REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE AND LIVESTOCK DEVELOPMENT

NATIONAL AGROECOLOGY STRATEGY FOR FOOD SYSTEM TRANSFORMATION 2024 – 2033

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Foreword

Agricultural growth and development is crucial for Kenya's overall economic and social development. The sector contributes approximately 21.8% directly to the Gross Domestic Product (GDP) and 60% of export earnings. Further, 80% of the rural population rely on the sector as the 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 Goals 1 and 2. The sector continues to play a pivotal role in the realization of economic growth and poverty reduction. This is through the sector's contribution to food and nutrition security, provision of raw materials for agro-industry, employment creation and foreign exchange earnings.

In recognition of the importance of the sector, the Economic pillar of Kenya's Vision 2030 with its Fourth Medium-Term Plan and, the Bottom-Up Economic Transformation Agenda (BETA) have prioritized agriculture as one of the five pillars of our economic recovery plan. The Agricultural Sector Transformation and Growth Strategy 2019 -2029 (ASTGS) also recognizes that the sector can deliver the 10% annual economic growth that is envisaged under the economic pillar of Vision 2030. Thus, there is need to embrace sustainable production systems to enhance productivity in the realization of climate risk mitigation and adaptation measures to ensure increased productivity, better incomes and, 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 Government of Kenya recognizes the important role agroecological approaches can play in transforming agriculture and food systems. The Agriculture Policy of 2021 seeks to promote Agroecology farming practices for crops, livestock and fisheries. The National Agroecology Strategy for Food System Transformation (NAS - FST), 2024 - 2033 provides a coordination mechanism for all the actors in the 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, persons with disabilities, indigenous people and local communities.

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 deplete them, to deliver optimal productivity and long-term food security and well-being.

Dr. Andrew M. Karanja, PhD
Cabinet Secretary
Ministry of Agriculture and Livestock Development

Preface

The Government of Kenya is committed to the realization of food and nutrition security for all the citizens through increased agricultural productivity. Currently, agricultural production is negatively affected by among other factors; unsustainable land and environment management practices, dependency on unreliable rainfed agriculture, high cost of inputs, low technology adoption and inadequate access to markets. The increasing demand for safe, healthy and nutritious food, combined with a growing global population and the escalating impact of climate change and disasters, are also exacerbating the food security challenges in the country.

Over the past decade, Kenya has been experiencing successive impacts of climate change resulting to substantial socio-economic losses. Climate change impacts 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. The current food production and consumption practices not only exacerbate climate change impacts but also lead to loss of biodiversity. There is a need to transform the current food production systems to become more sustainable and resilient.

Agroecological innovations are based on the co-creation of knowledge, combining science with the traditional, practical, and local knowledge of producers. By enhancing autonomy and adaptive capacity, agroecology empowers producers and communities as key agents of change. There exists many stakeholders in the agroecology space each handling various activities geared towards sustainable production systems. Currently, agroecology related activities are uncoordinated and there is duplication of efforts by different stakeholders. To address the above effectively and efficiently, agroecology has to be dynamic, well-coordinated continuous process.

This Strategy, aims to contribute to a sustainable transformation of the food system in Kenya to ensure food and nutrition security, climate resilient livelihoods and social inclusion. It seeks to foster a transition to resilient and sustainable agriculture and food systems through agroecological approaches and promote sustainable consumption of healthy diets for all. In addition, the Strategy facilitates the development of sustainable

production systems for crops, livestock, and fish in line with the aspirations of the Vision 2030, BETA Agenda, the ASTGS and 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 we wish to appreciate for their invaluable input. We commit to support the implementation of the Strategy and urge stakeholders to join hands in ensuring that the intended objectives are realized.

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Acknowledgement

The conceptualization and development of the National Agroecology Strategy for Food System Transformation (NAS-FST) was a stakeholder-driven, participatory, and collaborative process with many players involved in providing technical, financial, and other resources. Working under the umbrella of the Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA), the Core Team made up of representatives from the National and County Governments, civil society, private sector, research and academia, and farmer organizations provided strategic leadership and guidance to the process. The Core Team members included GIZ, PELUM Kenya, Biovision Foundation, Murang'a County, Vihiga County, ICRAF, Action Aid, WWF, University of Nairobi (UoN), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya Organic Agriculture Network (KOAN), Hand to Hand, Heinrich Boell Foundation, and private agroecology experts. Such a wide collaboration is reflective of the agroecological principles of synergy, co-creation, and participation. It will become even more critical in the implementation of the NAS-FST.

We are grateful to the Ministry of Agriculture and Livestock Development (MoALD) in providing unwavering support and a conducive environment for the development of the Strategy. Appreciation goes to the Policy Department and the Engineering Section for taking their time to understand the concept of agroecology and its role in transforming food systems as well as bringing this to bear in the NAS-FST. Similar appreciation goes to the JASSCOM and SWAG for their comments and inputs throughout the process. The insightful comments from the members of the SWAG showed their deep knowledge of and support for agroecology as an important approach for addressing current food systems challenges. Indeed, the extension of the title of the Strategy to read "for Food System Transformation" was a suggestion from the SWAG.

Lastly, the donors who have contributed through financial and other support ensured that the Strategy became a reality. The mantra for the fundraising was that no support is too little. In this regard, we wish to thank the European Union (DeSIRA program) and the German Federal Ministry for Economic Cooperation and Development (BMZ), PELUM Kenya, Biovision Foundation, Action Aid, Hand in Hand EA, WWF, ICRAF on

behalf of the Agroecology Transformative Partnership Platform (TPP), and BIBA Kenya for their support. While the Strategy has been developed through such support, the next critical phase which is the implementation of the Strategy will require all hands on deck. We appeal to all interested stakeholders and players to join us in realizing the vision of a resilient and sustainable food systems by supporting the implementation of the NAS-FST. In this regard, we wish to thank the European Union (DeSIRA Program), the German Federal Ministry for Economic Cooperation and Development (BMZ), PELUM Kenya, Biovision Foundation, Action Aid, Hand in Hand EA, WWF, ICRAF on behalf of the Agroecology Transformative Partnership Platform (TPP) and the Agroecology Initiative of the CGIAR, and BIBA Kenya for their support.

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Executive Summary

There is increasing recognition that food systems in Kenya – the way we produce, distribute and consume food – are not sustainable and are therefore unable to sufficiently meet the needs of our growing population. While agricultural output grew by 10% in the 2018-2022 period, the burden of malnutrition continues to persist. The proportion of the population with severe food insecurity increased from 15% in 2016 to 28% in 2023, one in five children are stunted while one in four women are anaemic. Worse still, the country's food system is heavily impacted by global climate change while also contributing to a larger share (over 60%) of greenhouse gases (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 our 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; healthy and nutritious; inclusive and enabling sustainable livelihoods for all stakeholders; environmentally sustainable and; resilient. This plan is anchored on the various international commitments including UN Food Systems Summit (2021) and the Global Stocktake at the UN Framework Convention on Climate Change Conference of the Parties 28 (UNFCCC COP 28). These frameworks recognize agroecology as an approach to facilitate a transition towards more productive, sustainable and inclusive food systems. Agroecological approaches 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 (NAS - FST) 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.

This Strategy has identified five challenges facing our food systems. First, the country has fragile agri-food systems characterized by declining productivity in crops, livestock and fisheries, which is closely associated with degradation of land, water, soils, and other

ecosystems supporting food production. Second, limited access to and consumption of safe, diversified, and healthy diets which 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 challenges, 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, (v) 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 Agrobiodiversity and Agroecology (ISFAA) and National Technical Committee on Agroecology at the national level, while at the devolved level, a Technical Working Group will be established within the County Agriculture Sector Steering Committee (CASSCOM). Strategy implementation will require about KES 26.8 Billion drawn from the public and private sources.

Definition 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. Agroecological approaches use natural processes to optimize the interactions between plants, animals, humans and the environment while taking into consideration local and scientific knowledge and the social aspects that advocate for a sustainable and fair food system. Agroecology covers all ecosystems including agroecosystems, aquatic ecosystem (freshwater and marine), silviculture, terrestrial (forest ecosystem, savannah/ grassland ecosystem), desert and tundra ecosystems. It incorporates a set of practices including organic agriculture, regenerative agriculture, permaculture, ecological agriculture, soil and water conservation and management, agroforestry and, integrated pest management.

Food System

It encompasses the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded.

Food System Transformation

Food system transformation refers to the comprehensive reorganization of food production, distribution, and consumption to ensure food and nutrition security and environmental sustainability through agroecological approaches.

Healthy and safe diet	This is a diet that consists of adequate intake of fruits, vegetables, legumes and clean drinking water; reduced intake of free sugars and fats; and food that is not contaminated with potentially harmful bacteria, parasites, viruses, toxins and chemicals.
Sustainable consumption	In the context of food systems, this refers to practices in food consumption that conserve natural resources, enhance environmental quality and promote social equity.
Vulnerable groups	Vulnerable groups in society are those segments of the population that are more likely to suffer from disadvantages, marginalization, or discrimination due to various socioeconomic, physical, or psychological factors. Vulnerable groups within society, including women, older members of society, persons with disabilities, children, youth, members of minority or marginalized communities, and members of particular ethnic, religious or cultural communities.
Producers	Actors responsible for planting, cultivating and harvesting of crops and trees or rearing livestock and fisheries to produce food and other non-food products.
Productive resources	These are the factors of production used to produce goods and services and includes in natural resources, labour, capital and entrepreneurship.
Value chain actors	These are food system actors involved in producing, processing, distributing, marketing, retailing, and consuming food. They include input suppliers, producers, processors, distributors/ wholesalers, retailers and consumers.

Abbreviations and Acronyms

ABS	Access and Benefit Sharing
ASALs	Arid and Semi - Arid Lands
ASTGS	Agricultural Sector Transformation and Growth Strategy
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
CIRAD	French Agricultural Research Centre for International Development
GDP	Gross Domestic Product
GHGs	Greenhouse Gas Emissions
FAO	Food and Agriculture Organization
FLW	Food Loss and Waste
HPLE	High-Level Panel of Experts
IFAD	The International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
IPLC	Indigenous People and Local Communities
ISFAA	Intersectoral Forum on Agrobiodiversity and Agroecology
JASSCOM	Joint Agricultural Sector Steering Committee
KEPHIS	Kenya Plant Health Inspectorate Service

KNBS	Kenya National Bureau of Statistics
MoALD	Ministry of Agriculture and Livestock Development
MTP	Medium Term Plan
NAS - FST	National Agroecology Strategy for Food System Transformation
NDC	Nationally Determined Contribution
NSAs	Non-State Actors
PES	Payment for Ecosystem Services
PESTEL	Political, Economic, Social, Technological, Environmental, and Legal
PWDs	People with Disabilities
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
TWG	Thematic Working Group
USDA	United States Department of Agriculture
UN	United Nations
UNEP	United Nation Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change

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Chapter 1: Introduction

1.1 Background

1.1.1 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 15.1 trillion in 2023 (KNBS, 2024). The agriculture sector remains the dominant sector accounting for 21.8% of Gross Domestic Product (GDP) in 2023 (KNBS, 2024). While agricultural output grew by 10% in the period 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 2023. Similarly, the prevalence of undernourishment rose from 22.3% in 2013 (10 million people) to 29.4% in 2022 (14.7 million), erasing almost two decades of progress (FAO *et al*., 2023).

The need to feed the rising population (from 40 million in 2009 to 53 million in 2024), has led to the increased expansion of agriculture into natural habitats, posing a significant threat to biodiversity. Further, the intensity of extreme weather events including droughts, heavy rains and floods (IPCC, 2023) have worsened over the years with serious negative effects on food security. For example, between 2020 and 2022, Kenya and her East African neighbours experienced a very severe drought, the longest in 70 years (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).

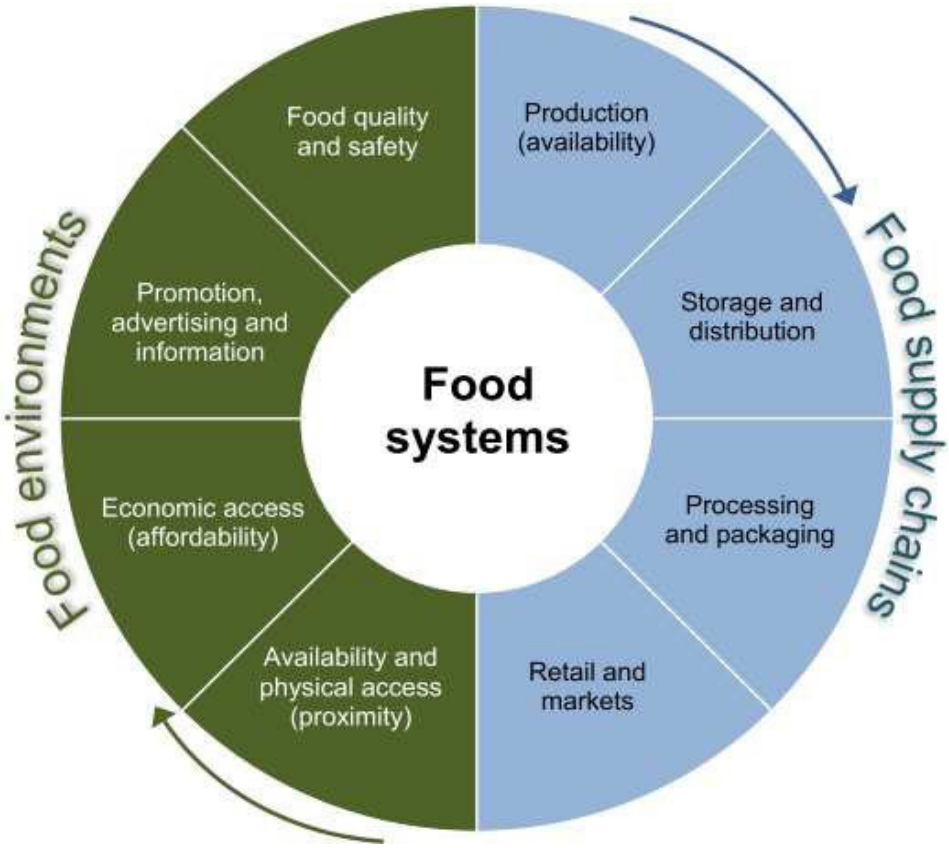

Figure 1: Simplified Diagram for the Food System (Source: HPLE, 2017)

Food systems play a vital role in nourishing humanity, supporting well-being, and sustaining livelihoods. However, they face many challenges across its components including production, distribution, consumption of food and, food waste and recovery. In addition, issues like gender and social inclusion intersect with these challenges, complicating efforts to create equitable and sustainable systems. 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.

