COUNTY GOVERNMENT OF BUNGOMA

DEPARTMENT OF AGRICULTURE, LIVESTOCK, FISHERIES, IRRIGATION AND COOPERATIVES

Bungoma County Agroecology Strategy

2025-2034

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REPUBLIC OF KENYA

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Boosting Sustainable Food Production in Kenya

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NUTRITION in CITY ECOSYSTEMS

Foreword

Agriculture serves as the cornerstone of food production, trade, and employment within the County, playing a pivotal role in fostering the growth of its economy. The Kenya Vision 2030 recognizes agriculture as a crucial sector poised to achieve an ambitious annual growth rate of 10 percent. This visionary framework seeks to transform smallholder agriculture from its current subsistence model, characterized by low production and productivity and minimal value addition, into a vibrant, commercially-oriented, and internationally competitive agricultural landscape.

Central to this transformative journey is agroecology, often referred to as the "sleeping giant" of the agricultural sector, which has the potential to unlock opportunities across a diverse array of sub-sectors and value chain nodes including value addition in food production, the textile and energy industries, and the growing field of biotechnology. By investing in agroecology, we can create jobs, bolster revenue generation, and stimulate robust economic growth for the county.

In recognition of the vital role that agroecology plays in the local economy, the County Government of Bungoma, in collaboration with relevant stakeholders, has taken proactive steps to formulate the Agroecology strategy. This strategy will serve as a foundational blueprint for legislation, strategies, plans, projects, and programs aimed at advancing agroecology development within the county. Crafted in accordance with the pertinent provisions of the Constitution and the national agroecology strategy, this initiative identifies the current challenges facing the agricultural sector and delineates effective interventions designed to overcome them.

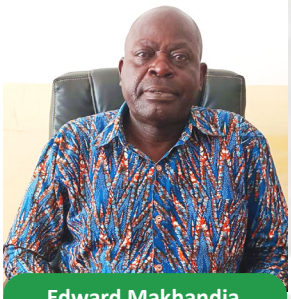
Addressing these challenges necessitates an acknowledgment of the institutional and capacity constraints within the agriculture sector. The strategy aims to establish functional linkages between the agricultural sector and various institutions, emphasizing their critical roles in enhancing agroecology value chains. It underscores the interdependence of national and county agencies, as well as stakeholders, each of whom plays a vital part in the advancement of agroecology. In this regard, the strategy calls for a committed allocation of resources from both National and County Governments to ensure the sustainable development of agroecology in the county.

In conclusion, I urge everyone involved to work collaboratively toward the full implementation of this framework, ensuring that we leverage the immense potential of agroecology for the benefit of our community and economy in the county.

ENG. HERBERT KIBUNGUCHY
COUNTY EXECUTIVE COMMITTEE MEMBER,
DEPARTMENT OF AGRICULTURE, LIVESTOCK, FISHERIES, IRRIGATION AND COOPERATIVES

Acknowledgement

Timothy Wanjala



Edward Makhandia

The development of the Agroecology strategy stands as a testament to the collaborative efforts and invaluable contributions of numerous stakeholders. We extend our sincere appreciation to the E.U-funded BOOST project through Food and Agriculture Organization (FAO) for its substantial financial and technical support which was instrumental in guiding and strengthening the County Strategy development process. We also acknowledge the valuable contribution of Participatory Ecological Land Use Management (PELUM) Kenya, Biodiversity and Biosafety Association of Kenya (BIBA Kenya), Sustainable Agriculture Foundation Africa (SAF-AFRICA) through the NICE project, SNV implementing Partners-Society of Crop Agribusiness Advisors of Kenya (SOCAA)/ Kenya Renewable Energy Association (KEREA) whose complementary technical inputs and partnerships supported the enrichment of the process.

Our heartfelt appreciation goes to the County Executive Committee Member responsible for the Agriculture Department, Eng. Herbert Kibunguchy, for his visionary leadership and unwavering commitment throughout the strategy development process.

This strategy was drafted by a dedicated technical working group (Annex 8) that encompassed a diverse range of expertise from the County Departments responsible for Agriculture, Trade, the County Attorney's office, and other engaged stakeholders including Development partners and Non-Governmental Organizations. This technical working group was instrumental in producing the foundational drafts that served as the basis for in-depth stakeholder consultations and meaningful public participation.

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COUNTY CHIEF OFFICER,
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EDWARD MAKHANDIA
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AND FISHERIES

Executive Summary

Bungoma County's Agroecology Strategy offers a transformative blueprint for addressing urgent agricultural challenges and harnessing agroecology to create a sustainable and inclusive food system. Agriculture forms the backbone of the county's economy, contributing 43% to its Gross County Product (GCP) and 3.8% to Kenya's national agricultural output. Over 78% of households are engaged in farming, yet more than 43% of residents live below the poverty line.

