculum and practice • Inability to tap existing funding opportunities for agroecology • Limited availability and access to bio inputs by smallholder farmers • Urbanization and shift to unsustainable "modern" consumption, poor and unsafe diets due to limited knowledge, poor attitude on nutritious foods and high levels of FLW
OPPORTUNITIES	**THREATS**
• Recognition of agroecology`s potential by regional and international conventions, agreements and protocols • Presence of policies that support agroecological principles or practices. • Benchmarking and adoption of best practices from countries where policy reforms have resulted in securing of specific commitments to enable agroecological transition • Mainstreaming of agroecology into new and existing policies and plans • Use of National Green Fiscal Incentives Policy Framework to promote agroecology • Emerging and growing health-conscious population and global and local shifts in demand for safe, nutritious food • Development of standardized tools and protocols for measuring agroecological transition and the associated impacts • Need to address the rising health burden due to diet related non communicable diseases • e Huge export markets opportunities in developed countries such as EU and USA	• Acceleration of biodiversity loss associated with high-input, resource-intensive production systems which have caused massive deforestation, water scarcities, soil depletion and high levels of greenhouse gas emissions • Rising adverse impacts of climate change on the agri food systems • Inadequate measures to ensure biosafety with the introduction of GMOs into the Kenya. The Biosafety act is not safeguarding producers, non-GMO seed from injurious pollination – no redress mechanisms in case of harm on health, livelihood and environment • Inequity and marginalization of small holder farmers, indigenous communities, women and youth in terms of control over land, credit, markets, extension, training, agricultural R&D and climate adaptation efforts. • The social and environmental costs of unsustainable or conventional farming remain invisible in market prices • Large share of public budgets for climate, agriculture and development still goes to conventional agro industrial projects that contribute to the current climate, food and biodiversity crises • Lack of long-term financing that is compatible with longer-term investments in agroecology •

2.3.2 PESTEL ANAYLSIS

The PESTEL analysis, considered the political, economic, sociocultural, technological, legal, and environmental factors affecting the mainstreaming and scaling of agroecology in Kenya;

Political analysis: Article 43 of the Kenyan Constitution asserts access to food as a fundamental human right. The State has also a duty to promote and manage resources in a manner that is equitable, efficient, productive and sustainable, and in accordance with the principles of equity, sustainability and sound conservation. In line with this, the Kenya Kwanza Government plan has heralded five core pillars of focus: agriculture, enterprise, housing, healthcare, and digital economy[7]. Under the plan, the government will implement significant changes in agriculture and food production by transforming two million poor farmers from food deficit to surplus producers through input finance and intensive agricultural extension support. The state further target to generate a minimum productivity target of key food value chains (maize 8 -15 bags an acre, dairy 2.5kg- 7.5kg a cow a day, beef carcass weight from 110kg-150kg). Other targets include; reducing dependence on basic food imports by 30 per cent and revamping underperforming and collapsed export crops while expanding emerging ones (coffee, cashew nuts, pyrethrum, avocado, and macadamia). Consistent with agroecology, the plan will support small holder producers deliver food security and nutrition using local resources sustainably. These commitments will provide opportunities for collaboration between actors in agroecology and the government towards achieving the agroecological transition envisaged in this strategy.

Economic analysis: The agriculture sector is key for Kenya, directly contributing 26% of the Gross Domestic Product (GDP) and another 27% of GDP indirectly through linkages with other sector[8]. The country has grown to be a lower-middle-income state, driven by sustained economic growth, social development and relative political stability, flows of foreign direct investments. Despite, growth in GDP per Capita, the country has a high poverty level estimated at 36.1%, indicating a stagnation in levels economic inequalities (Figure 10)[9].

Figure 10:Selected economic indicators for Kenya

While the country is making efforts in reducing child malnutrition, progress on child stunting is stagnating and undernourishment is rising again (Figure 11). The global hunger index has been rising from 2014, largely driven by drought and food shortage. In addition, Kenya is the largest food and agricultural products importer in Eastern Africa with maize being the main staple food. In 2022, the country envisaged to import at least 900,000 MT of maize to plug the supply gap. Ensuring future food sufficiency will require investment in the agricultural sector as well as sustainable use of natural resources. This will also be supported by a

[7] https://africacheck.org/sites/default/files/media/documents/2022-08/Kenya%20Kwanza%20UDA%20Manifesto%202022.pdf
[8] The National Development Blue Print "The Kenya Vision 2030"
[9] KNBS (2018). Basic Report on Well-Being in Kenya: Kenya National Bureau of Statistics

significant cohort of unemployed or underemployed youth who need to supported to overcome the perception that agricultural production and agribusiness is less preferable than white-collar work.

Figure 11: Food and nutrition indicators for Kenya

Socio-cultural context: Kenya's food system underwent dramatic and structural changes (including behavioral ones) in the last few decades due to the combination of population growth, urbanization, and life expectancy (Figure 12). These dynamics have important implications for dietary behavior and are hastening the transition from consumption of traditional food to less healthy diets (which are becoming more common among Kenyans). While already present, the magnitude of these dynamics is projected to strongly increase in the coming decades. Moreover, socio-cultural factors such as religion, beliefs, food preferences, gender discrimination, education, and women's employment continue to influence food consumption patterns and nutrition. On the other front, increasingly important for these urban markets are Small and Medium-sized Enterprises (SMEs), which create a great deal of employment.

Figure 12: Development indicators for Kenya (World Bank, 2020)

Technological context: The agroecological transition will require new and existing applications of science, technology, and innovation across the food system. Some of the innovations towards strengthening food security and nutrition include technologies to combat biotic and abiotic stresses, raise crop and livestock productivity, improve soil fertility and make water available. Other key enablers include science and technology for climate change mitigation and adaptation, precision agriculture, index-based insurance, and early warning systems and fostering penetration in Information and Communication Technologies (ICT) for the agricultural sector, biotechnology, and nanotechnology are also key enable. Currently the mobile subscription penetration rates in the country increased to 143.1 per 100 inhabitants while mobile money subscriptions rose to 84.1 per 100 inhabitants in 2022 for total population. The increased ICT penetration creates opportunities to use digital platforms to educate, communicate as well

as create more awareness on the need for agroecology in Kenya. The commitment by the current government to accord more support to SMEs on digital marketing will also be critical in supporting implementation efforts. It is important to recognize that a technology cannot be neutral, as it reflects political choices made in its development, promotion, and utilization in a particular context and will have political consequences. For it to be sustainable, it must address the ecological, social and economic facets of life.

Environmental considerations: Kenya's agricultural resource base is best characterized by the "limited availability of productive land with most being arid (52.9%) or semi-arid (19.8%) land. It estimated that only 18% of Kenya's land having medium to high agricultural potential (World Bank, 2015). Nomadic pastoralism dominates the semi-arid and arid areas that make up most of the land mass. Food production is 98% rainfed (USAID, 2018). This reliance on rain, lack of storage facilities and low levels of food processing, coupled with other market failures leads, cause food insecurity peaks (particularly challenging in the arid and semi-arid lands areas). During the rainy season, on the other hand, there are often cases of overproduction which leads to prices falling and high food waste. Climate change is equally evident in Kenya with widespread impacts that include enhanced drought and flood events[10]. Increasing cases of drought-induced food insecurity have been documented with at least 2,147,889 Kenyans in need of immediate food assistance in the year 2021. Consequently, there are limitations of the Kenyan food system that point out the need for transformation.

Legal and policy environment: Food is an economic and social right under the Kenyan constitution. Kenya has several food policies, strategies, and regulatory frameworks to guide its human and economic development agenda. The agriculture policies and laws put emphasis on aspects of agroecology as one of the ways of achieving sustainability and resilience of food systems. However, these do not provide specific actions to achieving sustainability. The sectors related to environment recognize the link between agriculture and biodiversity, the need for a low-carbon climate-resilient economy and the value of enhancing agriculture infrastructure to implement PES and ABS. The health-related policies on the other hand seek to deliver safe and nutritious foods for all. Other laws recognize the need for gender quality as well as research in promoting development of the nation. The strategy provides a holistic path to facilitate a transformation towards more productive, sustainable, and inclusive food systems.

2.3.3 Stakeholder analysis

Responsibility for scaling up the agro ecological transition transitioning rests with many stakeholders operating at different levels and scale. Consequently, the specific roles of different stakeholders in facilitating, synergising, and supporting the transition process need to be defined and nurtured. Based on stakeholder analysis the key players will include;

The national and county governments: will play a facilitative role providing an enabling environment (institutional, legal, financing, infrastructure) upon which the scaling up of agroecology will be based. The principal ministries who shall play the lead and coordination roles for the implementation of the Strategy will be the Ministry of Agriculture and the Ministry of Trade and the Departments of Agriculture and Trade at the county level. Additionally, key state agencies in Agriculture including the Agriculture and Food Authority, Kenya Plant Health Inspectorate Service, Kenya Bureau of Standards will work with the National and County Governments and private sector actors.

County governments: The CGs will play a central role in the implementation of most of the aspects of the strategy. In all instances, cooperation and synergy between counties will be required since some of these actions could transcend county administrative boundaries. Each county will be expected to cascade the strategy and develop plans to actualize its goals and integrate County specific strategies into the respective County Integrated Development Plans (CIDPs). **Non-State Actors (NSAs)**. The various

[10] https://www.intechopen.com/chapters/80648

NSAs will include local and international NGOs, Community based organizations (CBOs) and producer organizations. The players will complement government initiatives by building capacity, influencing policy, sector coordination and networking to scale up the transition. These organizations will partner with government in providing financial resources also and implementing agroecology projects at the local and national level. Already a few non-state agencies are actively engaged in agroecology initiatives, but this is expected to change as more players come on board.

The Private sector: Private sector actors include producers of various crops and livestock commodities and actors along the various marketing supply chains. The sector will be required to complement government funding, promote commercialization of agroecological inputs, products, and practices. The creation of incentives and effective engagement structures will ensure that the private sector investment in agroecology is aligned to its principles and scaled up. The private sector can engage in advocacy on policy and legal issues of the strategy and promote action-based best practices in agroecology. Through corporate social responsibility (CSR), the private sector can support agroecology programs. The private sector will be expected to strengthen stakeholders' umbrella associations for retail, wholesale, and export trading to champion and spearhead stakeholder interest while also developing good codes of practice amongst members. It is expected that the associations will enable the effective provision of services related to marketing such as quality assurance, linking producers to markets and capacity building.