Kenya's food production system which includes agriculture, livestock, forestry, and fishing, is characterized by low and declining productivity associated with poor soil health, poor agricultural practices, deteriorating ecological status of the environment and climate change. Productivity of all key crops in cereals, vegetables and pulses is lower than their potential (Central Bank of Kenya, 2023). The current production system is also characterized by a trend towards monoculture which reduces agricultural biodiversity. This is further compounded by reliance on external inputs which increases the vulnerability of farmers while also reducing returns from their farming practices. Moving towards greater use of 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 to and control of genetic resources such as seed and livestock breed (Ministry of Agriculture, Livestock, Fisheries and Co-operatives, 2020). Limited sovereignty of seed and other genetic resources limits the types of food farmers can produce which negatively impacts nutrition. The Intergovernmental Panel on Climate Change (IPCC) 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. As of February 2023, over 4.4 million people were experiencing high levels of acute food insecurity due to drought and consecutive years of below-average rainfall (NDMA et al., 2023). While sustainable agricultural production practices for climate change adaptation exist, their uptake is limited due to weaknesses in extension and training systems which often emphasize less on agroecosystem sustainability.

Beyond production, agricultural and food markets are characterized by poor aggregation arrangements and inefficient distribution systems. Smallholder farmers often face structural barriers that prevent them from accessing markets including, inefficient supply chains, discriminatory social norms and economic barriers for marginalized groups. There is pressing need to develop inclusive market systems that actively engage and benefit diverse actors including the poor and marginalized groups who are frequently excluded or even exploited by traditional market structures. Urbanization is also influencing change of diets towards more ultra-processed food and animal-

sourced proteins. This contributes to more lifestyle diseases 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 (FAO, European Union & CIRAD, 2023). Kenya has high levels of food loss and waste estimated at 20 - 40% of food produced (Liebetrau, 2019; TechnoServe, 2023). The Food Waste Index Report 2021 indicates that every Kenyan throws away about 99 kilograms of food every year which costs the economy KES 72 billion (UNEP, 2021).

The food system also faces governance issues such as inequitable access to resources such as land and finance (KNBS and ICF, 2023). While smallholders are central to the food systems transformation, their voices are most often ignored. This is made worse by limited funding to support research and development and the scaling up of sustainable agricultural practices. Budget allocations for agriculture have averaged 3.3% for national government and 8% for county governments (adapted from Controller of Budget, 2022; 2024). The combined investment is yet to reach Kenya's commitment to allocate at least 10% of national budgetary resources as per the Comprehensive Africa Agriculture Development Programme (CAADP). The foregoing suggests the need for agri-food system transformation.

1.1.2 The contribution of agroecology to food system transformation

Agroecology presents an opportunity to address many of the challenges facing our food system 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, and promoting closed cycles with minimal negative externalities. It is an integrated and holistic approach for systematically addressing the challenges related to food and agricultural production. It also facilitates mutually supportive interactions between household livelihood strategies, the ecological health of the farm systems and the broader food systems (HLPE, 2019). The approach applies principles and practices that protect longer-term absorptive and adaptive capacity of the agroecosystem. It regenerates farmers' natural assets rather than depleting them, thus delivering optimal productivity and long-term food security and well-being.

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 food system actors. By enhancing their autonomy and adaptive capacity, agroecology empowers food system actors as key agents of change. Agroecology places a strong emphasis on participatory processes that involves all stakeholders including women, youth and indigenous peoples. 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 is increasingly seen as a transdisciplinary science, a set of practices and a social movement. (Figure 2).

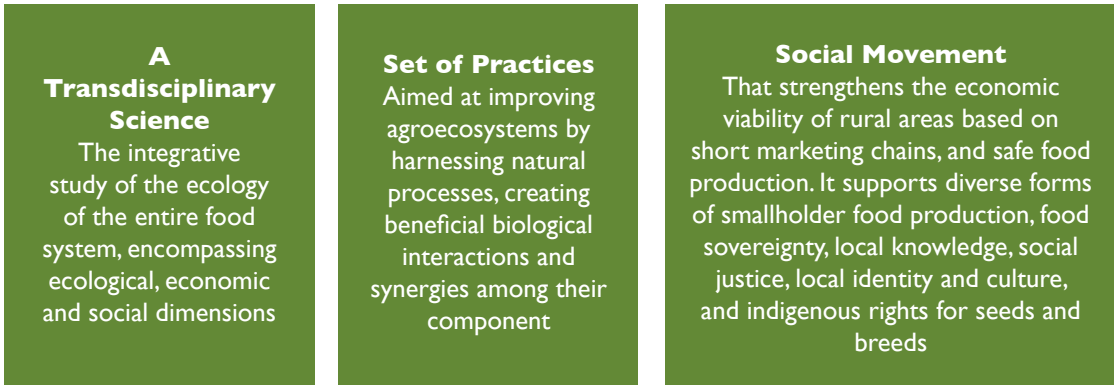

Figure 2: Dimensions of agroecology

The UN Food Systems Summit (2021) and the United Nation Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP 28) are among the global frameworks 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.

1. Recycling Preferentially use local renewable resources and close, as far as possible, resource cycles of nutrients and biomass	**6. Synergy** Enhance positive ecological interaction, synergy, integration, and complementarity among the element of agroecosystems (plants, animals, tree, soil, water)	**10. Fairness** Support dignified and robust livelihoods for all the actors engaged in food systems, especially small-scale food producers, based on fair trade, fair employment, and fair treatment of intellectual
2. Input Reduction Reduce or eliminate dependency on external inputs	**7. Economic Diversification** Diversify on farm incomes by ensuring small scale farmers have greater financial independence and value addition opportunities while enabling them to respond to demand from consumers	**11. Connectivity** Ensure proximity and confidence between producers and consumers through promotion of fair and short distribution networks and by re-embedding food systems into local economies
3. Soil Health Secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and by enhancing soil	**8. Co-creation of Knowledge** Enhance co-creation and horizontal sharing of knowledge, including local and scientific innovation, especially through farmer-to-farmer exchange	**12. Land and Resource Governance** Recognize and support the needs and interests of family farmers, smallholders, and peasant food producers as sustainable managers and guardians of natural and genetic resources
4. Animal Health Ensure animal health and welfare **5. Biodiversity** Maintain and enhance diversity of species, functional diversity and genetic resources and maintain biodiversity in the agroecosystem over time and space at field, farm and land scape scales	**9. Social Values and Diets** Build food systems based on the culture, identity, tradition, social and gender equity of local communities that provide healthy, diversified, seasonally, and culturally appropriate diets.	**13. Participation** Encourage social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems

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 (organic and inorganic), with a focus on achieving optimal nutrient balance
ii. Redesign of farming systems to increase system synergies on farms and across landscapes through diversity and, improved soil and animal health
iii. Establishes a close relationship among producers, consumer and food system actors
iv. Builds a new global food system that is not only sustainable but also helps restore and protect Earths life-support systems. This food system is based on participation, localness, fairness and justice (Gliessman, 2007)

1.2 Rationale for the National Agroecology Strategy

The Government of Kenya has prioritized food and nutrition security as a foundational pillar of its national development agenda. Despite the commitment, the growing population and the escalating impact of climate change and disasters are worsening the food and nutrition security situation in the country (IFAD, 2021). The food provisioning challenges are likely to remain a significant barrier to sustainable development, if they are not addressed. The challenge is more severe in Kenya's Arid and Semi-Arid Areas (ASALs) which are characterized by water scarcity, low and erratic rainfall, high temperatures, and fragile ecosystems. ASALs constitute approximately 80% of Kenya's land mass and are home to about 36% of Kenya's population or 18.7 million people (Ministry of Agriculture, Livestock, Fisheries and Cooperatives, 2021a).

The need to transform Kenya`s food system has been recognized through the development of Kenya's Food System Transformation Pathway Plan. A key challenge at hand, is how to design and operationalize strategies and plans to support the food system transformative agenda. Agroecology presents a pathway to address many of the challenges facing our food systems in a manner that is eco-friendly, resilient, and just. Agroecology is an integrated and holistic approach for systemically addressing the challenges related to food and agricultural production. It facilitates mutually supportive

interactions between household livelihood strategies, the ecological health of the farm systems and the broader food systems.

The existing policy framework including the Agricultural Policy 2021 and The Kenya Vision 2030 acknowledge the potential of agroecology in supporting food system transformation. However, Kenya does not have a specific strategy on agroecology upon which efforts for its adoption and scale up can be anchored. This Strategy therefore presents 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. The strategy is framed in the context of the constitutional aspiration of putting the country on a sustainable development trajectory. The Constitution recognizes sustainable development as an important value and principle of governance and grants the right to adequate food and a clean and healthy environment to all citizens (Article 42 and 43).

The Strategy will support the mainstreaming of agroecology and other innovative-sustainable practices into existing national and county plans and strategies to enable their adoption at scale and in a transformational way. At the county level, some counties have developed or are in the process of developing agroecology policies or strategies. These include Murang'a, Kiambu, Vihiga, Busia, Kakamega, West Pokot and Laikipia. The Agroecology Strategy will provide a national framework that Counties can use to domesticate their agroecology strategies, policies and laws.

The agroecological transition pathway is informed by the consolidated set of thirteen key agroecological principles (closely related to the FAO's 10 elements of agroecology). The integration of these principles in Kenya's 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: Contribution of Agroecology

Dimension	Contributions of agroecology
Food and nutrition security	• Diversification 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 • Offers opportunities for livelihood diversification through the integration of livestock, beekeeping, and non-timber forest products, providing additional sources of income for ASAL communities
Human Health	• Enhanced food safety; reduced health risks from pesticide exposure; reduced use of antibiotics, and growth hormones • Emphasis on diverse diets enhances nutrition security and reduces incidences of non-communicable diseases
Environmental	• Uptake of nature-based solutions will enhance adaptation and mitigation against climate change, to reduce carbon emissions by about 80 million tCO2e per year by 2050 (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 • Diversification and higher production will reduce dependence on food imports • 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 • Increased productivity due to use of agroecological inputs
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

Overall, the strategy will support Kenya's attainment of its environmental, economic and social commitments as defined in the Sustainable Development Goals. Transitioning towards agroecological systems is central to achieving the multiple and interlinked objectives of the SDGs. Agroecology can contribute directly and significantly to reducing poverty (SDG 1), increasing access to food (SDG 2), SDG 3: Good Health and Well-Being, SDG 5: Gender Equality, by contributing to decent work (SDG 8) . In addition, agroecological approaches and practices can contribute to decent work (SDG 8), SDG 10: Reduced Inequalities, SDG 12 on sustainable production and consumption, and SDG 15: Life on Land, promoting renewable energy (SDG 7), regulating and reducing emissions (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). The SDG 17 whose clarion call is ensuring that no one is left behind and calls for partnerships between governments, the private sector, and civil society is well aligned to the principles of agroecology.

Chapter 2: 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 paradigm of food production and consumption (IFAD, 2021). These dynamics have implications for sustainable development. 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).

2.2 Key Issues and Challenges Facing Agricultural and Food System in Kenya

Ensuring food and nutrition security for all continues to be a key development agenda of the Kenyan Government. Transforming the agricultural and food systems is however faced with many contextual issues and challenges around the following themes.

2.2.1 Agriculture and food production

The agricultural sector in Kenya is characterized by a combination of mixed cropping, livestock systems, fisheries, and forestry. The key challenges the sector faces 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 notable 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 can be attributed in part to the introduction of new, high-yielding crop varieties and cultivars. However, these varieties often necessitate substantial application of chemical fertilizers and pesticides to achieve their potential yields. This has implications on the cost of food production and integrity of environmental functions (loss of biodiversity, deforestation, water availability, soil health and GHG emissions). While there is no doubt about the success of the high-input, resource-intensive farming 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.

Declining sovereignty of seed and animal 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, smallholder farmers have freely shared a wide variety of seed material to produce food. The conversation about seed sovereignty is gaining traction especially in developing countries, fueled by concerns over new laws and, institutional and market arrangements being introduced (e.g., Ghana, Liberia and Sierra Leone). These new arrangements limit what farmers can do with their own seed varieties (AFSA, 2017). This raises further significant worries about the control and accessibility of local genetic resources. While over 80% of farmers access seed from Farmer Managed Seed Systems (FMSS), current seed policies and laws prioritize the formal seed sector.

Currently the formal seed sector concentrates on a few types of crop and animal species that are just grown or raised at commercial scale. The imbalance undermines the vital role of local seed systems in maintaining biodiversity and supporting the food security of smallholder farmers. This is exacerbated by limited protection of local seed and livestock breeds from bio-piracy. There is also inadequate research on the economic, nutritional and agroecosystem health benefits of indigenous seed and

food. Agricultural investment is often largely tailored towards industrial or corporate models 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 and 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 with high levels of land degradation are 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 (Ministry of Environment and Forestry, 2017). Some of the impacts of the degradation include poor fertilizer yield response, reduced provisioning of ecosystem services, reduced productivity and water stress (Figure 4).