The vision is to establish a resilient, inclusive, and sustainable food system that guarantees food security, economic growth, and environmental protection. The mission aims to revolutionize agriculture through agroecological practices, community empowerment, and sustainable resource management, promoting equitable access to nutritious food and resilience to climate change. Strategic goals include increasing agricultural productivity, supporting climate-resilient systems, conserving biodiversity, and strengthening institutional frameworks.

The strategy focuses on key development areas. It seeks to sustainably enhance agricultural production by improving soil health, promoting organic inputs, and providing farmer training. Emphasizing food security, the strategy encourages diversity in local food systems and enhances rural-urban food access. The county advocates for afforestation, renewable energy, and climate resilient methods to combat climate change while complying with environmental laws. Gender equality and social inclusion are advanced through gender-sensitive policies and support for women, youth, and vulnerable groups. Strengthening the enabling environment involves establishing supportive legal frameworks, enhancing policy participation, and improving institutional coordination. The strategy also aims to increase agricultural financing through infrastructure development and tailored financial products. Capacity building in agroecology is prioritized via training programmes and strengthening research-extension linkages. Lastly, the strategy aims to improve market systems by upgrading infrastructure, post-harvest management, and market linkages.

It sets out a framework to transition the county's food systems towards sustainability, resilience, and inclusiveness. It aligns with global frameworks such as the Sustainable Development Goals (SDGs) and national Strategies like the National Agroecology Strategy for Food Systems Transformation (2024–2033), highlighting agroecological principles for food security, climate adaptation, biodiversity conservation, and social equity. Existing legal frameworks such as the Constitution of Kenya (2010), Vision 2030, the Agricultural Policy (2021), and the Climate Change Act (2016), along with County policies like the Bungoma County Agriculture Soil Management Policy (2023), underpin the strategy. It promotes sustainable practices, climate smart agriculture, biodiversity conservation, and social inclusion. Initiatives such as the Bungoma County Climate Change Action Plan (2023–2027) and Food Safety Policy (2023) further bolster resilience and food security.

The strategy aligns with both local and international sources of funding, establishing public-private partnerships and leveraging cooperative models for financial sustainability. Engagement with national and global programmes such as Kenya's Agricultural Sector Transformation and Growth Strategy (ASTG) 2019-2029, Stichting Nederlandse Vrijwilligers (SNV's) REALMS project and FAO's BOOST project will ensure continuous investment in agroecological practices. If funded and implemented over ten years, the strategy could achieve milestones such as establishing 45 community seed banks, 45 agroecology service hubs, 90 farmer service centres serving over 135,000 farmers by providing advisory services, input access, technical support and creating 540 jobs. Market infrastructure improvements include 45 grocery stores serving over 22,500 customers daily, creating 450 jobs, with an estimated annual turnover of Ksh 324 million. Aggregation centres and agro-processing plants supporting 13,500 farmers are expected to employ over 900 workers. Climate resilience activities like tree nurseries, renewable energy projects, and climate monitoring are projected to generate over 3,600 jobs and increase annual turnovers by Ksh 663.5 million. Youth and vulnerable groups will benefit from innovation hubs serving 54,000 individuals, including youth and vulnerable groups, and employing 225 ICT professionals and 236 community extension services. Furthermore, over 5,000 jobs across sectors are anticipated, fostering notable economic growth.

It proposes establishing the County multi stakeholder platform to oversee implementation, monitor progress, and ensure accountability. Collaboration among government departments, development partners, private sector players, and NGOs is vital for transforming Bungoma's food systems. By integrating these efforts, the Bungoma County Agroecology Strategy aims to tackle key challenges from food insecurity and climate change to youth unemployment and weak market linkages, building a resilient, inclusive, and thriving agricultural ecosystem.

It also incorporates a participatory Monitoring, Evaluation, Accountability, and Learning (MEAL) system to assess and enhance agroecological interventions. Within six months of commencement, a MEAL framework aligned with the County Integrated Monitoring and Evaluation Systems (CIMES) will be developed, involving all stakeholders in data collection and review to ensure transparency and accountability. It also includes regular reporting, with quarterly and annual progress reports prepared by the County multi-Stakeholder Platform and reviewed by the County Agriculture Sector Steering Committee (CASSCOM) to inform decision-making. The strategy will span ten years, subject to periodic reviews to address emerging challenges and maintain alignment with sustainable development goals and innovative agricultural practices, fostering long-term transformation and sustainability of the food system.