The development partners: will be responsible for technical and development cooperation, resource mobilization and funding of agricultural marketing strategies and programs and supporting capacity building of stakeholders.

2.4 Summary of issues, challenges, and opportunities

The situational analysis reveals that the country food system faces several challenges. These include;

1. **Fragile agri-food systems characterized by:** declining productivity in both crop and livestock; **d**egradation of land, water, soils and other ecosystems supporting agricultural production; loss of indigenous varieties and genetic resources for crop and animal production; rising impacts of climate change; declining biodiversity for food and agriculture; poor fertilizer yield response due to rising soil acidity; limited awareness of the potential of agroecology in supporting the much needed food system transformation; limited availability and access to bio inputs by smallholder farmers; and Limited market incentives and innovations to support the agroecological transition.

2. **Limited access to and consumption of safe, diversified, and healthy diets leads to food insecurity and malnutrition.** The trend is associated with shifts in consumer preferences in favor of ultra-processed foods; the direct effects of food marketing exposure; poorly coordinated food markets leading to high food prices and limited access and availability of traditional foods due to cultural shifts focus on production for the market. Inefficient food supply chains and markets are characterized by high transaction costs; increased costs in logistics; information asymmetries and long value chains which increase the carbon footprint. The rising burden of foodborne diseases; increasing incidences of food contamination; high levels of food loss and waste and low levels of circularity for the management of waste are also major issues facing Kenya's food systems.

3. **Weak policy and institutional environment / and incentives for supporting agroecology transitioning and scaling up** which is explained by**;** limited mainstreaming of agroecology and other innovative-sustainable practices into existing national and county policies and strategies; lack of long-term financing that is compatible with longer-term investments in agroecology; inability of smallholder farmers, communities and counties to tap existing funding opportunities for agroecology and disproportionate financing of small-scale agriculture relative to the importance of agriculture for developing countries' GDP. Equally, a lion's share of public budgets for climate, agriculture and

development still goes to conventional agro-industrial projects that contribute to the current climate, food and biodiversity crises.

4. **Limited integration of agroecological approaches in research, curriculum, and practice**. There is also limited documentation of successful agroecological practices and lessons to support uptake and scale up.

5. **Gender and social inequalities** driven by the uneven distribution of resources and power leading to the marginalization of smallholder farmers, indigenous communities, women, and youth. Equally, there is inadequate recognition of communities as owners of plant and animal genetic materials including legal frameworks to manage access and benefit-sharing arrangements.

Chapter Three: Strategic Framework

3.1 Overall goal of the strategy

The overall goal of the Agroecology strategy is to promote a sustainable transformation of the food system in Kenya to ensure food security and nutrition, climate resilient livelihoods and social inclusion for all.

The strategy is guided by the following vision and mission:

Vision:

Resilient livelihoods and sustainable food systems for all.

Mission:

To promote application of agroecological principles across the food system components for a more inclusive, productive, resilient and sustainable system for all citizens including the poor, small-holder food producers, women, youth and other vulnerable groups.

The transformation of Kenya`s food system and economy is essential for improved nutrition, secure and resilient livelihoods and equity among all citizens (Figure 9). The citizens are faced with a number of challenges including, food insecurity, malnutrition, economic insecurity and inequalities. Yet, the current food systems suffer low productivity, soil degradation, biodiversity loss and vulnerability of agriculture to climate change.

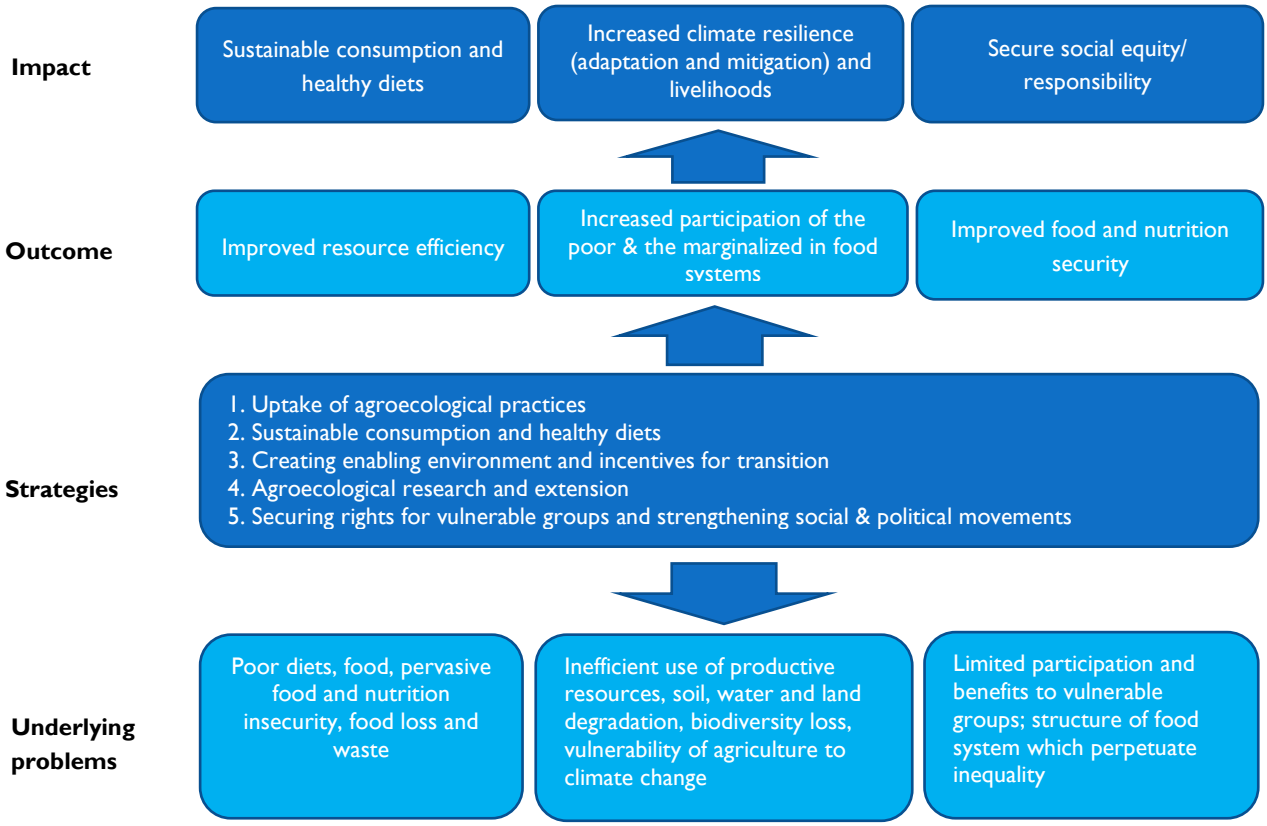

Figure 13: Theory of change

The theory of change (Figure 13) is hinged on uptake of agroecological practices and principles which can lead to improved soil health, sustainable farming, increased crop productivity and high adaptation and mitigation of climate change. Achieving this shift to agroecology would require investments and programs in agroecological research and extension among small scale producers and market actors in the food system. Shifts towards sustainable consumption and healthy diets are also vital for improved food and nutrition. These transformations must ensure that all food system governance addresses the needs of the small producers and the marginalized through affordability and availability of nutritious food, secure livelihoods and equity.

3.2 Strategic objectives

This strategy seeks to promote the agroecological transformation where local communities, small scale food producers, and other actors promote widespread application of agroecological principles and practices to ensure resilient livelihoods and sustainable food systems for all people. The food systems are to be adapted to local conditions and while ensuring that the rights to adequate food, to land and resources and, gender equity are achieved. To achieve this, five strategic objectives have been identified;

(i) Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches.
(ii) Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all.
(iii) Create an enabling environment and incentives for agroecology transitioning and scaling up
(iv) Strengthen research, innovation, and training, to foster co-creation, and co-learning on agroecological approaches.
(v) Enhance social equity, inclusion, and participatory governance in the food system.

To achieve these strategic objectives, several strategic actions have been identified (Section 3.3).

3.3. Strategic areas of focus

3.3.1 Transition to resilient and sustainable food systems through agroecology

Conventional agricultural models are not only in terms of the serious negative effects on biodiversity and soil fertility, but also the high emissions of greenhouse gases. Kenya has been experiencing successive impacts of climate change resulting to substantial socio-economic losses. Climate change is also expected to increase the incidence of drought, floods, crop and livestock pests and diseases and productivity decline. This strategy focuses on three key issues that are critical in promotion and uptake of agroecological practices: how to increase efficiency of resources used in agricultural production systems, substituting conventional inputs and practices with agroecological alternatives and, building capacity of actors in the agricultural, innovations systems to support uptake of agroecology.

Strategic area 1: Increase resource use efficiency and productivity in agricultural production landscapes

i) Promote practices that enhance on-farm diversification through crop, livestock, trees and fisheries combination for healthy food, income, and ecosystem restoration;
ii) Enhance the use of natural solutions for holistic crop and animal health that make use of locally available resources and ecosystem services.
iii) Facilitate adoption of farm practices that enhance water harvesting, storage and water use efficiency in agricultural systems;
iv) Facilitate adoption of sustainable soil health to allow for regeneration of farmlands and grazing lands;
v) Promote scale up of locally adaptable precision farming for management of agri-food systems (for nutrient management, soil and disease management, feeding);
vi) Promote the use of digital technologies in food systems` monitoring and management to support decision making.

vii) Enhance conservation of pollinators and pollination services that support agriculture and food production
viii) Promote equitable access to green energy sources for production and household food preparation

Strategic area 2: Strengthen mechanisms for production, distribution and use of locally produced agroecological/organic inputs

i) Promote awareness on the benefits and use of agroecological/organic inputs;
ii) Strengthen local production and distribution of agroecological/organic inputs;
iii) Provide incentives for local research, registration (including harmonization of those inputs with dual purpose) and standardization of organic agro inputs.

Strategic area 3: Facilitate integrated ecosystem restoration in landscapes

i) Map and profile critical ecosystems that enhance productivity of food systems to guide design of restoration interventions;
ii) Facilitate holistic land use planning to create spaces for human use, production and biodiversity conservation, ecosystem restoration;
iii) Promote collective action and landscape approaches in the restoration of ecosystems across all agroecological zones;
iv) Facilitate capacity building and awareness creation on the importance and benefits of conservation and restoration of ecosystem resources associated with agri-food systems biodiversity;
v) Promote incentive models that support ecosystem restoration and biodiversity conservation in agrarian landscapes.