Fertilizer	Ecosystem Services	Productivity	Water
• Poor fertilizer yield response due to rising soil acidity and decline in soil organic matter • This limits uptake of inorganic nutrients (Sheahan *et al.*, 2013)	• Poor fertilizer yield response due to rising soil acidity and decline in soil organic matter • Declining forest cover from 3.9 to 3.6 million ha in the 2000 - 2020 period (FAO, 2015)	• Declining productivity in both crop and livestock • Yields of most main crops below potenial and yield reducing over time (CBK, 2023)	• Rising water scarcity and stress, from 12.9% in 2000 to 33.2% in 2020 (National Water Master Plan 2030)

Figure 4: Extent of Degradation of Ecosystems in Kenya

Declining biodiversity for food and agriculture: The increased adoption of monoculture which is associated with trends towards specialization and commercialization, is a leading driver of declining resilience of the food system. While monoculture systems are financially profitable, they are highly vulnerable to climate change and other related socio-economic shocks.

The current 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 66% of all crop production (Convention on Biological Diversity, 2024).

The colonial export-oriented policies had major impacts on Africa's rich food system and food security. In the colonial period, African agriculture had to shift from the production of traditional food crops to export crops. They comprise primarily fiber (such as cotton and sisal), sugar, coffee, and tea. Following independence, African governments continued to implement the same policies, focusing on exporting these crops, to maintain the flow of foreign currency needed to fund their industrialization policies.

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. The impact of climate change on food security relates not just to food supply, but also to food quality, food access and utilization and the nutritional properties of some crops. In response, the country has put up several measures to address these 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 million tonnes of CO_2 equivalent in 1995 to 93.7 million tonnes of CO_2 equivalent in 2015, representing an increase of 65.2 % over the period (Figure 5). The emissions are projected to increase to 143 million tonnes of CO_2 equivalent in 2030 (Ministry of Environment and Forestry, 2021).

Agroecology promotes nature-based solutions that enhance adaptation to climate change impacts and contribute to climate change mitigation of approximately 80 million tCO_2e per year by 2050. It's uptake will therefore help the country meet her NDCs since Agriculture and land use changes are leading sources of GHG emissions; mostly associated with, livestock enteric fermentation, manure left on pasture and agricultural soils and fertilizer application (Figure 5).

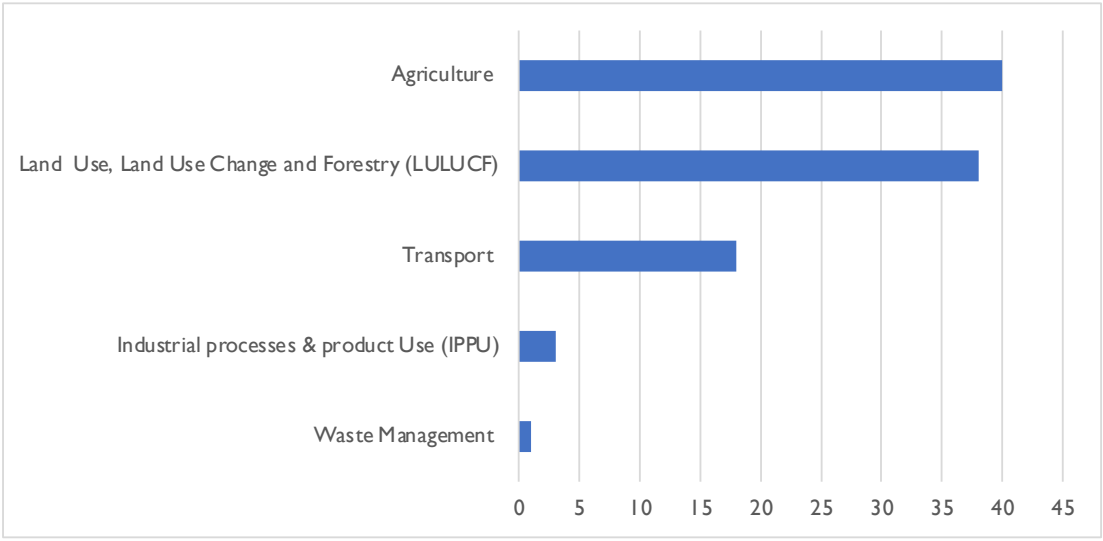

Figure 5: Share of Carbon Emissions by Sector in Kenya (Ministry of Environment and Forestry, 2021)

2.2.2 Aggregation, distribution and processing

Kenya's agriculture is predominantly small scale, accounting for 75% of the total production. Due to declining farm sizes, 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, 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
- 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

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 (Ministry of Agriculture, Livestock Development and Cooperatives, 2021b).

2.2.3 Food consumption

Sustainable consumption focuses on addressing under-consumption while stimulating the demand for healthy, diverse and safe diets. This would involve; reducing the use of harmful agrochemicals, promoting dietary diversification, and localizing food sources. It also aims at improving food security, livelihoods and equity within the food system. Achieving these outcomes is constrained by various challenges;

Shifts in consumption preferences in favor of foods 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, increased production of processed food, direct effects of food marketing exposure, differences in individual purchasing power and, 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 (KNBS and ICF, 2023).). The poor consumer choices not only affect their nutrition and health outcomes, but also lead to a cycle that affects what is produced and available in the market (Figure 6).

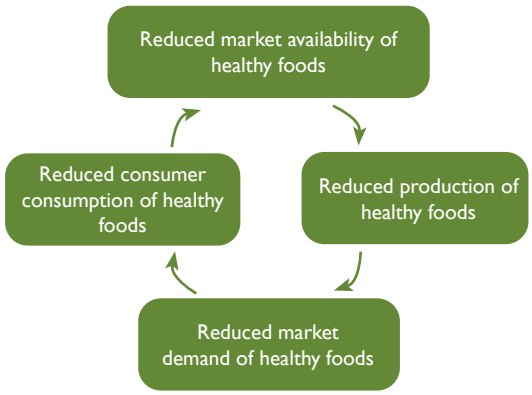

Figure 6: The Cycle of Unsustainable Food Diets (Stakeholder Consultations)

The 'triple burden' of malnutrition and food insecurity: Ending hunger, achieving food security and improving nutrition are all key steps towards sustainable development. Despite undernutrition having declined strongly, most Kenyans still do not meet the recommended intake of nutritious food such as fruit and vegetables. Diets are mostly cereal-based, which leads to frequent dietary inadequacy. Worryingly, prevalence of undernourishment, food insecurity and hunger have been rising in the last few years, erasing almost two decades of progress (Figure 7).While the country has made progress in reducing stunting for children under five, one in five children remain stunted (KNBS and ICF, 2023).The food provisioning challenges are likely to remain a significant barrier to sustainable development, if unaddressed.

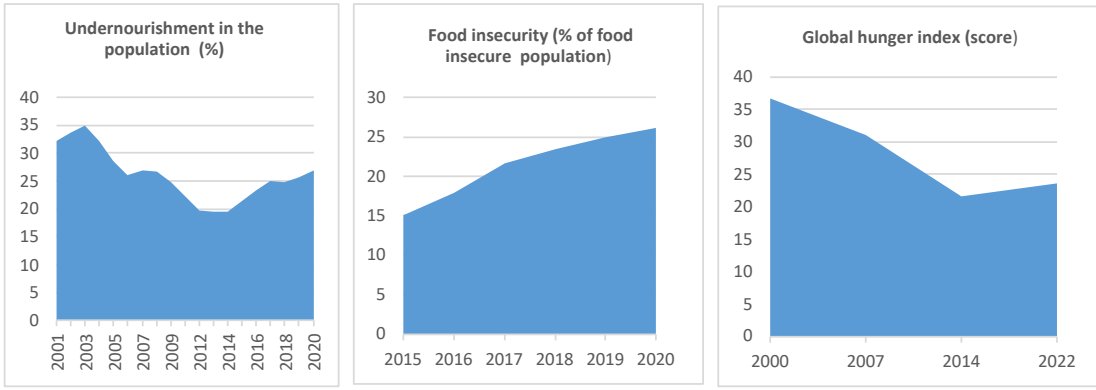

Figure 7: Undernourishment and Food Insecurity in the Kenyan Food System (2000 - 2022)

Inadequate systems to guarantee food safety: Food safety is a key concern in the food system since unsafe food remains a major cause of disease and death. Globally, contaminated foods cause about 1 in 10 people to fall ill every year and nearly half a million deaths (WHO, 2015). 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 a 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 Departments at the county level
- Poor food handling and personal hygiene practices 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)

Box 1: Use of Pesticides in Kenya

- Chemical pesticides are hazardous in nature and may have negative impact on the environment, risk to the user and food safety
- The combined imports of herbicides, fungicides, insecticides have grown from 15.92 metric tonnes (2015) to 21. 65 metric tonnes in 2021 (PCPB, 2024)
- 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
- Most consumers and farmers are not aware about the hazardous nature of pesticides, impact on food safety, risks to the users 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 many countries 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 such as lower dependency to external resources, conserving resources, increasing the autonomy of producers and reducing their vulnerability to market and climate shocks (FAO, 2023). Waste recovery includes 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, 1999), Waste Management Regulations (2006), Bio-energy Strategy (2020-2027) and National Solid Waste Management Strategy (2015). However, the Kenya has high levels of waste being generated and not recycled. For instance, in Nairobi, the capital city, 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 about circularity among stakeholders.

Kenya continues to experience high levels of food loss and waste (FLW) with 20-40% of the food being lost or wasted (Liebetrau, 2019; TechnoServe, 2023). In addition, 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 (UNEP, 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. While considerations for FLW reduction are urgent for enhancing efficiency of resources and minimizing environmental 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 (Ministry of Labour and Social Protection, 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 and ICF, 2023). In addition, indigenous people living around conservation areas suffer greater injustice in access to land, despite being guardians of local ecosystems. Some indigenous communities 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. This is against the Constitution of Kenya and other laws recognizing that indigenous people and their communities have an historical relationship with their lands, and have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment.

Limited access to credit and financing varies in Kenya varies significantly among men, women and youth. While only 11.6% of Kenya`s population was excluded from financial services, 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. This disparity underscores the need for targeted financial initiatives to improve access for these marginalized groups.

Unequal participation in labour market persists, with women disproportionately burdened by unpaid care work. Rural women often spend long hours on family care, therefore constraining their ability to engage in agriculture and income generating activities. Additionally, most time-saving technologies have not been not been tailored to specifically meet women's needs. These outcomes are driven by unequal gender norms, gendered division of work, and institutional and structural constraints (ILO, 2023).

The uneven distribution of hunger and nutrition reflects the unequal power dynamics within global food systems. In Kenya, smallholder farmers find themselves at a a disadvantage, due to limited control over productive and financial resources.

Consequently, food 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, as well as their right to define their own food and agriculture systems (Declaration of the International Forum for Agroecology, Nyéléni, 2015).

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. This is 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. Agroecological approaches aim to tackle gender inequalities by creating opportunities for women and other marginalized groups, fostering greater inclusivity and empowerment within agricultural practices.

2.2.6 Funding for agriculture and mainstreaming of agroecology

Kenya`s share of agriculture spending in the national budget remains below the Comprehensive Africa Agriculture Development Programme (CAADP) target of 10%. In the year 2021/22, the share of Agriculture, Rural and Urban Development sector funding was 3.3% of total exchequer issue (Figure 8). 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 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%) (PELUM, 2022).

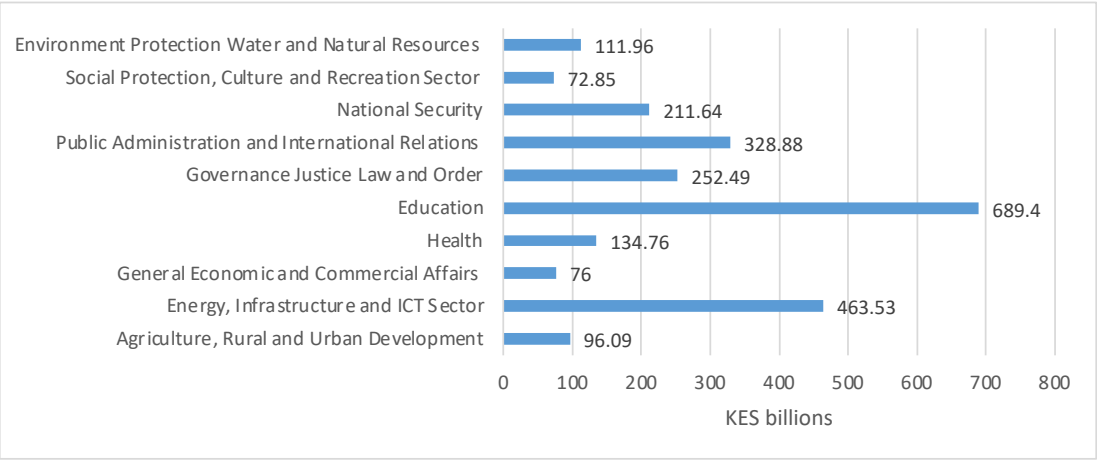

Figure 8: Total Actual National Government Funding by Sector in 2023/2024 (Controller of Budget, 2024)

Based on the current funding model, financing small-scale agriculture is disproportionately low when compared with the importance of agriculture for the 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 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. The Constitution also 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 (National Treasury and Planning, 2018). 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 Country's Fourth Medium Term Plan: Bottom-Up Economic Transformation Agenda for Inclusive Growth (BETA) 2023-2027 which prioritizes agricultural transformation as a pathway to economic recovery and sustainable development (The National Treasury, 2024). 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[1]. 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

[1] 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

sectors, these strategies have 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 (Murang'a County, 2022a, b). 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 to 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).