Table of Contents

Acronyms and Abbreviations

AAK	Architectural Association of Kenya
ADS	Active Directory Services
AEZs	Agro Ecological Zones
AI	Artificial Insemination
ASTGS	Agricultural Sector Transformation and Growth Strategy
ASP	Agroecology Service Providers
ATCs	Agricultural Training Centers
ATMs	Automated Teller Machines
ATVETs	Agricultural Technical and Vocational Education Training
BOOST	Boosting sustainable food production in Kenya project
BSF	Black Soldier Fly
CASSCOM	County Agriculture Steering Committee
CBO	Community Based Organization
CCAP	Climate Change Action Plan
CFs	Community Facilitators
CGA	Cereal Growers Association
CIAT	International Center for Tropical Agriculture
CIDP	County Integrated Development Program
CIMEs	County Integrated Monitoring and Evaluation Systems
CREADIS	Community Research in Environment and Development Initiatives
CRP	Community Resource Person
CSA	Climate Smart Agriculture
CU	Control Unit
DOALFIC	Department of Agriculture Livestock Fisheries Irrigation and Co-operatives
DSA	Daily Subsistence Allowance
EMCA	Environment Management Co-ordination Act
EU	European Union
FAO	Food and Agriculture Organization

FFS	Farmer Field school
FNSP	Food National Security Policy
FSCs	Farmer Service Centers
GCP	Gross County Product
GEF	Global Environmental Facility
GHG	Greenhouse Gas Emission
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMOs	Genetically Modified Organisms
ICIPE	International Centre for Insect Physiology and Ecology
ICRAF	International Centre for Research in Agroforestry
ICT	Information & Communication Technology
IFAD	International Fund for Agricultural Development
ILRI	International Livestock Research Institute
IPM	Integrated Pest Management
ITK	Indigenous Technical Knowledge
KALRO	Kenya Agricultural and Livestock Research Organization
KAMIS	Kenya Agricultural Market Information Systems
KDHSR	Kenya Demographic and Health Survey Report
KEBS	Kenya Bureau of Standards
KEFRI	Kenya Forest Research Institute
KeFS	Kenya Forest Service
KENAFF	Kenya National Farmers' Federation
KEPHIS	Kenya Plant Health & Inspectorate Services
KICD	Kenya Institute of Curriculum Development
KIOF	Kenya Institute of Organic Farming
KIRDI	Kenya Industrial Research and Development Institute
KMFRI	Kenya Marine and Fisheries Research Institute
KVB	Kenya Veterinary Board
MEAL	Monitoring Evaluation Accountability and Learning
MoU	Memorandum of Understanding
NAAIP	National Accelerated Agricultural Input Program
NARIGP	National Agricultural and Rural Inclusive Growth Project

NASEP	National Agricultural Sector Extension Policy
NASFST	National Agroecology Strategy for Food System Transformation
NBS	Nature Based Solution
NCPB	National Cereal & Produce Board
NEMA	National Environment Management Authority
NLUP	National Land Use Policy
NSWCP	National Soil and Water Project
PCPB	Pest Control Products Board
PELUM	Participatory Ecological Land Use Management
SACCOs	Savings and Credit Cooperative Organizations
SMEs	Small & Medium Enterprises
SNV	Stichting Nederlandse Vrijwilligers
SOCAA	Society of Crop Agribusiness Advisors of Kenya
T&VA	Training & Visit Approach
TTIs	Technical Training Institutions
TVET	Technical Vocational Education & Training
USAID	United States Agency for International Development
VTCs	Vocational Training Centres
WETPA	Western Tree Planters Association
WFP	World Food Program
WHH	Welthungerhilfe
WRA	Water Resource Authority


Our Heritage Our Wealth

Chapter 1: Context and Rationale

1.0 Introduction

This chapter outlines the context and rationale for developing Bungoma County's Agroecology Strategy, emphasizing the need for transformative interventions to secure a sustainable and inclusive future for the county's agricultural sector. Key sections include the agroecology's background in the County, the justification for the development of the Strategy, and overview of the constitutional and policy context.

1.1 Background

The agricultural sector is a key contributor to Kenya's economy and the means of livelihood for most of the rural population. In 2021, Agriculture contributed 21.2% to the national GDP. The sector equally contributes significantly to other economic activities such as manufacturing, wholesale and retail trade, transport and storage among others. Sustained agricultural growth is critical to uplifting the living standards of Kenyans as well as generating rapid economic growth. Kenya Vision 2030 identified agriculture as one of the six key economic sectors expected to drive the economy to a projected 10% annual economic growth. The sector is central to the Vision 2030 goal of "a globally competitive and prosperous country with a high quality of life by 2030" which will be realized through promoting innovative, commercially oriented, modern agriculture as envisioned in the Agriculture Sector Transformation and Growth Strategy (ASTGS), 2019-2029.