Strategic area 4: Promote conservation of indigenous/locally managed seed and livestock breeds

i) Facilitate the mapping and profiling of indigenous seed varieties and livestock breeds facing the risk of extinction;
ii) Develop mechanisms for protection of the profiled seed varieties and livestock breeds;
iii) Build the technical and infrastructure capacity for establishment of community seed banks and farmer managed seed systems;
iv) Promote seed exchange mechanisms (sharing and sale) among stakeholders and with the national seed bank;
v) Policy and enabling environment and funding of genetic resources centers for indigenous/locally managed seed and livestock breeds.

3.3.2 Sustainable consumption and transition towards healthy, diverse and sustainable diets for all

Sustainable consumption offers a holistic approach to minimizing the negative environmental impacts from consumption systems through good use of resources, improving energy efficiency, providing access to basic services and ensuring a better quality of life for all. Sustainable consumption is concerned with the need to address under-consumption on one hand and changing consumption patterns among consumers in developing countries. A shift to sustainable healthy diets aims at stimulating the demand for healthy diets and supply of sustainable nutritious foods - while also improving livelihoods and equity in the food system. Considerations for circularity and waste management and food loss and waste (FLW) management are critical in enhancing efficiency of resources and minimizing environment degradation. Thus, sustainable consumption is anchored around: facilitating the shift towards healthy, safe and sustainable diets, transition to circularity, promoting and consumption of indigenous foods and protection of traditional food culture.

Strategic area 1: Facilitate the transition towards healthy, safe and sustainable diets for all.

i) Promote consumption of diverse safe and healthy diets in communities, public and private institutions;
ii) Promote One Health approach (health interconnection between people, animals, plants, and their shared environment) to strengthen food safety, enhance resilience and minimize, control of diseases;
iii) Enhance investment and innovations to reduce Food Loss and Waste (FLW);
iv) Strengthen social initiatives in food Consumption and distribution (such as food rescue/donations) as part of sustainable consumption and sharing economy;
v) Promote digital food platforms for procurement of safe, nutritious, and affordable foods.

Strategic area 2: Promote transition to a circular food system

i) Strengthen awareness creation among stakeholders on different models and approaches of circularity in food systems;
ii) Enhance mechanisms for food waste management (reduce, recycle, reuse) among food system stakeholders;
iii) Establish and strengthen partnerships among stakeholders on circularity initiatives in the food system;
iv) Provide economic and financial incentives to promote circularity in the food system.

Strategic area 3: Promote consumption of indigenous foods and protection of traditional food culture

i) Promote behaviour change to increase consumption of traditional and indigenous foods through awareness campaigns, and development of recipes and transfer of food preparation skills;
ii) Promote cultural food / harvest festivals integrated into national and county government plans;
iii) Support documentation and information sharing on traditional foods and associated cultures;
iv) Strengthen the utilization of digital platforms to promote traditional foods and cultures.

3.3.3 Enabling environment and incentives for scaling up agroecology

The development, implementation and scaling up of agroecology requires an appropriate enabling environment and appropriate incentives to overcome structural constraints perpetuate unsustainable and inequitable models of agricultural production (AFSA, 2017; HLPE, 2019). This strategy lays emphasis on four key issues that are currently constraining agroecological transitions: policy, legal and regulatory environment, financing of agroecology, market incentives and, access and benefit sharing arrangements.

Strategic area 1: Strengthen the policy, legal and institutional framework for agroecology

i) Enhance policy coherence to eliminate obstacles and biases that work against the agroecological transition and mainstream agroecology across relevant sectors;
ii) Establish comprehensive performance metrics and indicators for monitoring and evaluation of agroecology-related policies, plans and finance;
iii) Support counties to domesticate and implement National Agroecology for Food System Transformation Strategy;
iv) Support the domestication of the relevant protocols including the International Treaty on Plant Genetic Resources for Food and Agriculture and the development of legal framework for Access and Benefit Sharing (ABS) relevant in agriculture and food systems;
v) Establish multisectoral and intergovernmental coordination mechanism for agroecology

Strategic area 2: Develop and promote sustainable financing models for scaling up of agroecology

i) Mainstream agroecology in the sector plans and budgetary allocations at both national and county government;
ii) Create awareness and support agroecology actors to access existing and emerging green and climate financing as a lever for mainstreaming the agroecological transitions;
iii) Pilot existing subsidy schemes to support agroecological farming practices;

iv) Strengthen resource mobilization and funding for agroecology through Public and Private Partnerships and other new financing mechanisms such as PES.

Strategic area 3: Develop and create incentives for scaling up agroecology

i) Facilitate markets for agroecological inputs, products and services and create a national subsidy program for agroecology inputs and services;
ii) Build capacity of smallholder farmers and other actors in the agroecology sector to access benefits from market-based conservation programs such as carbon credits, eco labelling and PES schemes;
iii) Promote awareness and education targeting local communities on ABS issues relevant in agriculture and food systems.

Strategic area 4: Strengthen markets and trade for agroecology products and services

i) Promote use of agroecology foods and products in public and private institutions (schools, hospitals, correctional facilities), social protection and humanitarian relief programs;
ii) Implement mechanisms for low-cost, participatory certification systems including standards and labelling of food products and farming practices that align with agroecology;
iii) Establish and/or strengthen agroecology actor cooperatives to support the local and international marketing of products and services.

3.3.4 Research, innovation, training, and co-learning on agroecological approaches

Research and innovation (R&I) are key drivers in accelerating the transition to sustainable, healthy and inclusive food systems from primary production to consumption. Yet current research and innovation in agriculture and food research is conducted in sectoral or disciplinary silos without clearly linking the different aspects of the food systems. Similarly, transdisciplinary approaches, which are an important component of agroecological research are less common in Sub–Saharan Africa (SSA). On the other hand, existing agricultural extension and training systems need to move beyond conventional agriculture and emphasize agroecosystem sustainability. This should be implemented using generated innovation platforms capable of transforming of the food system. This strategy focusses on strengthening agroecological research and training, as well as enabling extension and advisory services to promote agroecology.

Strategic area 1: Prioritize research on agroecology in the country's National Agriculture Research System (NARS)

i) Identify capacity gaps of public and private stakeholders as a basis for capacity building on agroecology practice, training, and research;
ii) Promote multi-stakeholder partnerships to support agroecological research agenda setting and information sharing;
iii) Promote participatory validation and evidence-based assessment of the effects and impacts of agroecological approaches on key aspects of the food systems such as food security and nutrition, resilience and food safety;
iv) Enhance resource mobilization for agroecology research and extension, including allocating share of the national research funds to agroecology;
v) Strengthen digital and physical innovation platforms to support dissemination of agroecology research and information;
vi) Review the agricultural education curricula to include agroecology.

Strategic area 2: Strengthen extension and centres of excellence to promote agroecology

i) Facilitate technical assistance and capacity building to both public and private extension service providers to deliver effective extension in agroecology;
ii) Mainstream agroecology in public and private extension services;

iii) Promote appropriate extension approaches and methodologies towards co-creation and sharing of knowledge
iv) Establish an agroecology knowledge repository (including hubs and centres of excellence) to facilitate documentation and sharing of agroecological practices, while honoring local sovereignty and ownership of the knowledge
v) Tailor extension services and training to meet the needs and constraints of vulnerable and marginalized groups, including promoting social equity.

Strategic area 3: Revitalization of traditional food ways and associated Indigenous technical knowledge

i) Document and promote local knowledge and practices that support agro ecology
ii) Establish a demonstration centres on innovative agroecology practices by farmers
iii) Promote awareness and education targeting local communities on ABS issues relevant in agriculture and food systems (seed and food harvest festivals, exchange visits etc)
iv) Promote and mainstream consumption of diverse indigenous foods in public institutions
v) Support mapping and documentation of indigenous seed varieties to enable local and indigenous communities to sustain and revitalize their seed and food cultures for sustainability of their cultures (community registers, county register and national repository)

3.3.5 Social equity, inclusion and participatory governance in the agri-food system

The Constitution of Kenya 2010 (Article 43. Article 21) recognizes the socio-economic and cultural rights of all citizens with a special attention to the needs of vulnerable groups such as women, youth, persons living with disabilities and members of minority or marginalized communities. Agroecology places a strong emphasis on human and social values and therefore seeks to address gender inequalities by creating opportunities for women and other vulnerable groups. Similarly, the food system is characterized by uneven distribution of resources and power which lead to unequal access to food. Thus, food and seed sovereignty remain key for the future of food system. This strategy addresses two issues that are critical in securing social equity and responsibility in the food system – promoting interventions that guarantee rights to land, productive resources and access to services for vulnerable groups and strengthening social and political movements for a more equitable food system.

Strategic area 1: Facilitate access and control to productive resources by women, youth, vulnerable groups, marginalized groups and indigenous communities

i) Strengthen mechanisms that guarantee secure access to productive resources required for agroecology transitioning;
ii) Scale up interventions which would allow women as well as men to better combine reproductive and productive work;
iii) Promote labour saving technologies that meet needs of women and men and also other vulnerable groups;
iv) Promote the development and scale up of financial products that meet the needs of vulnerable groups.

Strategic area 2: Enhance equitable participation and meaningful engagement in food systems transformation

i) Strengthen participatory food system governance to address power inequalities in agriculture and food systems;
ii) Enhance recognition and fulfillment of producer and consumer rights to empower people most at risk of food insecurity and malnutrition;
iii) Increase the capacity of communities for engagement in the food system decision making policy processes.

Chapter Four: Strategy Implementation

This chapter deals with the implementation arrangements for the National Agroecology for Food System Transformation Strategy. The implementation of this strategy will involve various multisectoral and multidisciplinary State and non-State actors at both the National and County levels. These actors will be responsible for either implementing the Strategies outlined in Chapter three or coordination of various actors and collective efforts in Strategy. In addition, the implementation of the Strategy will require financial resources from various actors involved in implementing or supporting implementation of the strategy; mitigation of risks that may affect implementation; tracking and reviewing of implementation progress; and generation of data, information and knowledge to better inform implementation and future programming. This chapter therefore highlights the coordination and implementation functions, the financing mechanisms, risk analysis and mitigation, monitoring and evaluation, information, and knowledge management, while also providing for review of the Strategy document.

4.1 Coordination Mechanism and Institutional Set-Up for Strategy Implementation

The state actors involved the implementation of the National Agroecology for Food System Transformation Strategy will include Ministries, Departments and Agencies at both the national and county levels, while non-state actors will include private sector associations, development partners and Community Based Organization. Effective implementation of the Strategy will require coordination of the efforts of the various actors in order to focus and synergize the actions and strategy interventions outlined in Chapter 3. The respective line Ministries, Departments and Agencies at the National level will be responsible for their assigned mandates in line with existing Executive Orders, internal monitoring, evaluation and reporting on individual responsibilities.