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.

Sector	Framework	Description
Agriculture	Sessional paper number 3 of 2020 on Livestock policy	The broad objective of the Livestock Policy is to utilize livestock resources for food and nutrition security and improved livelihoods while safeguarding the environment. The objective will be achieved by measures to ensure : Improved management of livestock, feed and rangeland resources while promoting social inclusion and environmental resilience; Providing for animal health and food safety to facilitate access to domestic, regional and international markets; Promoting investment in agribusiness, value addition and product development in the Sector; Supporting livestock research and extension services to facilitate innovation and adoption of appropriate technologies ; Promoting cooperation and collaboration between the national and county governments in livestock development; and strengthening the legal and institutional framework.
	Range Management and Pastoralism Strategy 0f 2021-2031	The strategy recognizes the declining productivity of rangelands, due to various challenges, such as land fragmentation, encroachment, invasive plant species, poaching, over-stocking, over-grazing, and the adverse impacts of climate variability, characterized by persistent and recurrent droughts. Agroecology can enable the attainment of the strategy's objectives, which include the implementation of sustainable interventions, mitigation, and adaptation measures that preserve, protect, and sustain the productivity of rangelands.
	National fisheries policy of 2020	The Kenya National Fisheries Policy, 2020 is designed to improve the management and development of the fisheries sector in Kenya. The policy provides guidance on sustainable management of fisheries resources, enhancement of fish production, and promotion of socio-economic development in the fishing communities. The policy emphasizes the need for effective governance, stakeholder participation, and the use of modern technologies to improve the efficiency and profitability of the sector. It also aims to enhance the value chain of the fisheries sector, improve market access, and promote trade and export opportunities for Kenyan fish products. The policy recognizes the role of women and youth in the fisheries sector and seeks to empower them through capacity building and access to financing.

Sector	Framework	Description
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 (National Treasury and Planning, 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.

Sector	Framework	Description
Environment	National Policy for the Sustainable Development of Northern Kenya and other Arid Lands (2012)	The policy seeks to unlock the latent potential of strategic sectors in Northern Kenya and other arid lands, including livestock, tourism, and renewable energy, by addressing distinct challenges specific to these regions. These challenges include closing the developmental gap between Northern Kenya and the rest of the country, protecting and promoting the mobility and institutional arrangements essential for productive pastoralism, and ensuring food and nutrition security across the arid and semi-arid lands, where unpredictability is certain to increase as the impact of climate change deepens. The implementation of the Agroecology Strategy will help achieve this potential by promoting sustainable agricultural practices that enhance resilience to climate change, improve food security, and support the livelihoods of pastoralist communities.
Health	National Food and Nutrition Security Policy (2011); The National Nutrition Action Plan (KNAP) (2012-2017) and Kenya-Nutrition-Action-Plan (KNAP) (2018-2022)	Broadly, the policies recognize that addressing the triple burden of malnutrition requires multisectoral and multidisciplinary approaches and consequently seek to foster cross-sectoral collaboration to sustainably address the social determinants of malnutrition, with the overall aim of ensuring optimal nutrition for all Kenyans. Collectively, the policies also acknowledge the role of agriculture and livestock sectors in; promoting the consumption of safe, diverse, and nutritious foods, strengthening agri-nutrition capacities and coordination at both national and county levels, and coordinating with other sectors for policy, legal, regulatory, and program implementation. 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.

Sector	Framework	Description
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 agroecological practices including seed and food sovereignty • The rising number of smallholder farmers using agroecological practices • Existence of rich indigenous, local and diverse knowledge on practices to promote agroecology • Existence of organizations that provide certification of products that follow principles of agroecology • Availability of diverse agroecological innovations and technologies in the agriculture sector • Emerging evidence on the positive impacts of agroecology on the 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 • Weak coordination mechanisms of agroecology initiatives • Limited documentation of successful agroecological practices and lessons to support uptake and scale up • Most markets for agricultural inputs and outputs favour large scale producers which helps to exacerbate already existing inequities that disadvantage smallholder farmers • Limited market incentives and innovation uptake to support the agroecological transition • Low levels of agri-food due to limited waste collection and recycling infrastructure, inadequate funding, and a lack of awareness of circularity at a household level • Inadequate recognition of communities as owners of plant and animal genetic materials which is partly explained by inadequate legal frameworks to manage access and benefit sharing arrangements • Limited integration of agroecological approaches in research, curriculum and practice • Low capacity to access funding opportunities for agroecology • Limited availability and access to bio inputs by smallholder farmers • Urbanization and shift to unsustainable consumption, poor and unsafe diets, poor attitude toward 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 shifts towards 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 • Huge export market opportunities in developed countries	• Acceleration of biodiversity loss associated with high-input, resource-intensive production systems which have caused deforestation, water scarcities, soil depletion and high levels of greenhouse gas emissions • Rising adverse impacts of climate change on the agri-food systems • Policy and legal frameworks such as the Biosafety Act which promote genetic modification practices that potentially harm existing biodiversity • 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 allocated to conventional agro industrial projects which contribute to the current climate, food and biodiversity crises • Lack of adequate financing that is compatible with longer-term investments in agroecology • Inadequate support for agroecology approaches and programs at policy and practice levels • Urbanization increases conversion of agricultural land into built up areas, reducing the land available for farming • Increased population leading to pressure on land, water, and food production, which results in deforestation, soil degradation, and overexploitation of natural resources

2.3.2 PESTEL analysis

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

Political context: 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 Bottom Up Economic Transformation Agenda (BETA) 2022-2027 has heralded five core pillars of focus: agriculture, enterprise, housing, healthcare, and the digital economy (Kenya Kwanza, 2022). Under the plan, the government targets to enhance 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 targets 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 smallholder producers deliver food security and nutrition using local resources sustainably. These commitments will provide opportunities for collaboration between actors in achieving the agroecological transition envisaged in this strategy.

Economic context: Kenya became a lower-middle-income state in 2014, driven by sustained economic growth, social development, relative political stability and of foreign direct investment (FDI) flows . Despite, growth in GDP per Capita (Figure 9), the country has a high poverty level estimated at 36.1%, indicating a stagnation in economic inequalities (KNBS,2018).

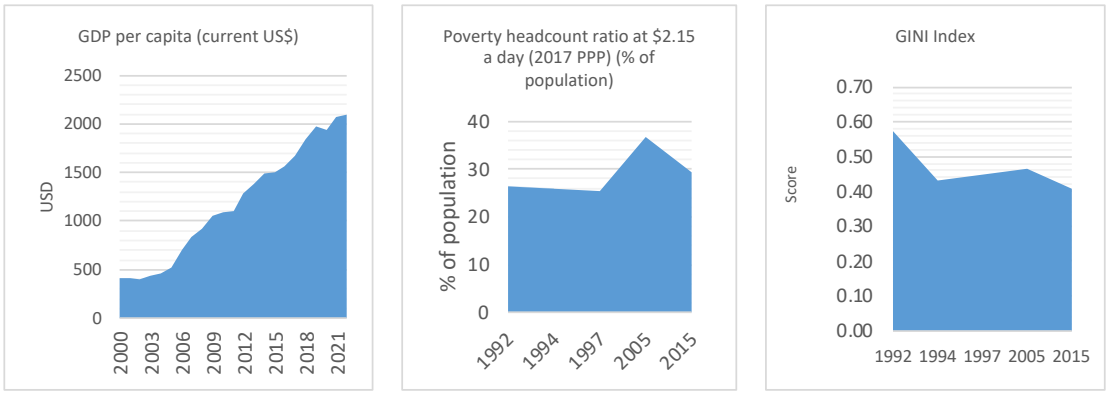

Figure 9: Selected Economic Indicators for Kenya

Economic sustainability is affected by food insecurity, malnutrition, dependence of imports and unemployment. While the country is making efforts in reducing child malnutrition, progress on child stunting is below the global target and undernourishment is rising again (Figure 10). 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 tonnes 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 significant cohort of unemployed or underemployed youth who need to be supported to overcome the perception that agricultural production and agribusiness is less preferable than white-collar work.

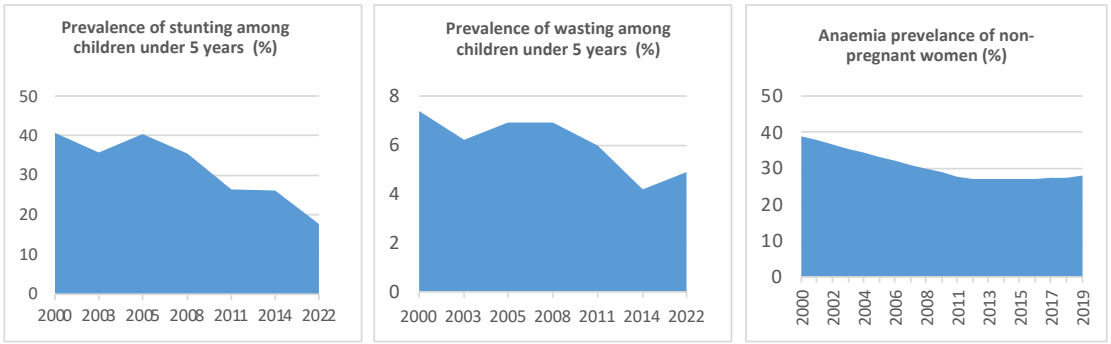

Figure 10: Food and Nutrition Indicators for Kenya

Socio-cultural context: Kenya's food system has undergone structural changes associated with population growth, urbanization, and life expectancy (Figure 11). These dynamics have important implications for dietary behavior and are hastening the transition from consumption of traditional food to less healthy diets. 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.

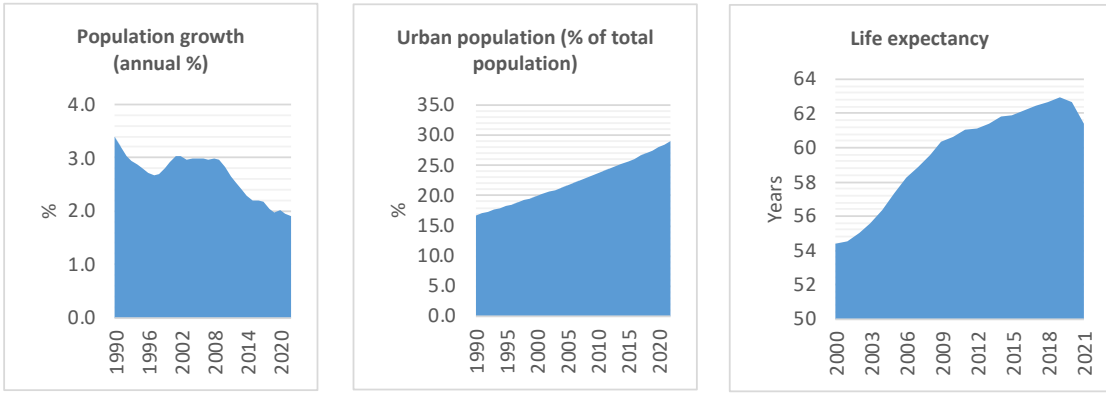

Figure 11: Development Indicators for Kenya (World Bank, 2020)

Technological context: The agroecological transition will require new and existing applications of science, technology, and innovation across the food system. Some of the innovations that are being employed to strengthen food security and nutrition include technologies for combating biotic and abiotic stresses, raising crop and livestock productivity, improving soil fertility and water availability. Other key enablers include climate change mitigation and adaptation technologies, precision agriculture, index-based insurance, early warning systems and technology applications in the agricultural sector, biotechnology and nanotechnology. By 2022, mobile subscription penetration rates in the country were 143.1 per 100 inhabitants. The penetration creates opportunities to use digital platforms to create more awareness on the need for agroecology in Kenya.

Environmental context: Kenya's agricultural resource base is characterized by the "limited availability of productive land with most being arid (52.9%) or semi-arid (19.8%) land. Only 18% of Kenya's land has 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 largely rainfed which when coupled with lack of storage facilities, low levels of food processing, and market failures, leads to food insecurity peaks. During the rainy season, food overproduction leads to falling food prices and high food waste. Climate change is equally evident in Kenya with widespread impacts that include enhanced drought and flood events. Increasing cases of drought-induced food insecurity have been documented with at least 2 million Kenyans needing immediate food assistance in 2024 (NDMA, 2024). Consequently, there are limitations of the Kenyan food system that point to 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 policies 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 Payment for Ecosystem Services (PES) and Access and Benefit Sharing (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 equity and inclusion . The Agroecology 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 and supporting the transition process need to be defined and nurtured. They will include;

National government: The national government will play a facilitative role in providing an enabling environment (institutional, legal, financing, infrastructure) upon which the scaling up of agroecology will be based. The principal governments ministries expected

to play a leading and coordination roles for the implementation of the strategy will include; Agriculture and Livestock Development, Health; Environment, Climate Change and Forestry; Education; East African Community, ASALs and Regional Development and; Investment, Trade and Industry. In addition, key state agencies including the Agriculture and Food Authority, Kenya Dairy Board, Kenya Animal Genetic Resources Centre (KAGRC), Kenya Plant Health Inspectorate Service and Kenya Bureau of Standards will work with the government and private sector actors.

County governments: The County Governments 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 would transcend county administrative boundaries. Each county will be expected to cascade the strategy, develop plans to actualize its goals and integrate specific strategies into their respective County Integrated Development Plans (CIDPs).

Non-State Actors (NSAs): The various 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, resource mobilization, sector coordination and networking to scale up the transition. These organizations will partner with government in providing financial resources and implementing agroecology projects at the local and national level. Already a few actors are actively engaged in agroecology initiatives, but more participation is envisaged with the finalization of this Strategy.