Bungoma County is notable for its thriving agricultural sector, supported by the region's abundant natural resources, favorable climate, and population with a strong farming heritage. About 69.1% of the residents live in rural areas and are involved in agriculture, either directly or indirectly. This sector plays a significant role in the county's economy, contributing 43% to Bungoma's Gross County Product (GCP) (KNBS, 2023). Between 2018 and 2022, Bungoma County contributed 2.1% to the national GDP.

The County is located in the western region of Kenya within the Lake Victoria Basin, covers an area of 3,032.4 km² and lies at an altitude of 1,200 to 4,321 meters above sea level. It borders the Republic of Uganda to the Northwest, Trans-Nzoia County to the Northeast, Kakamega County to the East and Southeast, and Busia County to the West and Southwest. Prominent physical and topographic features mark the county's landscape, including Mount Elgon, Chetambe Hill, Sang'alo Hill, and Kabuchai Hill. It is home to several rivers, such as the Nzoia, Kuywa, Sosio, Kibisi, and Sio-Malaba/Malakisi, and waterfalls like Nabuyole and Teremi. Notably, Mount Elgon and Sang'alo Hill feature captivating caves that attract visitors (CIDP 2023-2027).

Bungoma County had a population of 1,670,570 according to the 2019 Population and Housing Census, and is projected to reach 1,914,778 by 2025. The county has 358,796 households out of which 280,445 engage in farming. According to the 2021 KNBS Poverty Report, Bungoma County's overall poverty index was 43.9% higher than the national average of 38.6%, while its food poverty rate was 31.0%, slightly above the national rate of 30.5%. Agriculture plays a critical role in poverty alleviation and employment, particularly for the County's youth. About 78% of households engage in crop and livestock farming, and approximately 50% of residents earn their income directly from agriculture, compared to 44% nationally.

Land is the most important resource in agricultural production therefore limited availability of productive land is a major constraint to increased agricultural production. The total County area is 3,024 km^2 out of which the total agricultural land area is 2,232.69 km^2. Subsistence farming utilizes 2,024.94 km^2, while 190.91 km^2 is under commercial farming. The average holding size in the county for small-scale farms is 1.5 acres while for large-scale farms is 10 acres. This implies that agricultural land sizes are declining due to the fragmentation of land into uneconomical units/parcels.

Soil is an equally important resource in agricultural production as it constitutes the foundation of agricultural development and ecological sustainability and the basis for food production. Bungoma County's soils are diverse, reflecting the region's varied topography, climatic conditions, and land use practices. The County has a mix of highland and lowland areas, influencing soil characteristics and fertility.

The first soil survey in Bungoma County was done between 2010 and 2011 by KARI (now KALRO) under the National Accelerated Agricultural Input Program (NAAIP) whose results released in 2013 showed that most of the farms had acidic soils (pH less than 5.5) and therefore recommended use of non-acidifying fertilizer and liming. The second soil survey in 2015 indicated that 67% of the sampled soils from all the wards were acidic.

Bungoma County's climate is characterized by moderate temperatures, significant rainfall, and varied topography. Average temperatures range from 20°C to 27°C (68°F to 81°F), with daytime highs of 28°C to 30°C (82°F to 86°F) in lower altitudes and nighttime lows of 15°C to 18°C (59°F to 64°F). The county receives annual rainfall between 1,200 mm and 1,800 mm (47 to 71 inches), divided into two main seasons: the heavier and longer long rains (March to May) and the lighter but substantial short rains (October to December). Dry periods typically occur from December to early March, though sporadic rainfall may still occur. Humidity is moderate to high, particularly during rainy seasons, with more pronounced humid conditions in lower-altitude areas. Winds are generally light to moderate, intensifying during thunderstorms common in the rainy seasons, especially during the long rains.