At the County level, the respective Departments for Agriculture, Environment. Health and Education will continue to be responsible for their assigned mandates in relation to Agroecology. The Departments will be responsible for the strategies and associated activities relating to transitioning to resilient and sustainable food systems and sustainable consumption and transition towards healthy and sustainable diets for all.

An Agroecology Strategy Implementation Summit comprising of the PSs of the relevant departments within the Ministries of Agriculture and Livestock Development (MoALD), Ministry of Health (MoH), Ministry of Environment and Natural Resources (MoENR), Ministry of Education (MoE); CSO representative, and representative of a National Farmers' Association will be the top most policy advisory organ at the national level. The Intersectoral Forum on Agroecology and Agrobiodiversity (ISFAA) National Technical Committee on Agroecology will be established at the national level while at the devolved level, a Technical Working Group will be established within CASSCOM. The Chairman of the TWG/SWAG on Projects, Programmes and Inputs under JASSCOM will be e member of the ISFAA National Technical Committee on Agroecology. The committee at the national level and the CASSCOMs at the county levels will ensure the mainstreaming of agroecology practices in all agriculture, health, education and environment programmes (Figure 14).

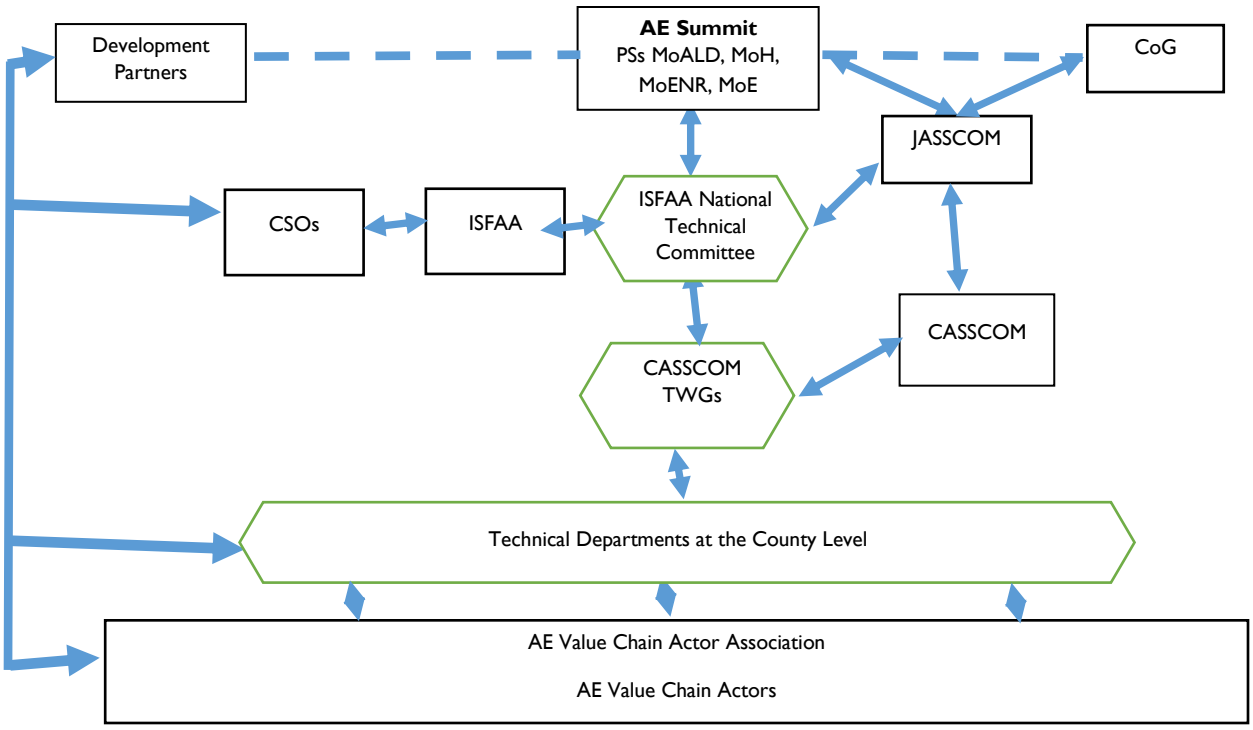

Figure 14: Coordination Structure and Institutional Setups

4.1.1 Coordination of Agroecology functions at the National Level

At the national level, the ISFAA National Technical Committee on Agroecology will undertake overall coordination of Strategy implementation. The ISFAA National Technical Committee on Agroecology will align its work with the (TWGs) established under JASSCOM and may where, necessary, establish additional TWGs; the TWGS will address issues under various Strategy Objectives, namely (i) fostering the transition to resilient and sustainable agriculture and food systems; (ii) promoting sustainable consumption and facilitate transition towards healthy and sustainable diets; (iii) creating an enabling environment and incentives for agroecology transitioning and scaling up; (iv) strengthening research, innovation, and training, to foster co-creation, and co-learning on agroecological approaches; and, enhancing social equity, inclusion and participatory governance in the food system.

The ISFAA National Technical Committee will be responsible for the following:

1. Overall coordination of Strategy Implementation.
2. Collective determination and advising the line Ministries and agencies, as appropriate, on measures to be undertaken to achieve the for- National Agroecology for Food System Transformation Strategy objectives.
3. Assessing progress and steer the consolidation of reporting and reports on the achievement of Strategy implementation results (outputs and outcomes).
4. Facilitating sector-wide linkages with regional or international initiatives on Agroecology.

The ISFAA National Technical Committee on Agroecology will comprise the following institutions and actors;

1. Line Ministries responsible for crops, livestock, fisheries, health, environment and education
2. Representatives of the Intersectoral Forum on Agrobiodiversity and Agroecology
3. Representatives of Farmers and growers' organizations
4. Research and Academia
5. State Agencies including AFA and KEPHIS

6. Kenya Representative of Civil Society Organizations
7. Representatives of processors and manufacture's organizations
8. Representatives of Development Partners
9. Representative of Kenya Consumer Network

4.1.2 Coordination of Agroecology functions at the County Level

Each county, through their CASSCOM, will be responsible for the following;

1. Domestication and mainstreaming of the National Agroecology for Food System Transformation Strategy in CIDPs and coordination of development of annual work plans;
2. Overall County coordination of domesticated Strategy Implementation.
3. Collectively determining and advising the respective CECMs, as appropriate, on measures to be undertaken for implementation of the National Agroecology for Food System Transformation Strategy;
4. Develop and supervise the adoption the County action plan;
5. Assessing progress and steer the consolidation of reporting and reports on the achievement of Strategy implementation results (outputs and outcomes);
6. Facilitate regular communication and flow of information on Agroecology management systems: and,
7. Facilitate sector-wide intra and cross-county linkages on Agroecology

The Agroecology Coordinating framework (convening and ISFAA Technical committee on AE) will be domiciled within the Ministry of Agriculture and Livestock Development.

The CASSCOM in respective of each County will comprise the following institutions and actors;

1. Departments for Agriculture, Livestock Fisheries, Health, education and Environment
2. Regional/County Offices responsible for AFA, KEPHIS
3. Representatives of Farmer Organizations
4. Representative of Regional Kenya Association of Manufactures
5. Representative of Civil Society organizations at the regional level
6. Representative of Development Partners working within the County
7. Representative of Food Transporters/logistics organizations working within the county

4.2 Financing of Strategy Implementation

The National Agroecology for Food System Transformation Strategy implementation will require resources for the following;

a) Executing the strategies under each area outlined in Chapter; and Overall coordination of various actors in focusing collective effort for effective Agroecology Strategy implementation; M&E, reporting and development of knowledge management tools.
b) The financial resources for the execution of strategies outlined in Chapter 3 will be allocated and spend by implementing actors in line with their commercial or public interests aligned to Agroecology principles and the strategies in this document. The actors will be required to enhance allocation of resources for greater alignment of practices to agroecology principles in existing agricultural and food systems, where appropriate. Further, projects and programmes that aim to have agroecology mainstreamed in the agriculture and food systems will be promoted and depending on which stage of the food supply chain, be domiciled within the line Ministries or Departments responsible for

crops, livestock, health, education or environment depending as per the respective focus areas and mandates in the strategy implementation.

4.2.1 Government Funding

Government funding at the national and devolved levels will be through annual budgetary allocations and formulated programmes that focus on agroecology. Government at either level will increase funding to address public interventions in line with their respective functions, mandates and responsibilities outlined in the Constitution 2010 and Executive Orders issued from time to time. Resources from the national government will focus on objective No. 5. on policy and enabling environment and funding of genetic resources centers for indigenous/locally managed seed and livestock breeds; while also supporting, together with other partners, resources for coordination and implementation of objectives 1,2,3 and 4. The two levels of Government will also be responsible for mobilizing resources from partners to support targeted programmes and projects addressing agroecology initiatives, and, where necessary, provide fiscal and other incentives for greater adoption and mainstreaming of agroecology principles and practices.

4.2.2 Resource Partner Support

Support for coordination and the execution of specific strategic interventions from Development Partners will be refocused to align with of National Agroecology for Food System Transformation Strategy priorities. Government and other actors will continue to advocate and mobilize resources from development partners using the Strategy selling point to mobilize resources for various projects and programmes targeted at Agroecology. The line Ministries, either collectively, or individually will lobby Development Partners to prioritize funding for new programmes that align with or have components on Agroecology while also advocating for additional funding for the mainstreaming of agroecology practices in current agriculture, health, education and environment related programmes.

4.2.4: Private Sector Support

All value chain players currently in practice within the agriculture and food systems space will be required to continue to invest in measures that employ agroecology practices and principles. Commercially oriented and non-profit institutions engaged in agriculture and food systems will be required to enhance allocation of financial resources to address the interventions that cover Agroecology practices outlined in chapter 3 in line with their commercial or public interest.

Strategic pillar	**Budget (KES 000' millions)**
1. Transition to resilient and sustainable food systems through agroecology	8,425.00
2. Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all	2,595.00
3. Creating an enabling environment and incentives for agroecology transitioning and scaling up	4,240.00
4. Strengthen research, innovation, and training, to foster co-creation, and co-learning on agroecological approaches	6,425.00
5. Social equity, inclusion and participatory governance in the food system	800.00
Subtotal	**22,485.00**
35 % of administration	**7,869.75**
TOTAL	**30,354.75**

4.3 Monitoring, Evaluation and Reporting

Monitoring, Evaluation (M&E) and Reporting will be critical for measuring the progress and effectiveness of the National Agroecology for Food System Transformation Strategy 's implementation. M&E will help the government and other actors involved in the Strategy implementation assess whether objectives are being achieved, identify areas for improvement, and make data-driven decisions to ensure the successful implementation of the Strategy.