The Private sector: Private sector actors include producers of various crops and livestock commodities, marketers and processors. 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 will engage in advocacy on policy and legal issues of the strategy and promote best practices in agroecology. Through corporate social responsibility (CSR), the private sector will support agroecology programs. The 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 strengthening.

2.4 Summary of Issues, Challenges, and Opportunities

The situational analysis reveals that there is limited integration of agroecological approaches in the design of food system interventions, characterized by the following key issues;

1. **Fragile agri-food systems:** This is evidenced by declining productivity in both crop and livestock; degradation 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 leading 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 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 system.

3. **Weak policy and institutional environment and incentives for supporting agroecology transitioning and scaling up:** This is explained by limited mainstreaming of agroecology and other innovative practices into existing national and county policies and strategies; lack of financing that is compatible with longer-term investments in agroecology; inability of smallholder farmers, communities and counties to access funding opportunities for agroecology and, limited financing of small-scale agriculture relative to its importance to the Country's economy. Equally, a 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.

4. **Limited mainstreaming of agroecology in research, curriculum, and practice:** There is limited documentation of successful agroecological practices and lessons to support uptake and scale up agroecology products.

5. **Gender and social inequalities:** There are 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. Uneven distribution of resources and power coupled with negative social cultural norms lead to disparities in access to opportunities.

Chapter 3: 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.

The transformation of Kenya`s food system is crucial for achieving improved nutrition, resilient livelihoods and greater equity among all citizens (Figure 12). Currently, Kenyans face many challenges, including, food insecurity, malnutrition, economic insecurity and inequalities. At the same time, the current food systems suffer low productivity, soil degradation, biodiversity loss and increasing vulnerability to climate change.

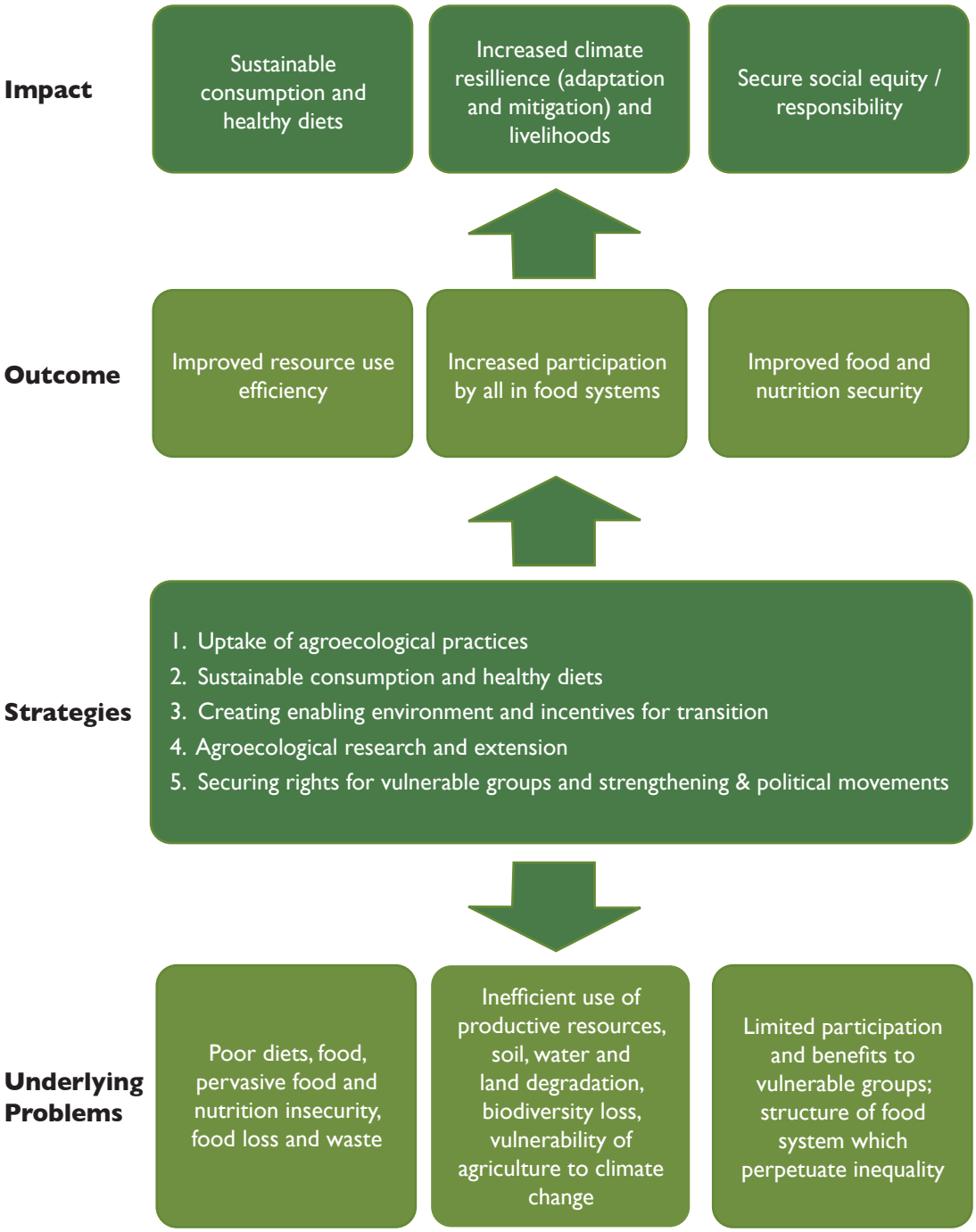

Figure 12: Theory of Change

The theory of change (Figure 12) is hinged on uptake of agroecological principles and practices, leading to improved soil health, sustainable farming, increased crop and livestock productivity and improved adaptation and mitigation to climate change. Achieving the food system transformation will require investments and programs to support the transition, including agroecological research and extension among small scale producers and market actors. Shifts towards sustainable consumption and healthy diets are also vital for improved food and nutrition. The agroecological transition should ensure that the food system governance is inclusive, addressing the needs of the small-scale producers and the marginalized communities. This includes prioritizing the affordability and availability of nutritious food, promoting secure livelihoods and fostering equity.

3.2 Strategic Objectives

This strategy seeks to promote the agroecological transition 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 leading to high emissions of greenhouse gases and negative effects on biodiversity and soil health. Kenya has been experiencing successive impacts of climate change resulting in 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 four key issues that are critical in promotion and uptake of agroecological practices: how to increase resource use efficiency and productivity in agricultural production landscapes; building capacity of actors in the agricultural, innovative systems to support uptake of agroecology, facilitating integrated ecosystem restoration in landscapes and conservation and use of indigenous/locally managed seed and livestock breeds.

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

i. Map and profile enterprise suitability for the different agro ecological zones

ii. Promote practices that enhance on-farm diversification through crop, livestock, trees and fisheries combination for healthy food, income, and ecosystem restoration

iii. Enhance the use of natural solutions for holistic crop and animal health that make use of locally available resources and ecosystem services

iv. Facilitate adoption of farm practices that enhance water harvesting, storage and water use efficiency in agricultural systems; and the creation of watering points to ensure adequate supply of water for livestock and pasture

v. Facilitate adoption of sustainable soil health to allow for regeneration of farmlands and grazing lands

vi. Promote alternative techniques for assessment of the health of agroecosystems including soil health, and biodiversity

vii. Promote adaptable precision farming technologies and use of digital innovations in food systems` monitoring and management

viii. Adopt holistic grazing management approaches that consider the ecological, economic, and social aspects of sustainable livestock production

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, exchange (sharing and sale) 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

iv. Promote the use of alternative and locally available feed resources, such as crop residues, agro-industrial by-products, and native forage plants, to reduce dependency on commercial feed and enhance feed security

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 and biodiversity

v. Promote incentive models that support ecosystem restoration and biodiversity conservation in agrarian landscapes

vi. Promote the establishment and management of diverse pasture systems incorporating a mix of grasses, legumes, trees, shrubs and native species to enhance biodiversity, soil health, and forage availability

vii. Enhance conservation of pollinators and pollination services that support agriculture and food production

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

i. Facilitate the mapping and profiling of indigenous seed and livestock breeds

ii. Protect the ownership of indigenous seeds and livestock breeds and their use by communities

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. Promote an enabling environment and financing 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 while meeting the needs of the present and future generations, through good use of resources, improving energy efficiency, providing access to basic services and ensuring a better quality of life for all. It also involves the shift to sustainable healthy diets — 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 environmental 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

vi. Promote agroecology in urban and peri-urban agriculture

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

v. Promote equitable access to green energy sources for production and household food preparation such as solar, biogas, wind power etc

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. Leverage on 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 incentives to overcome structural constraints that 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 financing

iii. Support counties to domesticate and implement the National Agroecology Strategy for Food System Transformation

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

vi. Advocate for policies and incentives that support sustainable pasture and rangeland management including research on efficient fodder and range productivity

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

iv. Promote appropriate funding models that address special needs of actors in agroecology

v. Develop innovative mechanisms to improve access to affordable and accessible financial services to livestock keepers and other value chain actors

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

i. Create subsidy programs to support agroecology

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 labeling and PES schemes

iii. Promote awareness and education targeting local communities on ABS issues relevant in agriculture and food systems

iv. Promote access and use of appropriate technologies and equipment

v. Identify and engage grassroots, national and regional agroecology champions in promotion of Agroecology

vi. Develop customized insurance products for agroecological enterprises

Strategic area 4: Strengthen value addition, markets, and trade

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 cost effective, participatory certification systems including, traceability systems, standards and labeling of food products and farming practices that align with agroecology

iii. Establish and/or strengthen agroecology actors and actor associations to support acquisition of inputs and the local and international marketing of products and services

iv. Establish infrastructure and systems that support the acquisition and use of inputs that align with agroecological approaches and practices

v. Promote the application of agroecological principles and practices in value addition and agro-processing

vi. Increase marketing of livestock and rangeland resources for improved livelihoods of pastoral communities

vii. Strengthen the capacities of producers and marketing groups production, processing and storage of livestock products

3.3.4 Research, innovation, training, and co-creation 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 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: Mainstream Research on agroecology in the country's National Agriculture Research System (NARS)

i. Identify gaps of public and private stakeholders as a basis for research prioritization on agroecology

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. Integrate Agroecology in the education curricula at all levels

vi. Matching of suitable agroecological practices with agroecological zones and enterprises

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. Package and mainstream agroecology in extension services

iii. Promote appropriate extension approaches and methodologies towards co-learning 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 knowledge

v. Tailor extension services and training to meet the needs and constraints of vulnerable and marginalized groups, including promoting social equity

vi. Strengthen digital and physical innovation platforms to support dissemination of agroecology research and information

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

i. Document, promote and protect local knowledge and practices that support agroecology

ii. Establish a demonstration center 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 and livestock breeds to enable local and indigenous communities to sustain and revitalize their 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 (Articles 21 and 43) 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 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 technologies and practices that enable meaningful participation of women and Persons with Disabilities (PWDs)

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 to engage in the food system decision making and policy processes

iv. Support dignified and robust livelihood for all actors engaged in the food system based on fair trade and fair labor practices

Chapter 4: Strategic Implementation

The implementation of this Strategy will involve 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 actors and collective actions in the Strategy. In addition, the execution of the Strategy will require financial resources and technical support from both the public and private sector.

Further, a robust system for monitoring and evaluation and, risk management is necessary for efficient implementation of the strategic actions. This chapter 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 in 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 to focus and synergize the actions and strategy interventions outlined in Chapter three.

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 their respective responsibilities.

At the County level, the Departments for Agriculture, Environment, Health and Education will be responsible for their assigned mandates in relation to Agroecology. The Departments will develop and implement work plans for transitioning to Agroecology.

The Agroecology Strategy Implementation Summit will comprise Principal Secretaries (PSs) of the relevant departments within the Ministries of Agriculture and Livestock Development, Health; Environment, Climate Change and Forestry; Education; East African Community, ASALs and Regional Development; Investment, Trade and Industry and; Water, Sanitation and Irrigation. Others are Ministries of Co-operatives and Micro, Small and Medium Enterprises (MSMEs) and National Treasury.

Representatives of the Development partners and National Farmers' Association will also be in the Summit. The Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA) will be the secretariat of the Summit. In collaboration with Council of Governors (COG), the Summit will provide overall policy guidance on agroecology implementation in Kenya (Figure 13).