An M&E framework outlining Key Performance Indicators (KPIs) aligned with the overall objectives of the strategy intended for providing clear benchmarks for performance evaluation with measurable metrics that reflect the progress and success of the strategy will be developed. Data collection framework with clear indicators that address data requirements for important benchmarks; assessing Strategy performance; required national metrics on food system transformation/changes; reporting on CAADP; Kenya's NDCs, among others will be designed and implemented. It may include surveys, assessments, financial data, operational statistics, and other relevant information.

Regular and consistent reporting, essential for keeping stakeholders informed about the strategy's progress will be undertaken at the various levels of implementation at both National and county levels. Reporting will provide both quantitative and qualitative data, highlighting achievements, challenges, and areas where adjustments will be need to be made. Reporting structures outlining formats and frequencies for providing updates on the Strategy implementation progress with clear outputs and outcomes results/indicators and associated means of verification will be established. Stakeholders with specified information needs will be identified and reports tailored to address different information needs. The M&E reports will be also structured to ensure findings from monitoring and evaluation activities can be used to continuously improve strategy implementation and inform future programming on agroecology.

4.4 Knowledge Management and Communication

A knowledge Management framework aligned to the Knowledge Management Policy for Kenya will be developed. The Knowledge Management Policy provides for a multipronged approach towards achieving a knowledge-based economy and building platforms for knowledge exchange by encouraging cooperation among knowledge-generating institutions and development agencies. Knowledge management will focus on knowledge creation; capture: organization: storage: knowledge retrieval: sharing/transfer; learning and training; knowledge validation; knowledge governance: and performance measurement. Knowledge management will foster an environment that encourages the efficient and effective flow of knowledge among actors and stakeholders within the Agroecology.

The knowledge management framework will focus on ensuring that the right knowledge is available to the right actors and stakeholders at the right time, leading to better decision-making, improved innovation, and increased productivity. Knowledge management framework under the strategy will a on coordinated and structuring data collection, analysis, reporting and dissemination system in line with the strategy implementation progress through indicator tracking.

The Committees established at the National and devolved levels of government will coordinate knowledge management initiatives. The Committees and the two levels of Government will be required to outline a reporting framework that will link the County and National Government to identify actions that are strategically aligned and contribute to achieving the desired Strategy results.

4.5 Risk and Mitigation

Table 4: Risk and Mitigation

Risks: [11]	Risk description	Likelihood (1= very low 5 = very high)	Impact (1= very low; 5 = very high)	Existing controls in place	Risk Owner/ Responsibility
Climate change	Sudden changes in the climate and the incidence of pests and diseases may affect implementation of the strategy	High	High	Put in place a comprehensive preparedness plan	
Political support and buy in	May face considerable resistance in the short-term especially if certain groups- from farmers, politicians, private industry perceive that they may lose out or face considerable adjustment costs.	High	High	Provide regular evidence-based updates on how agroecology has provided solutions	
Policy characteristics and interests	Interest groups and policy actors may cause influence in resource distribution towards sector perceived to be more urgent lower prospects of implementation	High	High	Outline clear criteria for mapping, selection, and prioritization of programmes	
Debt crisis	High debt service payments caused by accumulated debt may shift spending away from agriculture production	High	high	Position agroecology as a priority investment option for government	
Market uncertainties	Prices competition on agricultural products produced through conventional agriculture and those produced through agroecological practices may demoralize agroecological farmers	High	High	Design and run comprehensive producer and consumer awareness programme	
Globalization and Technological advancements	Highly processed foods/consumption striping away nutrients contained in fresh foods. GMOs flooding markets presenting cheap sources of food	Low	Medium	Design and run comprehensive producer and consumer awareness programme	
Coordination failure	Actors can fail to coordinate to meet their common goal	Medium	High	Develop and implement clear structure of coordination that embraces cooperation and collaboration	

4.6 Strategy Review

This Strategy will be reviewed at the end of the ten-year Strategy planning and implementation period or earlier whenever it may be deemed necessary pursuant to policy changes or emerging issues and priorities.

[11] Consider risks that are inherent in the context for the project, or relate to the project design, project implementation, and risks to child safety, and project funds resulting from fraud, corruption and financing of terrorists/terrorist organisations)

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Annexes

Annex 1: Process of developing the strategy

This strategy has been prepared through a broad based participatory and consultative approach. The process of developing the strategy followed five (5) key phases; Inception, Baseline assessment and visioning, drafting the strategy, Stakeholder consultation, Technical review and Validation.

Figure: Process of developing the strategy

i) The initial phase in the formulation process involved various inception activities which included; document review, resource mobilization, mapping of the key stakeholders, development of the strategy formulation roadmap and identification of thematic areas.

ii) The second phase in the process was a baseline assessment and visioning. This involved a visioning workshop that brought together stakeholders from the government, NGOs, academia and research. The participants in the workshop used various analytical frameworks including SWOT analysis to identify existing gaps and opportunities for the strategy. In this phase the strategic direction, objectives and issues for the Strategy were also identified.

Figure 1.4: Strategy visioning workshop

iii) The third phase involved synthesis of the outputs of the workshop, review of existing policies and benchmarking of the strategies with global best practices. This was then followed by a technical review of the draft strategy by the officials of the Ministry of Agriculture, the Intersectoral Forum on Agroecology and Agrobiodiversity (ISFAA) members. This and inputs arising from this process were then integrated into the draft strategy. A second consultative workshop bringing together some participants of the visioning workshop and other food system stakeholders was then held to further review the strategy. Additional inputs from the workshop were included before the second draft was taken through an extensive public consultation and participation process.

iv) The draft strategy was then taken public consultations. This included inviting members of the public to submit memoranda to be included in the strategy. The strategy was also presented to county forums organized in consultation with the CASCOMS through consultative workshops, focus group discussions and key informant interviews. The stakeholder consultation will be followed by analysis of the stakeholder input, drafting of revised Agroecology Draft Strategy.

iv) The final phase of strategy involved validation of the draft National Agroecology for Food System Transformation Strategy.

Annex 2: Strategy Implementation Matrix

NATIONAL AGROECOLOGY STRAEGY IMPLEMENTATION MATRIX

Strategic Pillar 1									
Strategic objective 1: Transition to resilient and sustainable food systems through agroecology									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			PRIORITY			Indicative Budget (KES) Millions
			NG	**CG**	**Others**	**ST<3YRS**	**MT 3-5YRS**	**LT >6YRS**	
1.Increase resource use efficiency and productivity in agricultural production landscapes	i) Promote practices that enhance on-farm diversification through crop, livestock, trees and fisheries combination for healthy food, income and ecosystem restoration;	1. % of farmers adopting agroecology practices in crop and livestock production 2. Hectares of land under agroecology practices 3. Diversity of plants and animals at farm level 4 No of trees	MoALD, MoL; Provides enabling polices	Provides policies promoting nature based, Provide extension services, demonstration sites	NGO, Farmer organizations, Private sector; carryout mapping of lands under Agroecology.	ST	MT		50M
	ii) Enhance the use of nature-based solutions in agriculture and livestock	1. Standards established for nature-based products 2. Number of certified nature-based products used in plant, soil, and animal production 3. Number of farmers trained on and using farmer-based solutions 4. % of policies, legislations, and incentives which promote nature-based solutions 5. Number of subsidies promoting nature-based solutions	KEBS, PCPB ; Provides enabling policies	Incubation for nature, establish demonstration/ use of nature-based solution, Provide extension services, demonstration sites	Establish demonstration/ use of nature-based solution KOAN, Private Sector; certification bodies, NGO to promote nature-based solutions, Implement policies for nature-based solutions, Promotes advocacy to nature-based solution, Private sector-commercialisation of inputs		MT		125M

	iii) Facilitate adoption of farm practices that enhance water harvesting, storage and water use efficiency in agricultural systems	1. Number of water efficient technologies adopted by farmers 2. Number of farmers and other users utilizing efficient water management practices 3. Number of last mile solutions supporting access to large water storage infrastructure	WARA- provides enabling policies.	WARUA	WRUAs Farmer groups NGOs		MT		10M
	iv) Facilitate adoption of regenerative and agroecological practices that enhance sustainable soil health in agricultural and grazing lands;	1. Number of regenerative and agroecological soil health enhancing practices developed and tested 2. Number of farmers adopting regenerative and agroecological soil health enhancing practices 3. Acreage under regenerative agriculture and agroecological soil health practices	MoALD, KASEP- 2022; Policies development, reviews, National agricultural research system (NARS)- KALRO, Universities, research institute, international research centres	Provides extension services Establishing demonstration sites	NGOS, Farmers/farmer organisations	ST			630M
	v) Promote use of appropriate and locally adapted technologies and innovations that enhance the adoption of agroecological practices	1. Number of technologies developed and tested 2. Number of farmers adopting the technologies and innovations 3. Number of farmers trained on the technologies and innovations 4. Number of farmers exposed through demonstrations	NARSD, MoALD. Ministry of ICT; provision of enabling policies National commission for science tech; KIPI	Establishment of demos, Provision of extension services, Provision of incentives/subsidies	Farmers/farmer organisations Private sector; enhance scalling up of technology	ST		LT	200M
	vi) Promote the use of digital technologies in food	1. Number of digital technologies developed and tested	NIA NARS Ministry of ICT, MoEduc. ;	Provide extension services	NGO, Private sector, Farmers/farmer groups;		MT		200M

	systems` monitoring and management	2. Number. of users trained and registered 3. Number. of users adopting digital technologies	provision of enabling policies.	Establish demonstrations sites Provision of subsidy and incentives	promotes uptake of the technologies				
	vii) Enhance conservation of pollinators and pollination services that support agriculture and food production	1.% reduction in cost of agricultural production 2.Increased farm biodiversity 3.% of reduceing use of polluting agrochemicals 4.Measure the increase of diversity of pollinators at field level	National Innovation Agency (NIA) MoICT NARS MoE	Provide extension services Establish demonstrations sites	NGO, Private sector, capacity building			LT	400M
	viii) Promote equitable access to green energy sources for production and household food preparation	1..Number of green energy technologies developed 2.Number of incentives for locally produced green energy developed and use 3.% increase in use of green energy sources for production	Ministry of energy, Agric , Trade, Environment	Extension, policy for green energy, incentives	NGO/Private sector-support production, capacity building			LT	700M
2. Strengthen mechanisms for production, distribution and use of locally produced agroecological/organic inputs	i) Promote awareness on the benefits and use of agroecological/organic inputs;	.Number of Agroecological inputs available to producers 2. Number of farmers with knowledge of availability and benefits of agroecological inputs 3.Number of farmers using agroecological/organic inputs	NG(Treasury, MoALD, PCPB, HCD/AFA, KEPHIS)	Provide extension, subsidies, bylaws Establish demo farms	Private sector, NGOs, FPC,				150M
	ii) Strengthen local production and distribution of agroecological/organic inputs;	1. Number of agroecological/organic inputs developed and tested 2. Number and diversity of agroecological products produced 3. Number of SMEs engaging in production of organic inputs	NARS AG/Company registrar, Treasury Ministry of Cooperatives & Marketing, MoALD	Provide extension services Establish demonstrations sites	Private sector (KAM, AAK, KOFIMA)		MT		210 M

		4. Value of investments into the production of AE products 5. Number of policies that incentivise production and use of organic inputs;							
	iii) Provide incentives for local research, registration (including harmonization of those inputs with dual purpose) and standardization of organic agro inputs.[12]								
3. Facilitate integrated ecosystem restoration in agrarian landscapes	i) Map and profile critical ecosystems that enhance productivity of food systems to guide design of restoration interventions	1.Number of critical ecosystems mapped 2. Number of critical ecosystems restoration strategies developed 3. Number of critical ecosystems restored 4. Hectares of different ecosystem restored.	NG (MoE, KFS, MoALD, MoW, Kenya Water Towers, NARS	Provide extension services Establish demonstrations sites	NGOs, CSO, ,private sector				1220m
	i) Facilitate holistic land use planning to create spaces for human use, production and biodiversity conservation, ecosystem restoration;	1. Number of ecosystem-based/watershed-based land use plans developed 2. Number of land-use plans implemented 3.Number of stakeholders capacitated and adopting land restoration and conservation	NG (Ministry of Lands, Forestry, Environment, Agriculture), NLC Ministry of water and sanitation	Provide extension services Establish demonstrations sites	CSOs, CBOs, private sector, local communities				1070 m
	iii) Promote collective action and landscape approaches in the restoration of ecosystems across all agroecological zones;	1.Number of stakeholders capacitated and adopting land restoration and conservation	MoALD, MoEF; provides enabling policies	Provide extension services Establish demonstrations sites					50M

[12] Research covered under 5 and standardization under 1.iip

	iv) Facilitate capacity building and awareness creation on the importance and benefits of conservation and restoration of ecosystem resources associated with agri-food systems biodiversity;	Number and amount of quality organic inputs and products availed in the market 1.Number of farmers/stakeholders capacitated and aware on importance of conservation and restoration and of ecosytem resources in agriculture	MoALD, MoEF, MoE; provide enabling policies	Provide extension services Establish demonstrations sites Provide capacity building					110m
	v) Promote incentive models that support ecosystem restoration and biodiversity conservation in agrarian landscapes.	1. Number of appropriate incentives for ecosystems restoration available to farmers 2. Number of farmers/stakeholders adopting incentive based models for conservation 3. Area of land restored through the incentive models	NG (Ministry of Lands, Forestry, Environment, Agriculture), NLC	Provide extension services Establish demonstrations sites Provision of subsidy and incentives	CSOs, CBOs, private sector, local communities				370m
4. Promote conservation of farmer/producer managed seed and livestock breeds	i) Facilitate the mapping and profiling of farmer managed seed varieties.	Number of farmer managed seed varieties mapped/profiled	MoALD,; provide enabling policies GeRRI,, NARS; enhance mapping and profiling of seeds	Provide extension services Establish demonstrations sites Provide capacity building	Private sector, CBOs, NGOS,				470M
	i) Develop mechanisms for recognition, multiplication and conservation of the profiled seed varieties and livestock breeds;	Number of seed varieties and livestock breeds recognized and conserved.	NARS NG (Ministry of Agriculture), KARLO, GERRI, ,KEPHIS, HCD	Provide extension services Establish demonstrations sites Provide capacity building	Private sector, CBOs, NGOS,				500M
	iii) Build the technical and infrastructure capacity for establishment of community seed banks	1.Number of farmers collecting, multiplying, sharing and preserving community managed seeds.	NARS	Provide extension services Establish demonstrations sites	Private sector, CBOs, NGOS				610M

	and farmer managed seed systems;	2.# of community seedbanks established.		Provide capacity building					
	iv) Promote seed exchange mechanisms) among stakeholders and with the national seed bank;	1.Number of seed exchange protocols (Knowledge quality assurance and information about the seeds) for scaling up farmer managed seeds systems. 2.Number of farmers accessing and planting quality farmer managed seeds	NG (Ministry of Agriculture), KARLO, GERRI,KEPHIS, HCD	Provide extension services Establish demonstrations sites Provide capacity building	Private sector, CBOs, NGOS				500M
	v) Policy and enabling environment and funding of genetic resources centres for indigenous/locally managed seed and livestock breeds.	1. Number of policies and legislations recognising and promoting farmer managed seed systems (FMSS) 2. Increased funding to GERRI and other genetic resource centres/seed banks	NG (Ministry of Agriculture), KARLO, GERRI,KEPHIS, HCD	Provide extension services Establish demonstrations sites Provide capacity building	Private sector, CBOs, NGOS				1300m **Grand Total OB I 9325M**

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Strategic objective 2: Sustainable consumption and transition towards healthy, diverse and sustainable diets for all						
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**	**Priority Time line (ST< 3 yrs; LT> 3 yrs)**		**Indicative Budget (KES Billions)**

			NGOK	**CGOK**	**Other SH**			
1. Facilitate the transition towards healthy, safe and sustainable diets for all.	i) Promote consumption of diverse safe and healthy diets in communities, public and private institutions;	1Number of diverse foods available in a local area 2.Number of households consuming diverse safe and health diets in the community 3.The % of household that are aware of diverse and safe foods 4.% level of contamination (physical and microbial l) of food 5.Household diversity score 6.% of diverse foods procured by public and private institutions 7.# of food safety inspections and verification reports that are publicly available. 8. Number of train ing session conducted on diverse, safety and sustainable consumption 9. Number of participants attending trainings	MoH, MoALD, Ministry of trade, KNBS, MoE, AFA (to be included in another indicator)	Extensi on, marketi ng, capacity building	Private sector, NGOs-advocacy, Communities, farmer/produce r organizations	**LT, ST,MT**		**500M**
	ii) Promote One Health approach (health interconnection between people, animals, plants, and their shared environment) to strengthen food safety, enhance resilience and minimize, control of diseases;	1.% of the level of awareness of one health approach 2.Number of available models/approaches that have been developed and tested to deliver one health 3. Number of investments and innovations promoted to strengthen one health approach 4. #of policies, legislations and incentives which promote one health approach 5. prevalence of non-communicable diseases which are diet related.	MoH, NARS(develo pment of modules),Ken ya veterinary board, KEPHIS MoALD, AFA, Trade, KEBS,NEMA	Capacit y building/ sensitiza tion/ext ension/a dvisory service	NGO/private sector, farm organization, traceability companies	LT		500M

		6. Number of certified nature-based products used in preventing diseases in plant, human and animals. # training sessions to promote one health approach # of participants sensitised on one health approach						
	iii) Enhance investment and innovations to reduce Food Loss and Waste (FLW);	1.Number of actors trained on FLW 2.Number of developed and tested technologies and innovations to reduce FLW 3.Number of actors adopting the technologies and innovations 4.Number of actors exposed through demonstrations of the innovations 5 .% Level of reduction for Food Loss and Waste 6.# of policies, legislations and incentives which promote one health approach	MoALD, MoH, MoEF, AFA, Minitry of ICT, Kenya National innovation Agency(KENIA)	Capacity building/ sensitization/extension/advisory service	NGO/private sector, farmer organization,traceability companies	LT, MT		1000M
	iv) Strengthen social initiatives in food Consumption and distribution (such as food rescue/donations) as part of sustainable consumption and sharing economy;	1.# of social initiatives around food donations and recovery. 2.# of actors sensitised and capacitated on food donations and recovery 3.# of available models/approaches that have developed and tested to deliver food donations 4. # of policies, legislations, regulations and incentives which promote on food donation and recovery 5.# of household benefiting from food donations. 6.# of food banks established	MoALD, MoH, MoEF, AFA, Minitry of ICT, Kenya National innovation Agency(KENIA), MoE	Capacity building/ sensitization/extension/advisory service CG-identify the marginalised groups to be given food, confirmation and	Industry associations ie RETRAC Private sector-help in donation of food	MT		1000M

				certification of food for human production.				
	v) Promote digital food platforms for procurement of safe, nutritious, and affordable foods.	1.Number of platforms for procurement of safe and nutritious and affordable 2.Number of digital food platforms that have been developed and tested 3. Level of awareness on existing digital food platforms 4.Number of actors using digital platforms 5.# of policies, legislations, regulations and incentives which promote food donation and recovery 6. # of sensitization forum on existing and use digital food platforms	MoALD, MoH, MoEF, AFA, Minitry of ICT, Kenya National innovation Agency(KENIA), MoE	Capacity building/ sensitization/extension/advisory service	Private sector-help in donation of food	ST,MT, LT,		250M (5.3M per county)
2. Promote transition to a circular food system	i) Strengthen awareness creation among stakeholders on different models and approaches of circularity in food systems;	.1.Number of circular food system approaches developed and tested 2.Number of platforms organized to create awareness among stakeholders on different models of circularity in food system 3.Number of actors trained on circular food systems 4.Number of actors adopting the circular food systems 5.Number of actors exposed through demonstrations 6.# of policies, legislations and incentives which promote circular food systems	MoALD, MoH, MoEF, Research institutions AFA, Kenya National innovation Agency(KENIA	Capacity building/ sensitization/extension/advisory service	NGO, Private sector-help in circularity in food system	ST, MT		9000M (2.1M per county)