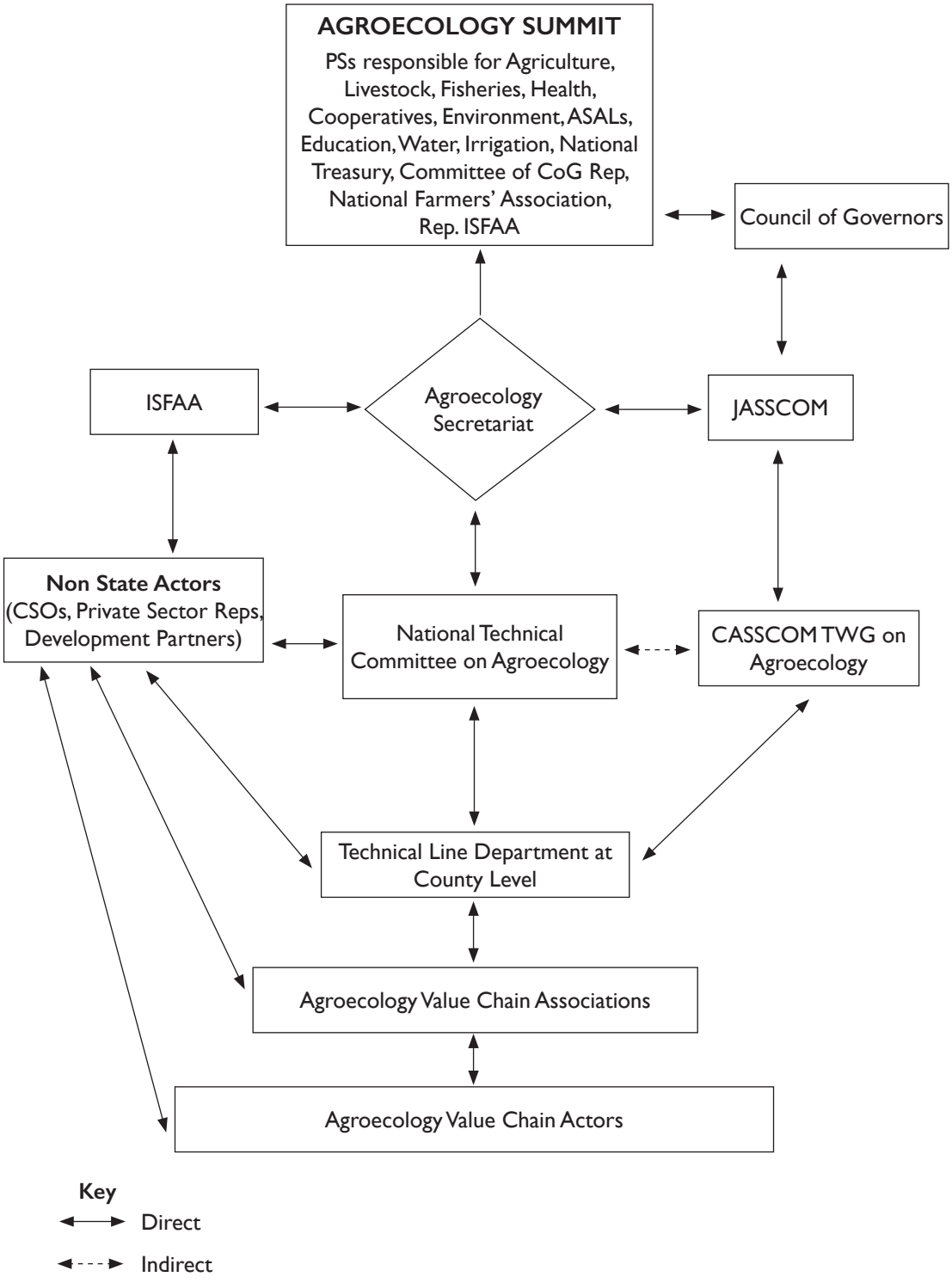

Figure 13: Coordination Structure and Institutional Setups

4.1.1 Coordination of agroecology functions at the national level

The National Technical Committee on Agroecology will be established at the national level, to coordinate the mainstreaming and implementation of agroecology policies and practices across all sectors (Agriculture, Livestock, Fisheries, Health, ASALs, Education, Trade, Cooperatives, Water and Environment) in Kenya. The committee will align its work with the Technical Working Groups (TWGs) established under Joint Agriculture Sector Steering Committee (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 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 National Agroecology for Food System Transformation Strategy objectives
3. Assessing progress and steering the consolidation of reports on the achievement of Strategy implementation results (outputs and outcomes)
4. Facilitating sector-wide linkages with regional or international initiatives on Agroecology

In line with the Intergovernmental Relations Act (2012), the National Technical Committee on Agroecology will comprise the following institutions and actors, but not limited to;

1. Line Ministries responsible for Agriculture, Livestock, Fisheries, Cooperatives, Health, Environment, Education, Water, Irrigation, ASALs and National Treasury

2. Representative of the Council of governors
3. Representative of the Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA)
4. Representative of farmers and growers' organizations
5. Research and Academia
6. State Agencies including Agriculture and Food Authority (AFA), Kenya Bureau of Standards (KEBS) and, Kenya Plant Health Inspectorate Service (KEPHIS)
7. Kenya Representative of Civil Society Organizations
8. Two representatives of processors or manufactures and marketing organizations
9. Representative of Development Partners
10. Representative of Consumer organizations
11. Representative of other stakeholder groups that may be coopted by the committee

4.1.2 Coordination of agroecology functions at the county level

A Technical Working Group will be established within County Agricultural Sector Steering Committee (CASSCOM) with the following roles and responsibilities as envisaged under the Intergovernmental Relations Act (2012);

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 this 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
7. Facilitate sector-wide intra and cross-county linkages on Agroecology

In line with the Intergovernmental Relations Act (2012), the County Technical Committee on Agroecology will comprise the following institutions and actors, but not limited to;

1. Departments for Agriculture, Livestock Fisheries, Health, Education and Environment
2. Regional/County Offices responsible for AFA and KEPHIS
3. Representatives of Farmer Organizations
4. Representative of Regional Kenya Association of Manufacturers (KAM)
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
8. Representatives of universities, academic institutions, and research organizations
9. Representatives of other stakeholder groups that may be nominated by the committee

4.2 Financing of Strategy Implementation

The National Agroecology for Food System Transformation Strategy implementation will require a range of financial resources and technical support. Financing a systemic, multifunctional approach such as agroecology requires holistic thinking, coordinated, and long-term funding. The financial resources for the execution of strategies outlined in Chapter Three will be allocated and utilised 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. It`s estimated that KES 26.8 billion will be required to implement the Strategy (Table 4).

Table 4: Estimated Budget for the Strategy Implementation

Strategic Pillar	Budget (KES 000' millions)
1. Transition to resilient and sustainable food systems through agroecology	8,525.00
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	4,150.00
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	1,590.00
Subtotal	**23,285.00**
15% of administration (include aspects of coordination, planning, M&E)	3,492.75
TOTAL	**26,777.75**

Funding and finance for agroecology will require investments by governments, donor agencies and private investors. Each of the funding models will require diversity and flexibility within a diverse ecosystem of funders who can align with one another to collectively deliver the objectives of the strategy.

4.2.1 Public financing

Public financing 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 Partner support

Support for coordination and the execution of specific strategic interventions from Development Partners will be refocused to align with 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 as a 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 the Strategy. Additional funding will be sought for mainstreaming of agroecology practices in current agriculture, health, education and environment related programmes.

4.2.3 Private sector financing

All value chain players currently in practice within the agriculture and food systems space will 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.

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 implementation of the strategy to assess progress towards achieving its objectives. It will also enable the identification of areas needing improvement and therefore contribute to ensuring the Strategy is effectively implemented and its intended outcomes are realized.

An M&E framework outlining Key Performance Indicators (KPIs) aligned with the overall objectives of the strategy. The framework will provide clear benchmarks for performance evaluation using measurable metrics that reflect the progress and success of the strategy. The KPIs will serve as a tool to monitor outcomes, identify challenges, and ensure continuous improvement throughout the implementation process. Comprehensive data collection tools will be designed and implemented, with clear indicators to address data needs and requirements for key benchmarks including the tracking of important national metrics related to food system transformation, such as the reporting on CAADP, Kenya's Nationally Determined Contributions (NDCs), and other relevant goals. The data collection process may include surveys, assessments, financial data, operational statistics, and other relevant information, ensuring a robust and accurate measurement of progress across various sectors.

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 (2022) 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 landscape.

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 focus on coordinating and structuring data collection, analysis, reporting and dissemination processes.

The Committees established at the National and devolved levels of Government will coordinate knowledge management initiatives. The Committees at the two levels of Government will develop a reporting framework that will link the County and National Government and facilitate horizontal communication between actors at the levels to identify actions that are strategically aligned and contribute to achieving the desired results.

4.5 Risk and Mitigation

The strategy identifies risks and proposes mitigation measures in its design and implementation (Table 5).

Table 5: Risk and Mitigation Strategies for the Agroecology Strategy

Risks:	Risk description	Likelihood (1= very low 5 = very high)	Impact (1= very low; 5 = very high)	Existing controls in place
Resistance to change	Transformations are generally disruptive, and those invested in the status quo of food system may resist the agroecological transition	High	High	Put in place a multi sectoral/stakeholder change management programme to incorporate best practices in overcoming resistance and rallying the key actors behind the strategy vision.
Slow scale-up and adoption barriers	An entrenched skepticism and biases against agroecology and a strong tradition of conventional farming practices may slow down impacts from the transition	High	High	Strengthen awareness campaigns, farmer training, and peer-to-peer learning to build trust and demonstrate the long-term benefits of agroecology. Also, Provide regular evidence-based updates on how agroecology has provided solutions
Coordination failure	Various actors are responsible for governance and management of the food systems. It has always a challenge to coordinate the various actors working within responsible for managing risk in the food system.	Medium	High	Develop and implement clear structure of coordination that embraces cooperation and collaboration

Risks:	Risk description	Likelihood (1= very low 5 = very high)	Impact (1= very low; 5 = very high)	Existing controls in place
Loss of support and buy-in	Political leaders are key stakeholders in the strategy implementation. The political good will in support of the food system transformation can be lost due to leadership transitions, following elections at the national and county levels	High	High	Mainstream the agroecological transition and food system transformation national and county long-term goals and plans Ensure the metrics for monitoring buy-in are incorporated in M&E framework
Occurrence of pandemics and climatic and socio-economic disruptions	Disruptions due to political upheavals, pandemics and other climatic and market shocks can negatively impact implementation	High	High	Put in place a comprehensive preparedness plan
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
Insufficient resource allocation	Financing Shortfall for implementation of the strategy due to fiscal strains at the national and county levels			Position agroecology as a priority investment option for government

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.

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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.

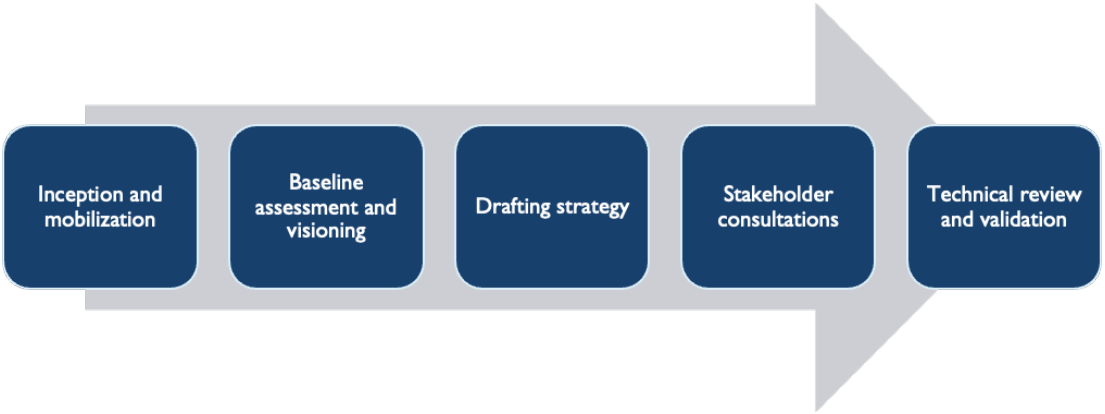

Figure 1.1: Process of Developing the Strategy

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 1.2: 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 Agrobiodiversity and Agroecology (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 was followed by analysis of the stakeholder input, drafting of revised Agroecology Strategy

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

Annex 2: National Agroecology Strategy Implementation Matrix

Strategic Pillar 1: Transition to resilient and sustainable food systems through agroecology

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
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). Map and profile enterprise suitability for the different agro ecological zones;	1. Number of agroecological zones for which suitable enterprises (crops, livestock, etc.) have been identified and profiled 2. Improvement in farmers' livelihoods and income in agroecological zones where suitable enterprises have been implemented	MoALD, offer coordination of mapping activities	Coordinating local action	National agricultural research system (NARS)-KALRO, Universities, research institute, international research centres NGOs to support the mapping				260

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	ii) Promote practices that enhance on-farm diversification through crop, livestock, trees and fisheries combination for healthy food, income and ecosystem restoration;	1. % of farmer 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 including fruit trees	MoALD, MoL; Provides enabling policies	Provides policies promoting nature based, Provide extension services, demonstration sites	NGO, Farmer organizations, Private sector; carryout mapping of lands under Agroecology.	ST	MT		700

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii) Enhance the use of natural solutions for holistic crop and animal health that make use of locally available resources and ecosystem services;	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-commercialization of inputs		MT		315

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iv) Facilitate adoption of farm practices that enhance water harvesting, storage and water use efficiency in agricultural systems; and the creation of watering points to ensure adequate supply of water for livestock and pasture	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	MoALD, MoWS, WRA- provides enabling policies. SDI	CG (Provides extension services Establishing demonstration), NEMA, WRUA	WRUAs Farmer groups NGOs		MT		300

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	v) Facilitate adoption of sustainable soil health to allow for regeneration of farmlands 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			730
	vi) Promote alternative techniques for assessment of the health of agroecosystems including soil health, and biodiversity;	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	200

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	Activities	Indicators	Responsibility/ Institution			Priority			Indicative Budget (KES) Millions
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vii)Promote adaptable precision farming technologies and use of digital innovations in food systems' monitoring and management.	1. Number of digital technologies developed and tested 2. Number. of users trained and registered 3. Number. of users adopting digital technologies	NIA NARS Ministry of ICT, MoEduc.; provision of enabling policies	Provide extension services Establish demonstrations sites Provision of subsidy and incentives	NGO, Private sector, Farmers/farmer groups; promotes uptake of the technologies		MT		200
	viii)Adopt holistic grazing management approaches that consider the ecological, economic, and social aspects of sustainable livestock production.	1. Number of practices developed and tested 2. Number of farmers adopting practices 3. Acreage under agroecological and holistic management	MoALD, MoL; Provides enabling policies	Establishment of demos, Provision of extension services, Provision of incentives/ subsidies	Private sector, Farmers/farmer groups;				300