	ii) Enhance mechanisms for food waste management (reduce, recycle, reuse) among food system stakeholders;	1.Number of models and approaches for food waste management .2. Number of enterprises accessing green funds for circularity in food waste management. 3.Number of actors sensitized on circularity in food waste management. # of sensitization forums organized	MoEF,NEMA MoALD, MoH, Research institutions	Capacity building/ sensitization/extension/advisory service, licensing	NGO, Private sector-	ST,MT,LT		200M
	iii) Establish and strengthen partnerships among stakeholders on circularity initiatives in the food system;	1.Number of partnership on circularity established. 2.Number of initiatives accessing funding through partnerships 3. Number of actors receiving mentorship and coaching through partnerships	MoEF, MoALD, MoH, NARS,AFA,NEMA	Capacity building/ sensitization/extension/advisory service, licensing	NGO, Private sector,FARMER ORGANIZATIONS	ST, MTLT		100M
	iv) Provide economic and financial incentives to promote circularity in the food system.	1.Numberof incentive developed and tested 2.Level of awareness on economic and financial incentives available. 3.No of actors accessing funding for circularity initiatives	MoEF, MoALD, MoH, NARS, Ministry of trade	Capacity building/ sensitization/extension/advisory service	NGO, Private sector, trade associations	ST,MT, LT		500M
3. Promote consumption of indigenous foods and protection of traditional food culture	i) Promote behaviour change to increase consumption of traditional and indigenous foods through awareness campaigns, and development k0of recipes and transfer of food preparation skills;	1.Number of awareness campaigns to increase consumption of traditional and indigenous foods conducted. 2.Number of recipes for indigeneous foods developed 3.# of consumers expressing Changes in in	MoALD, MoH, MoE NARS, Ministry of culture and heritage-NMK	Capacity building/ sensitization/extension/advisory service,	NGO, Private secto-hotel, restaurant and café teria(HORECA), MEDIA	ST,MT,LT		850M

		consumptionof indigeneous foods 45.Number of digital food platforms that have been developed and tested 6.Level of awareness on platforms promoting behaviour change on consumption of traditional and indigenous foods 7.Number of actors using digital platforms 8.% of policies, legislations, regulations and incentives which promote indigenous food and associated culture						
	ii) Promote cultural food / harvest festivals integrated into national and county government plans;	1.Number of food/harvest fairs conducted 2..Number of county and national plans prioritizing indigenous foods 3..Number of events including intergenerational learning and transfer of knowledge.	Ministry of culture aand heritage-NMK, MoE MoALD, MoH, NARS	Capacity building/ sensitization/extension/advisory service, organizing food fair	NGO, Private sector-,media, development partners	ST,MT, LT		250M
	iii) Support documentation and information sharing on traditional foods and associated cultures;	1.Number of policy papers developed on indigenous foods and culture. 2.Number of documentation on electronic and print media 3 number of people aware of . traditional knowledge systems and culture on food 4. Number of training manuals on traditional foods and cultures in the extension and education system.	NARS, Ministry of culture aand heritage-NMK, MoE MoALD, MoH, Ministry of ICT	Capacity building/ sensitization/extensioN/ advisory service,	NGO, Private sector,Media	ST, MT, LT		500M

	iv) Strengthen the utilization of digital platforms to promote traditional foods and cultures.	1.Number of digital platforms promoting traditional foods and cultres 2.Number of actors utilizing digital platforms 3.Number of digital platforms for promoting traditional foods 4.Number of actors using digital platforms on indigenous foods and culture	Ministry of culture and heritage- NMK, MoE MoALD, Ministry of ICT	Capacit y building/ sensitiza tion/ext ensioN/ advisory service,	NGO, Private sector,media	ST,MT,LT		200M

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Strategic objective 3: Enabling environment and incentives for scaling up agroecology							
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority Time line (ST< 3 yrs; LT> 3 yrs)**	**Indicative Budget (KES Billions)**
			National Govt	**County Govt**	**Other Stakeholder**		
1. Strengthen the policy, legal and institutional framework for agroecology	i) Enhance policy coherence to eliminate obstacles and biases that work against the agroecological transition and mainstream agroecology across relevant sectors;	1.Number of conflicting policies with principles and elements of agroecology aligned. 2.Number of policies aligned to the principles and elements of agroecology	MOALD	Provide extensio n services. Establish demonst rations sites Provide capacity building	NGOs; CBOs Private Sector	ST	5 Million
	ii) Establish comprehensive performance metrics and indicators for monitoring and evaluation of agroecology-related policies, plans and finance;	1. Number of agroecology metrics developed and aligned with other national and international commitments and targets (based on the principles of agroecology) -7 metrics 2. Number of policy implementation, tracking and reporting tools and outputs 3. Budgetary allocations and other financial flows to agroecology interventions	MOALD, KIPPRA,N ARS	Provide extensio n services Establish demonst rations sites Provide capacity building	NGOs; CBOs Private Sector	MT ST to MT	35 Million(5 million per metric) 10 million for tracking tools

	iii) Support counties to domesticate and implement agroecology strategy;	1.Numberof counties domesticating the agroecology strategy 2.Number of counties implementing the strategy	CASSCOM JASCOM	Provide extension services Establish demonstrations sites Provide capacity building		LT	705 Million (15million per county) 3 Billion
	iv) Support the domestication of the relevant protocols including the International Treaty on Plant Genetic Resources for Food and Agriculture and the development of legal framework for Access and Benefit Sharing (ABS) relevant in agriculture and food systems;	Domestication of the international treaty on plant genetic resources and ABS in agriculture and food systems Number of counties integrating ITPGRFA and ABS in the programmes	MoE, MoALD, NARS GERRI	Provide extension services Establish demonstrations sites Provide capacity building	Farmers, CSOs, NGOs,	ST	10 million 75 million
	v) Establish multisectoral coordination mechanism for agroecology	1. Number MS coordination platforms established at national and county levels 2. Number of operational MS coordination platforms	NG	CG	CSOs, NGOs, farmers, development partners	ST	50 million
2. Develop and promote sustainable financing models for scaling up of agroecology	i) Mainstream agroecology in the sector plans and budgetary allocations at both national and county government;	environment, trade, education/research, CIDPs, annual plans, etc) where agroecology is mainstreamed 2. Actual budgetary allocations and financing to agroecology initiatives 3. Number of diversified funding sources available to agroecology (e.g. partner funding, PES, adaptation funds, investment funds, PPPs, etc	NG (Treasury)	CG	CSOs, NGOs, development partners, private sector	ST, MTand LT	10 million
	ii) Allocate investments and finance towards agroecology;	1. % increase in public and private funding for agroecology 2. Number of agroecology flagship projects 3. Value of new private sector investments in agroecological value chains 4. MSPs actively mobilizing resources for agroecology initiatives	NG (Treasury), MoALD, Trade,	CG	CSOs, NGOs, private sector, development partners, philanthropies, etc.	LT	50 Million

	iii) Create awareness and support agroecology actors to access existing and emerging green and climate financing as a lever for mainstreaming the agroecological transitions;	1. Number of actors aware of and accessing agroecological funds 2. Value of green and climate financing received for agroecology initiatives 3. Number of green funds created, available, and accessible for agroecology initiatives 4. % level increase of green funding for agroecology	NG, MSPs,	CG	CSOs, NGOs, private sector, development partners, philanthropies, etc.	ST, MT and LT	35 million
	iv) Pilot existing subsidy schemes to support agroecological farming practices;	1. Number of incentive schemes for agroecology 2. Number of piloted and scaled incentive schemes 3. Finalisation and implementation of the Draft National Green Fiscal Incentives Policy Framework	NG(Treasury, MoALD,	CG	CSOs, NGOs, private sector, development partners, WB, philanthropies, etc.	ST	25 Million
	v) Strengthen resource mobilization and funding for agroecology through Public and Private partnerships and other new financing mechanisms such as PES.	% increase of funding through PPPs Resource Mobilization strategy for agroecology initiatives	ISFAA JASCOM	CASCOM	CSOs	LT	20 million
3.Develop and create incentives for scaling up agroecology	i) Facilitate markets for agroecological inputs, products and services and create a national subsidy program for agroecology inputs and services;	1. Number of barriers to agroecological markets identified and addressed 2. Number of agroecological operators (traders, businesses, etc) actively engaged in agroecological enterprises 3. Value of agroecological inputs, products, and services generated 4. Number operational local/territorial/regional markets connecting producers and consumers through shorter supply chains	NG (policies, legislation, stds,	CG (creating markets, linkages,	CSOs, NGOs, private sector, development partners, farmers, KOAN,	ST , MT and LT	30 million
	ii) Build capacity of smallholder farmers and other actors in the agroecology sector to access benefits from market-based conservation programs such as carbon credits, eco labelling and PES schemes;	1. Number of stakeholders knowledgeable on the public and private benefits of agroecology 2. Number of stakeholders knowledgeable on different benefit schemes (e.g. PES, ABS, etc)	NG(MoE, CCD,	CG	CSOs, NGOs,	MT	50 Million

4. Strengthen markets and trade for agroecology products and services	i) Promote use of agroecology foods and products in public and private institutions (schools, hospitals, correctional facilities), social protection and humanitarian relief programs;	1. Number of public and private institutions purchasing agroecological products, inputs and services (prisons, schools, hospitals, hotels, universities, supermarkets, humanitarian orgs.) 2. Availability of diverse and nutritious foods in school feeding programs	NG	CG	NGOs, CSOs, development partners, farmers, private sector	LT	50 Million
	ii) Implement mechanisms for low-cost, participatory certification systems including standards and labelling of food products and farming practices that align with agroecology;	1. Number of products compliant with inclusive participatory agroecological/organic standards 2. Number of farmers producing in compliance with agroecological standards 3. Diversity of agroecological quality assurance mechanisms developed	NG (KEBS, AFA,	CG	NGOs, CSOs, development partners, farmers, private sector	ST , MT	30 Million
	iii) Establish and/or strengthen agroecology actor cooperatives to support the local and international marketing of products and services.	1. Number of Agroecology market and aggregation actor platforms developed 2. % increase in organic/agroecological exports 3. Value of agroecological exports 4. Value of agroecological products in local markets	NG (MoALD, Trade, traesury, etc)	CG	NGOs, CSOs, development partners, farmers, private sector	ST, MT and LT	5 million per year 50 Million
TOTALS							4,24 Billion

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Strategic objective 4:Research, innovation, training, and co-learning on agroecological approaches							
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority Time line (ST< 3 yrs; LT> 3 yrs)**	**Indicative Budget**