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
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;	1. 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,				200
	ii) Strengthen local production, exchange (sharing and sale) 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 4. Value of investments into the production of Agroecology products 5. Number of policies that incentivize production and use of organic inputs;	NARS AG/Company registrar, Treasury, Ministry of Co-operatives and Micro, Small and Medium Enterprises, MoALD	Provide extension services Establish demonstrations sites	Private sector (KAM, AAK, KOFIMA)		MT		600

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii)Provide incentives for local research, registration (including harmonization of those inputs with dual purpose) and standardization of organic agro inputs.[1]	1. Number of relevant studies conducted2. Number of organic unputs registered/ 3. Number of standards developed and released for organic inputs 4. Number of policies or incentives supporting agroecological input production and distribution.	NARS, MoALD, KALRO, KEBS, Universities, PCP	Development of standards, extension services, provision of incentives	NAR NGO, Private sector, Farmers/farmer groups; promotes uptake of the technologies				270
	iv)Promote the use of alternative and locally available feed resources, such as crop residues, agro-industrial by products and native forage plants, to reduce dependency on commercial feed and enhance feed security.	1.Number of locally available feed resources available to producers 2. Number of farmers having knowledge of alternative and locally available feed resources Number of farmers utilizing alternative and locally available feed resources	MoALD, MoL; Provides enabling policies	Establishment of demos, Provision of extension services, Provision of incentives/ subsidies	NGO, Private sector, Farmers/farmer groups;				250

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

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
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				250
	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 Urban planning	Provide extension services Establish demonstrations sites	CSOs, CBOs, private sector, local communities				400

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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; Min of EAC, ASALs and Regional Development, Min of Water, Sanitation & Irrigation, MSME Authority, NARs provides enabling policies	Provide extension services Establish demonstrations sites	NGO, Private sector, Farmers/farmer groups; promotes uptake of the technologies				320
	iv) Facilitate capacity building and awareness creation on the importance and benefits of conservation and restoration of ecosystem resources associated with agri-food systems and biodiversity;	1. Number and amount of quality organic inputs and products availed in the market 2. Number of farmers/ stakeholders capacitated and aware on importance of conservation and restoration and of ecosystem resources in agriculture	MoALD, MoEF, MoE; provide enabling policies	Provide extension services Establish demonstrations sites Provide capacity building					210

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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				370
	vi) Promote establishment and management of diverse pasture systems incorporating a mix of grasses, legumes, trees, shrubs and native species to enhance biodiversity, soil health, and forage availability.	1. Percentage increase in the proportion of native plant species in pasture areas. 2. Increased biomass production (kg/ ha) from diversified pasture systems 3. Percentage increase in the nutritional quality (e.g., protein, digestibility) of forage in diverse pasture systems.	MoALD, Min of EAC, ASALs and Regional Development, MoEF, NDMA,	Provide extension services Establish demonstrations sites Provision of subsidy and incentives	NGO, Private sector, Farmers/farmer groups; promotes uptake of the technologies				400

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 reducing 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	300
4. Promote conser-vation 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,				270

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	**Activities**	**Indicators**	**Responsibility/ Institution**			**Priority**			**Indicative Budget (KES) Millions**
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	ii) Protect the ownership of indigenous seeds and livestock breeds and their use by communities.	1. Number of protocols for ownership and use of indigenous seed and breeds developed. 2. Number of national or local policies, laws, or regulations that recognize and protect the ownership of indigenous seeds and livestock breeds 3. Number of community-based seed and livestock banks or repositories established and managed by indigenous groups. 4. Number of indigenous community members trained in traditional agricultural techniques, breeding practices, and sustainable seed saving.	NMK National Innovation Agency (NIA) Ministry of Agriculture), KARLO, GERRI, KEPHIS, NDMA	Provide extension services Establish demonstrations sites Provide capacity building	NARs FAO, Private sector, CBOs, NGOS				400

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	Activities	Indicators	Responsibility/ Institution			Priority			Indicative Budget (KES) Millions
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii)Build the technical and infrastructure capacity for establishment of community seed banks and farmer managed seed systems;	1.Number of farmers collecting, multiplying, sharing and preserving community managed seeds. 2.# of community seedbanks established.	NARS, KARLO, GERRI, KEPHIS	Provide extension services Establish demonstrations sites Provide capacity building	Private sector, CBOs, NGOS				380
	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				400

Strategic objective 1: Foster the transition to resilient and sustainable agriculture and food systems through agroecological approaches									
Strategies Areas	Activities	Indicators	Responsibility/ Institution			Priority			Indicative Budget (KES) Millions
			NG	CG	Others	ST <3YRS	MT 3-5YRS	LT >6YRS	
	v) Promote an enabling environment and financing 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				500
TOTAL FOR PILLAR ONE									8,525

Strategic Pillar 2: Sustainable consumption and transition towards healthy, diverse and sustainable diets for all

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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;	1. No. of diverse foods available in a local area 2.No. of households consuming diverse safe and health diets in the community 3.The % of household that are aware of diverse and safe foods 4.% reduction in 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. No. of training 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)	Extension, marketing, capacity building	Private sector, NGOs-advocacy, Communities, farmer/producer organizations				200

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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.No. of available models/ approaches that have been developed and tested to deliver one health 3. No. of investments and innovations promoted to strengthen one health approach 4. #of policies, legislations and incentives which promote one health approach 5. % decline in the prevalence of non-communicable diseases which are diet related. 6. No. of certified nature-based products used in preventing diseases in plant, human and animals. # training sessions to promote one health approach # of participants sensitized on one health approach.	MoH, NARS (development of modules), Kenya veterinary board, KEPHIS, MoALD, AFA, Trade, KEBS,NEMA	Capacity building/ sensitization/ extension/ advisory service	NGO/private sector, farm organization, traceability companies				50

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 7. No of agribusinesses committed to reduce food loss and waste 8. % change in investments for FLW reduction	MoALD, MoH, MoEF, AFA, Ministry of ICT, Kenya National innovation Agency (KENIA)	Capacity building/ sensitization/ extension/ advisory service	NGO/private sector, farmer organization, traceability companies				100

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 sensitized 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 7. No of severely food insecure households accessing food through donations and other distribution mechanism	MoALD, MoH, MoEF, AFA, Minitry of ICT, Kenya National innovation Agency (KENIA), MoE	Capacity building/ sensitization/ extension/ advisory service CG-identify the marginalized groups to be given food, confirmation and certification of food for human production.	Industry associations ie RETRAC Private sector-help in donation of food				300

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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. # sensitization forums on existing and use digital food platforms 7. Volume of sustainably produced food under public procurement 8. Share of public procured foods sourced through digital tools and platforms	MoALD, MoH, MoEF, AFA, Ministry of ICT,ICT Authority Kenya National innovation Agency (KENIA), MoE; MSME Authority	Capacity building/ sensitization/ extension/ advisory service	Private sector-help in donation of food; Food Banking & Redistribution Networks				250

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vi) Promote agroecology in urban and peri-urban agriculture.	1. Number of agroecological farms or community gardens established in urban and peri-urban areas. 2. Proportion of urban agricultural land managed using agroecological principles 3. Diversity of agroecological practices used. 4. Social acceptance of agroecology in urban communities 5. Number of agroecology training programs offered to urban farmers	County Government MoALD, MoH, MoEF, Research institutions AFA, Kenya National innovation Agency (KENIA)	Capacity building/ sensitization/ extension/ advisory service	NGO, Private sector				200

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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 business models 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); Micro and Small Enterprises Authority	Capacity building/ sensitization/ extension/ advisory service	NGO, Private sector-help in circularity in food system				150

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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. 4.No of the agribusinesses committed to reduce FLW	MoEF, NEMA MoALD, MoH, MOE, Research institutions	Capacity building/ sensitization/ extension/ advisory service, licensing	NGO, Private sector-				200
	iii) Establish and strengthen partnerships among stakeholders on circularity initiatives in the food system;	1.Number of partnerships/ coaliations on circularity established. 2.Number of initiatives accessing funding through partnerships 3. Number of actors receiving mentorship and coaching through partnerships	MoEF, MoALD, MoH, National Treasury, NARS, AFA, NEMA, MSME Authority	Capacity building/ sensitization/ extension/ advisory service, licensing	NGO, Private sector, Farmer Organisations				100

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iv) Provide economic and financial incentives to promote circularity in the food system.	1.Number of incentives 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				200

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	v) Promote equitable access to green energy sources for production and household food preparation such as solar, biogas, wind power etc	1. Percentage of households with access to renewable energy technologies (solar, biogas, wind, etc.). 2. Percentage of vulnerable or marginalized households (women-headed, low-income, rural, ethnic minorities, etc.) adopting renewable energy technologies. 3. Proportion of renewable energy projects that incorporate gender equality and social inclusion components. 4, Number of households or farmers trained on the use and maintenance of renewable energy systems. 5. Reduction in household energy expenditure due to the use of renewable energy technologies.	Min of Energy, MoEF, MoALD, National Treasury, Min of Coop & MSMEs, Min of Trade, NARs, NEMA	Capacity building/ sensitization/ extension/ advisory service, licensing	NGO, Private sector, trade associations				200

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
3. Promote consumption and use 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;	1.No. of awareness campaigns to increase consumption of traditional and indigenous foods conducted. 2.No. of recipes for indigenous foods developed 3.# of consumers expressing changes in in consumption of indigenous foods 45.No. 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.No. of actors using digital platforms 8.% of policies, legislations, regulations and incentives which promote indigenous food and associated culture 9. % change in consumption of indigenous foods	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				250

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 and Heritage-NMK, MoE MoALD, MoH, NARS	Capacity building/ sensitization/ extension/ advisory service, organizing food fair	NGO, Private sector-, media, development partners ISFAA				150
	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 documentations 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 and Heritage-NMK, MoE MoALD, MoH, Ministry of ICT	Capacity building/ sensitization/ extensioN/ advisory service,	NGO, Private sector, Media				150

Strategic objective 2: Promote sustainable consumption and facilitate transition towards healthy and sustainable diets for all									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iv)Leverage on digital platforms to promote traditional foods and cultures.	1.Number of digital platforms promoting traditional foods and cultures 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	Capacity building/ sensitization/ extension/ advisory service,	NGO, Private sector, media				95
GRAND TOTAL FOR PILLAR TWO									**2,595**

Strategic Pillar 3: Enabling environment and incentives for scaling up agroecology

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up

Strategies Area	Activities	Indicators	Responsibility/Institution			Priority			Indicative Budget (KES Millions)
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
1. Strengthen the policy, legal and institutional framework for agro-ecology	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 3. No of Counties domesticating agroecology policies or strategies	MOALD, MoEF, State Dept of ASALs	Provide extension services. Establish demonstrations sites Provide capacity building	NGOs; CBOs Private Sector				50
	ii) Establish comprehensive performance metrics and indicators for monitoring and evaluation of agroecology-related policies, plans and financing;	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, MoEF, KIPPRA, NARS	Provide extension services Establish demonstrations sites Provide capacity building	NGOs; CBOs Private Sector CGIAR centres, Bilateral Agencies, Research institutes				45

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii)Support counties to domesticate and implement the National Agroecology Strategy for Food Systems Transformation;	1.Numberof counties domesticating the agroecology strategy 2.Number of counties implementing the strategy	MOALD, MoEF MOH, CASSCOM JASCOM	Provide extension services Establish demonstrations sites Provide capacity building	NGOs; CBOs Private Sector CGIAR centres, Bilateral Agencies, Research institutes				2,490
	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;	1. Domestication of the international treaty on plant genetic resources and ABS in agriculture and food systems 2.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,				65

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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	MOALD, MoEF MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade, CASSCOM JASCOM	Provide extension services Establish demonstrations sites Provide capacity building	CSOs, NGOs, farmers, development partners				50
	vi)Advocate for policies and incentives that support sustainable pasture and rangeland management including research on efficient fodder and range productivity.	1. Number of new policies or policy amendments introduced to support sustainable pasture and rangeland management. 2. Number of financial or economic incentives (e.g., subsidies, grants, tax relief) introduced to promote sustainable pasture management practices. 3. Amount of funding allocated by governments or international organizations to support sustainable rangeland management programs.	MoALD, MoEF, NARS	Provide extension services Establish demonstrations sites Provide capacity building	CSOs, NGOs, farmers, development partners				150

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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;	1. 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	National Treasury, MoALD, MoEF, NEMA, KIPPRA, School of Monetary Studies,	Sensitization of different actors, Provide capacity building	CSOs, NGOs, development partners, private sector				100
	ii) 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	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies,	Sensitization of different actors, Provide capacity building	CSOs, NGOs, private sector, development partners, philanthropies, etc.				35

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii) Strengthen resource mobilization and funding for agroecology through Public and Private partnerships and other new financing mechanisms such as PES	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 4. % increase of funding through PPPs 5. Resource Mobilization strategy for agroecology initiatives	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary CASCOM Studies	Sensitization of different actors, Provide capacity building	CSOs, NGOs, private sector, development partners, WB, philanthropies, etc. ISFAA JASCOM CSOs				45
	iv)Promote appropriate funding models that address special needs of actors in agroecology	1.Number of agroecological actors (e.g., farmers, cooperatives, small businesses) receiving targeted financial support for agroecology-related activities. 2. Number of new or adapted financial instruments (e.g., microfinance, impact investing) developed to support agroecology. 3. Number of business plans or financing proposals developed by agroecology actors with external support (e.g., grants, loans, investors).	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies,	CASCOM, Sensitization of different actors, Provide capacity building	CSOs, NGOs, private sector, development, financial institutions				30

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	v) Develop innovative mechanisms to improve access to affordable and accessible financial services to livestock keepers and other value chain actors.	1. Number of livestock keepers and value chain actors with access to formal financial services (e.g., savings accounts, loans, insurance). 2. Number of new financial products developed to address the specific needs of livestock keepers	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies,	Sensitization of different actors, Provide capacity building	CSOs, NGOs, private sector, development, financial institutions				50
3. Develop and create incentives for scaling up agro-ecology	i Create subsidy programs to support agroecology	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	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies	CG (creating markets, linkages,	CSOs, NGOs, private sector, development partners, farmers, KOAN,				30

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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)	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies	CG (creating markets, linkages,	CSOs, NGOs,				50

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii) Promote awareness and education targeting local communities on ABS issues relevant in agriculture and food systems	1. Level of knowledge about ABS among local community members 2. Percentage of local communities that recognize the value of their genetic resources and traditional knowledge 3. Number of local farmers, community leaders, and youth engaged in ABS education programs. 4. Number of ABS-related agreements signed or negotiated at the community level. 5. % of local agricultural projects or initiatives that explicitly incorporate ABS agreements.	MoALD, MoEF, MoE, NARS GERRI	CG (creating markets, linkages	CSOs, NGOs				100

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iv) Promote access and use of appropriate technologies and equipment	1. Number of livestock producers adopting sustainable production practices that reduce environmental impact (e.g., rotational grazing, agroforestry).	MOALD, MoEF MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade, CASSCOM JASCOM	CG (creating markets, linkages, sensitization, extension	CSOs, NGOs, farmer organisations				100
	v) Identify and engage grassroots, national and regional agroecology champions in promotion of agroecology	1. Number of identified agroecology champions at the grassroots, national, and regional levels. 2. Number of agroecology networks or coalitions involving champions at local, national, and regional levels. 3. Number of agroecology training and capacity-building programs organized for champions.	MOALD, MoEF MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade, CASSCOM JASCOM	CG (creating markets, linkages, extension, capacity building	CSOs, NGOs, farmer organisations				300

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vi) Develop customized insurance products for agroecology enterprise.	1. Number of agroecology-specific insurance products developed 2. Number of agroecology practices integrated into insurance policies (e.g., organic certification, permaculture, agroforestry) 3. Percentage of agroecology enterprises with access to customized insurance products. 4. Number of outreach or education programs targeting agroecological enterprises about insurance options.	National Treasury, MoALD, MoEF, NEMA, KIPPRA, MoALD, KIPPRA, School of Monetary Studies	CG (creating markets, linkages	CSOs, NGOs, farmer organisations				100

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
4. Strengthen markets and trade for agro-ecology 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	MOALD, MoE MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade,	CG (creating markets, linkages	NGOs, CSOs, development partners, farmers, private sector				50
	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 (MoALD, MoT, KEBS, AFA,	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				30

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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, Ministry of Co-operatives and Micro, Small and Medium Enterprises, treasury etc)	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				50
	iv)Establish infrastructure and systems that support the acquisition and use of inputs that align with agroecological approaches and practices;	1. Number of agroecology input supply chains or distribution networks established. 2. Percentage of farmers with access to infrastructure that supports agroecological inputs. 3. Price competitiveness of agroecological inputs compared to conventional inputs.	NG (MoALD, Trade, Ministry of Co-operatives and Micro, Small and Medium Enterprises, treasury etc)	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				30

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	v) Promote the application of agroecological principles and practices in value addition and agro-processing;	1. Percentage of agro-processing enterprises adopting agroecological principles (e.g., organic certification, low-input practices, eco-friendly packaging). 2. Proportion of processed products sourced from agroecologically grown raw materials. 3. Percentage of agro-processing operations using locally sourced agroecologically grown inputs (e.g., crops, spices, herbs).	NG (MoALD, Trade, Ministry of Co-operatives and Micro, Small and Medium Enterprises, treasury etc)	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				50
	vi)Increase marketing of livestock and rangeland resources for improved livelihoods of pastoral communities;	1. Percentage increase in the number of pastoral producers (farmers, herders) accessing formal markets for their livestock or rangeland products 2. Number of pastoral households engaging in diversified livelihood	NG (MoALD, Trade, Ministry of Co-operatives and Micro, Small and Medium Enterprises, treasury etc)	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				50

Strategic objective 3: Create an enabling environment and incentives for agroecology transition and scaling up									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			National Govt	County Govt	OH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vii)Strengthen the capacities of producers and marketing groups production, processing and storage of livestock products.	1. Number of livestock producers and marketing groups trained in production, processing, and storage techniques 2. Percentage of trained producers adopting new practices in livestock production, processing, or storage. 3. Number of livestock producers adopting sustainable production practices that reduce environmental impact (e.g., rotational grazing, agroforestry).	MOALD, MoE MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade,	CG (creating markets, linkages, extension, capacity building	NGOs, CSOs, development partners, farmers, private sector				100
TOTAL FOR PILLAR THREE									**4,140**

Strategic Pillar 4: Research, innovation, training, and co-learning on agroecological approaches

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
1. Mainstream Research on agro-ecology in the country's National Agriculture Research System (NARS)	i) Identify gaps of public and private stakeholders as a basis for research prioritization on agroecology;	1. Number of stakeholders (public and private) who capacity gaps in Agroecology have been identified 2. Number of programs that uses a documented gaps as a basis of capacity building on Agroecology 3. Number of stakeholders trained on the identified gaps in Agroecology 4. Number of stakeholders who are disseminating the identified gaps in Agroecology 5. Number of training institutions implementing programs to address Agroecology capacity gaps	MOE, NARS MoALD, MoE,, KALRO	Extension, capacity building	NGOs, Private sector, Farmer organizations, CGIAR				1,000 .

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
		6.Number of research projects that targets identifies Agroecology capacity gaps 7.. % of policies, legislations, regulations and incentives that promote capacity building of stakeholders 8.Number of NARS stakeholders who have integrated Agroecology research and trainings in their plans 9.Number of stakeholders integrating co-learning as part of capacity building for Agroecology							

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 Agroecology 3.Number of stakeholders that are aware and implementing the Agroecology research plan and agenda 4. Number of collaborative research projects on Agroecology emerging from different MSPs	NARS, MoE, MoALD, KALRO, NMK, JASSCOM	CASSCOM, extension, capacity building,	NGO, Private sector, media, Farmer organizations				1,100

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 design-ing, planning, implement-ing and validation of Agroecology 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 adopt-ing research output 5.increase collaboration and partnership for ap-plication and utilization	NARS, MoE, MoALD, Ministry of ICT	Extension, capacity building, farmer mobilization	NGOs, media, farmer organizations, private sector, intervention beneficiaries				500

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 Agroecology 3.# of development partners supporting Agroecological research and extension 4.% of funds allocated to Agroecology research and extension by different stakeholder 5.Availability of a coordination mechanism for efficient management of Agroecology 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,	CASSCOM, Extension, capacity building	NGOs, Private sector, farmer organizations, development partners, intervention beneficiaries				400

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vi) Integrate Agroecology in the education curricula at all levels.	1. Number of programs integrating Agroecology in Agricultural education curricula at all levels 2. Number of trainers/educators (teachers, lecturers, tutors) trained on Agroecology 3. Integration of Agroecology in to the basic education assessment. 4. Number of education institution that have integrated Agroecology in their curriculum. 5. Number of people that have received vocational training on Agroecology. 6. Number of courses/programs on Agroecology in training institutions. 7. Number of graduates in Agroecology courses	MoE, Basic and higher education institutions, MoALD, NARS	Extension, capacity building, mobilization and dissemination	NGO, Private sector, development partners.,				525

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vi) Matching suitable agroecological practices with agroecological zones and enterprises.	1. Percentage of agricultural enterprises that have adopted agroecological practices tailored to local agroecological zones. 2. Percentage of farmers in targeted AEZs aware of suitable agroecological practices for their enterprises. 3. Percentage of farmers in AEZs adopting agroecological practices suited to their farming enterprises.	MOALD, MoE MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs	Extension, capacity building	NGOs, Private sector, farmer organizations, development partners, intervention beneficiaries				400

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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 Agroecology 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 criteria for centre of excellence in Agroecology 6. distribution of centres of excellence in Agroecology	MoALD, MoE, NARS, KALRO	Extension, capacity building	NGO, Private sector				300

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	ii) Package and mainstream agroecology in extension services;	1. Percentage of extension materials (manuals, brochures, training guides) that incorporate agroecological principles. 2. Number of extension staff trained on agroecology and sustainable agricultural practices. 3. Number of agroecology-focused training programs or workshops conducted for extension staff. 4. Existence of a monitoring and evaluation (M&E) system to track the effectiveness of agroecology extension services	MoALD MoE, Basic and higher education institutions, , NARS		NGOs, Private sector, farmer organizations, development partners, intervention beneficiaries				300
	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.	MoALD, MOE, Ministry of culture and heritage (State Department for Culture, The Arts & Heritage, NMK	Extension, capacity building	NGO, Private sector, media				300

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 centres 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 ((State Department for Culture,), MoE, MoALD, -NMK	Extension, capacity building	NGO, Private sector, media				200
	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, s, indigenous committees 3. Number of women, youth, PLWDS, and indigenous community groups that have been trained and adopted agroecology.	MoALD, NLWD, MoE, State Department of gender	Extension, capacity building	NGO, Private sector, Farmer organization				200

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	vi)Strengthen digital and physical innovation platforms to support dissemination of agroecology research and information.	1. Number of digital and physical innovation platforms established or strengthened. 2. Number of users or visitors engaging with digital platforms (e.g., website traffic, social media interactions). 3. Number of farmers adopting climate-resilient agroecological practices as a result of platform exposure.	MoALD MoE, Basic and higher education institutions, ,KALRO, NARS	Extension, capacity building	NGOs, Private sector, farmer organizations, development partners, intervention beneficiaries				200

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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 consumption of indigenous 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, MoE MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade,	Extension, capacity building	NGO, Private sector, Farmer organization				200

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	ii) Establish demonstration centres on innovative agroecology practices by farmers	1.# of demonstration centres established 2. Number of farmers or communities with access to at least one demonstration center. 3. Number of agroecological practices tested or scaled by farmers as a result of demonstration center visits.	MoALD MOALD, MoE MOH, State Dept of ASALs and Regional Development, Min of Water, Sanitation & Irrigation, Min of Coops and MSMEs, Min of Trade,	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer organization				200
	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				200

Strategic Objective 4: Strengthen research, innovation, training and to foster co-creation and co-learning on agroecological approaches									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	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 from Agroecology practices	MoALD, MoH	Extension, demonstration sites, capacity building	NGO, Private sector, Farmer organization				200
	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 organization				200
TOTAL FOR PILLAR FOUR									**6,425**

Strategic Pillar 5: Social equity, inclusion and participatory governance in the agri-food system

Strategic objective 5: Enhance social equity, inclusion and participatory governance in the food system									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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				100

Strategic objective 5: Enhance social equity, inclusion and participatory governance in the food system									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	ii)Scale up interventions which would allow women as well as men to better combine reproductive and productive work.	1. Number of households with access to labor-saving technologies or tools (e.g., improved cooking stoves, water collection devices, mechanized farming equipment). 2. Number of training programs conducted to enhance skills in using time-saving technologies 3. Percentage of households with an equitable distribution of reproductive labor (e.g., child care, fetching water, cooking) 4. Number of gender-sensitive training or awareness campaigns on shared domestic responsibilities. 5.Number of gender-sensitive policies and laws promoting equal sharing of domestic and productive labor.	State department of Gender; Ministry of lands; MOALD		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations				150

Strategic objective 5: Enhance social equity, inclusion and participatory governance in the food system									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii) Promote technologies and practices that enable meaningful participation of women and Persons with Disabilities (PWDs) LWD;	1.# of labour-saving technologies developed/ promoted # of Inclusive labour-saving technologies developed/ promoted 2.# Households adopting and using labour saving technologies to support transition to agroecology	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations				80
	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				60

Strategic objective 5: Enhance social equity, inclusion and participatory governance in the food system									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
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				150
	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				100

Strategic objective 5: Enhance social equity, inclusion and participatory governance in the food system									
Strategies Area	**Activities**	**Indicators**	**Responsibility/Institution**			**Priority**			**Indicative Budget (KES Millions)**
			NGOK	CGOK	Other SH	ST <3YRS	MT 3-5YRS	LT >6YRS	
	iii)Increase the capacity of communities to engage in the food system decision making and 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 transitioning	NG State department of Gender; Ministry of lands; MOALD,		NGOs/CSO Private sectors Kenya Farmer Organization Farmer organizations				150
TOTAL FOR PILLAR 5									**1,590**
GRAND TOTAL FOR IMPLEMENTATION OF NAS - FST									**23,285**

Annex III: Members of the Core Team on the Development of NAS - FST

Name	Organization
1. Dr. Martin Oulu	ISFAA/GIZ
2. Eng. Laban Kiplagat	MOALD- SDA/ISFAA
3. Nancy Rapando	WWF
4. Dr. Robert Mbeche	JKUAT
5. Eustace Kiarii	KOAN
6. Daniel Gitai	Muranga County
7. Reuben Chumba	Vihiga County
8. Francis Shivonje	Biovision Foundation
9. David Ombalo	MOALD/SDA
10. Dr. Josiah Ateka	JKUAT
11. Josephine Love	MOALD/SDA
12. Mary Irungu	PELUM Kenya
13. Peter Owoko	MOALD/SDA
14. Antony K'owiti	ISFAA
15. Benson Kamau	MOALD/SDA
16. Emmanuel Atamba	TMG
17. Juma Mohammed	ISFAA
18. Wajiru Kamau	ISFAA
19. Prof. Alex Awiti	ICRAF
20. Grace Mugo	MOALD/SDA
21. Dr. Peris Kariuki	NMK
22. Reagan Buluma	Hand in Hand EA
23. Swale Kitasi	Action Aid
24. Douglas Muruka	MOALD/SDA
25. Nelson Mandela	MOALD/SDA

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