							(KES Billions)
			NGOK	**CGOK**	**Other SH**		
1. Prioritize research on agroecology in the country's National Agriculture Research System (NARS)	i) Identify capacity gaps of public and private stakeholders as a basis for capacity building on agroecology practice, training, and research;	1.Number of stakeholders (public and private) who capacity gaps in AE have been identified 2.Number of programs that uses a documented gaps as a basis of capacity building on AE 3.Number of stakeholders trained on the identified gaps in AE 4. Number of stakeholders who are disseminating the identified gaps in AE 5.Number of training institutions implementing programs to address AE capacity gaps 6.Number of research projects that targets identifies AE capacity gaps 7..% of policies, legislations, regulations and incentives that promote capacity building of stakeholders 8.Number of NARS stakeholders who have intergrated AE research and trainings in their plans 9.Number of stakeholders integrating co-learning as part of capacity building for AE	NARS MoALD, MoE, ,KALRO	Extension, capacity building	NGOs, Private sector, Farmer organizations	ST	2500M .
	ii) Promote multi-stakeholder partnerships to support agroecological research, agenda setting and information sharing;	1.Number of MSP formed to support agroecological research agenda setting and information sharing 2.Development of research agenda and plan on AE 3.Number of stakeholders that are aware and implementing the Agroecology research plan and agenda 4. Number of collaborative research projects on AE emerging from different MSPs	NARS, MoE, MoALD, KALRO, NMK, JASSCOM	CASSCOM, extension, capacity building,	NGO,Private sector, media, Farmer organizations	ST	2700M

	iii) Promote participatory validation and evidence-based assessment of the effects and impacts of agroecological approaches on key aspects of the food systems such as food security and nutrition, resilience and food safety;	1.Number of different types of stakeholders involved in the designing, planning, implementing and validation of AE studies 2.Number of studies that combines different element of the food system 3.Number of research dissemination activities that are targeting users of the research outputs 4.Number of users adopting research output 5.increase collaboration and partnership for application and utilization	NARS, MoE, MoALD, Ministry of ICT	Extension, capacity building, farmer mobilization	NGOs, media, farmer organizations, private sector, intervention beneficiaries	LT	600M
	iv) Enhance resource mobilization for agroecology research and extension, including allocating share of the national research funds to agroecology;	1.% increase on funding for agroecological research and training 2.% of government funding allocated to research and extension relevant to AE 3.# of development partners supporting Agroecological research and extension 4.% of funds allocated to AE research and extension by different stakeholder 5.Availability of a coordination mechanism for efficient management of AE funds. 6.Increase the capacity of stakeholders to develop proposal for funding 7.increase collaboration and partnership for application and utilization.	Ministry of Finance (assessment of stakeholder readiness for funds), MoALD, NARS, MoE, JASSCOM	CASSCOM, Extension, capacity building	NGOs, Private sector, farmer organizations, development partners, intervention beneficiaries	LT	600M
	v) Strengthen innovation platforms to support dissemination of agroecology research and information;	1.Number of digital platforms for disseminating information on agroecology 2.Number of innovation platforms(digital and physical) developed and tested. 3.Number of suitable and scalable innovations developed	NARS, MoE, Ministry of ICT, MoALD, MoE, Kenya Innovation Agency (KEINA)	Extension, capacity building, mobilization, dissemination	NGO, private sector, farmer and farmer organizations, media	LT	800M

		4.Level of awareness of platforms 5.Number of actors using digital platforms 6.% of policies, legislations, regulations and incentives which digital and physical innovations					
	vi) Integrate Agroecology in the agricultural education curricula at all levels.	1.Number of programs integrating AE in Agricultural education curricula at all levels 2.Number of trainers/educators (teachers,lecturers,tutors) trained on Agroecology 3.Integration of AE in to the basic education assessment. 4.Number of education institution that have intergrated Agerocology in their curriculum. 5.Number of people that have received vocational training on Agroecology. 6.Number of courses/programs on AE in training institutions. 7.Number of graduates in AE courses	MoE, Basic and higher education institutions, MoALD, NARSMoE	Extension, capacity building, mobilization and dissemination	NGO, Private sector, development patners,	MT	950M
2. Strengthen extension and centres of excellence to promote agroecology	i) Facilitate technical assistance and capacity building to both public and private extension service providers to deliver effective extension in agroecology;	1.Number of extension service providers trained on Agroecology. 2.Number of centers of excellence facilitating technical assistance and capacity building on AE 3.Number of people getting the technical assistance and capacity building 4.Number of centres of excellence with strengthen institutional and training of services delivery. 5.Developed creteria for centre of excellence in AE 6.distribution of centres of excellence in AE	MoALD, MoE	Extension, capacity building	NGO, Private sector	MT	910M

	ii) Mainstream agroecology in public and private extension services;	1.Number of programs integratin AE in Agricultural extension 2.Number of extension staff that have been trained on Agroecology 3.Integration of AE in the training curricula of extension personnel. 4.Numberof Counties that have received training on agroecology	MoALD, MoE	capacity building, mobilization and dissemination	NGO, Private sector, development patners,	LT	800M
	iii) Promote appropriate extension approaches and methodologies towards co-creation and sharing of knowledge	1..Number of extension models developed 2. Levels of adoption of different mapped/developed extension models by actors. 3.increase collaboration and partnership for in the development and utilization of Agroecology extension approaches.	Ministry of culture and heritage-NMK	Extension, capacity building	NGO, Private sector, media	LT	250m
	iv) Establish an agroecology knowledge repository (including hubs and centres of excellence) to facilitate documentation and sharing of agroecological practices, while honoring local sovereignty and ownership of the knowledge	1.Number of centre of excellence on agroecology established 2. Number of actors using the repository 3. Number of users applying knowledge from the repository 4.Number of mentions/references to the repository in media and publications	Ministry of culture and heritage-NMK	Extension, capacity building	NGO, Private sector, media	LT	165M
	v) Tailor extension services and training to meet the needs and constraints of vulnerable and marginalized groups, including promoting social equity.	1.Number no of sensitization meetings targeting women, youth, PLWDs, indigenous communities to raise awareness on agroecology 2.Number no of training targeting women, youth, PLWDs, indigenous committees 3.Number of women , youth, PLWDS, and indigenous community groups that have	MoALD, NLWD, MoE, State department of gender	Extension, capacity building	NGO, Private sector, Farmer organization	ST	490M

		been trained and adopted agroecology.					
3. Revitalization of traditional ways (culture)and associated indigenous knowledge (changes in place)	i) Document and promote local knowledge and practices that support agro ecology	1.# No of awareness campaigns to increase consumption of traditional and indigenous foods conducted. 2..No of publications documenting traditional food and indigenous knowledge 3 .# of consumers expressing Changes in in consumptionof indigeneous food 5.% of policies, legislations, regulations and incentives which promote local knowledge that supports agroecology 6.increase collaboration and partnership promote local knowledge and practices that support agro ecology	MoALD,	Extension, capacity building	NGO, Private sector, Farmer organization	ST,MT,LT	250M
	ii) Establish demonstration centres on innovative agroecology practices by farmers	1.# of demonstration centres established	MoALD	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer organization	MT, LT	160M
	iii) Promote awareness and education targeting local communities on ABS issues relevant in agriculture and food systems (seed and food harvest festivals, exchange visits etc)	1.# of awareness campaigns 2.# of communities able to articulate different ABS issues 3.# of natural resources mapped in communities.	MoEF, MoE, MoALD, NMK	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer organization	ST,MT	50M
	iv) Promote and mainstream consumption of diverse indigenous foods in public institutions	1.# of diverse foods available in public institutions 2. The # of public institutions that are aware of diverse and safe food 3.# of public institutions consuming diverse safe and healthy diets. 3.4.% of diverse, safe and nutritious indigenous foods procured rom AEEs	MoALD, MoH	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer organization	ST,MT	200M

	v) Support mapping and documentation of indigenous seed varieties to enable local and indigenous communities to sustain and revitalize their seed and food cultures for sustainability of their cultures (community registers, county register and national repository)	1.Availability of a repository of mapped seeds in Kenya 2.. .% of funding for documentation of indigenous seed varieties different stakeholder 3.Increase the capacity of stakeholders to map and document the indigenous seed varieties and associated culture	MoALD, NMK	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer incetorganization	ST	300M **Grand Total OB4 11725**

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Strategic objective 5: Social equity, inclusion and participatory governance in the food system							
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority Time line (ST< 3 yrs; LT> 3 yrs)**	**Indicativ e Budget (KES Billions)**
			NGOK	**CGOK**	**Other SH**		
1. Facilitate access and control to productive resources by women, youth, vulnerable groups, marginalized groups and indigenous communities	i) Strengthen mechanisms that guarantee secure access to productive resources required for agroecology transitioning;	1. # of women, youth and vulnerable communities aware of the user and access rights to productive resources 2. # of women, youth and vulnerable communities with secure access and use rights to sustainable use of productive resources.	NG State department of Gender; Ministry of lands; MOALD	CG	NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	LT	100 Million
	ii) Scale up interventions which would allow women as well as men to better combine reproductive and productive work;not clear on the link to agroecology activity				NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	LT	
	iii) Promote labour saving technologies that meet needs of women and men and also other vulnerable groups;	1.# of labour saving technologies developed/ promoted # of Inclusive labour saving technologies developed/ promoted	NG State department of Gender; Ministry of		NGOs/CSO Private sectors Kenya Farmer Organization	ST	15million

		2.# Households adopting and using labour saving technologies to support transition to agroecology	lands; MOALD,		Farmer organizations		
	iv) Promote the development and scale up of financial products that meet the needs of vulnerable groups.	1.# Barriers to financial access identified and addressed. 2.# of households aware of existing financial services that support vulnerable groups to transition towards agroecology. 3.# of financial products available to vulnerable groups to support transitioning to agroecology.	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	LT	10 million
2. Enhance equitable participation and meaningful engagement in food systems transformation	i) Strengthen participatory food system governance to address power inequalities in agriculture and food systems;	1.# of farmer organizations strengthened/developed to support food systems transformation 2.# of MSPs (national and Sub national) established to support food systems transformation. 3.# of communities advocating for policies and regulations that support agroecology transitioning	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	LT	50 million
	ii) Enhance recognition and fulfillment of producer and consumer rights to empower people most at risk of food insecurity and malnutrition;	Communities and consumers are aware and exercise their right to food.	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	ST/MT/LT	36 million
	iii) Increase the capacity of communities for engagement in the food system decision making policy processes.	1.# of farmer organizations strengthened/developed to support food systems transformation 2.# of MSPs (national and Sub national) established to support food systems transformation. 3.# of communities advocating for policies and regulations that support agroecology transitionin	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations	ST/MT	30 million
TOTALS							241 Million