Bungoma County has diverse Agro Ecological zones (AEZs) shaped by its varied topography, climate, and rainfall patterns. These AEZs are crucial in determining the crops and farming practices best suited for different areas, enhancing agricultural productivity and sustainability. The county's AEZs are classified as follows:

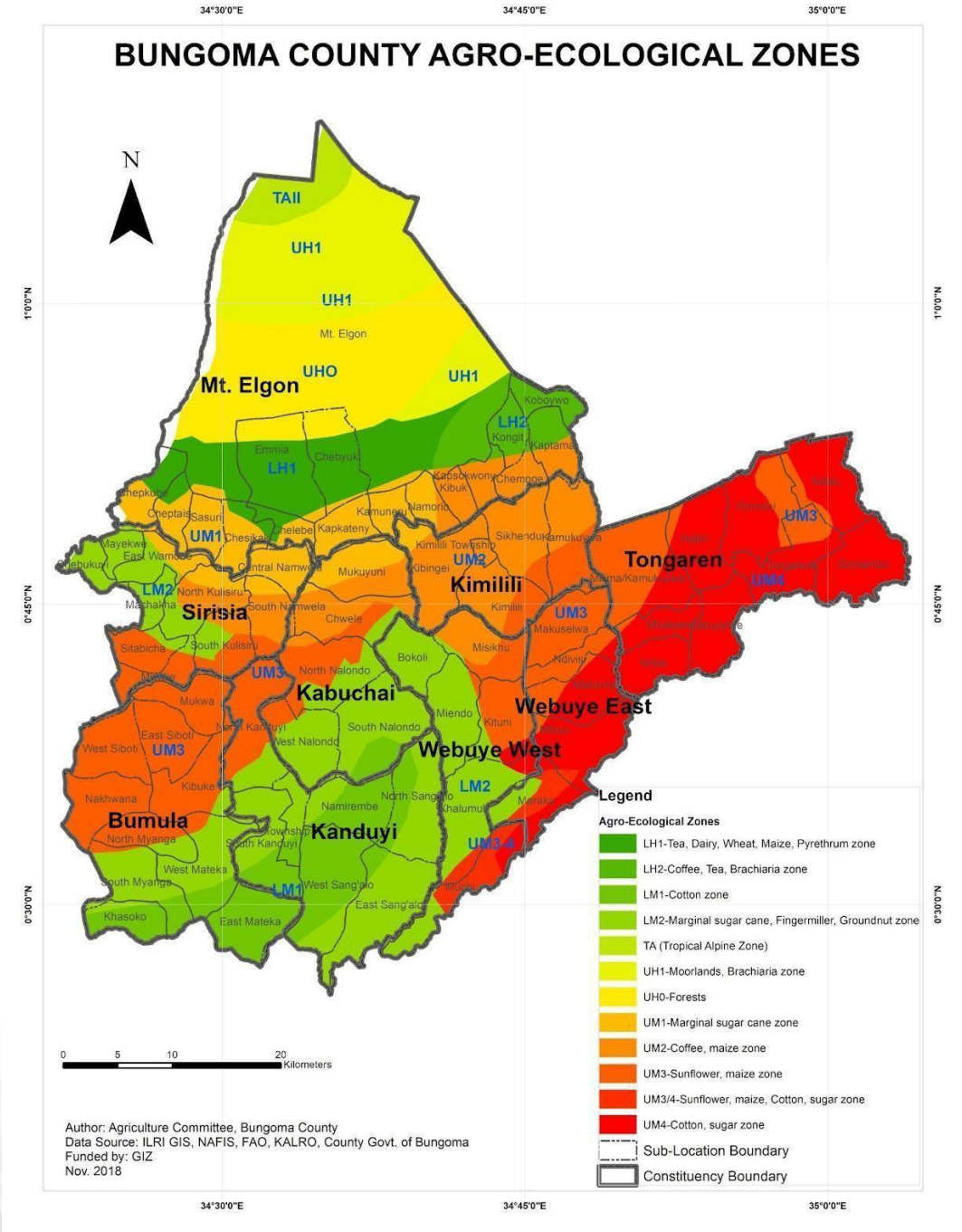


Figure 1: Map 1. Bungoma County Agroecological Zones

In Bungoma County, agroecology plays a crucial role in addressing the challenges of poverty, food insecurity, declining soil fertility, and climate change. The approach seeks to harmonize agricultural productivity with environmental sustainability, social equity, and cultural appropriateness by leveraging indigenous and scientific knowledge. The county's

agricultural sector is predominantly smallholder-based, with 78% of households in crop and livestock farming. These farming systems often face challenges such as soil degradation, erratic rainfall, pest infestations, and high dependence on chemical inputs.

Agroecological practices such as Regenerative Agriculture, Organic Agriculture, Agroforestry, Integrated Pest Management (IPM), Soil and Water Conservation and Ecological/Nature Agriculture offer a pathway to overcome these challenges by building resilient farming systems that are productive and environmentally sound. Guided by the Food and Agriculture Organization (FAO)'s ten elements of agroecology: diversity, co-creation of knowledge, synergies, efficiency, recycling, resilience, human and social values, culture and food traditions, responsible governance, and circular and solidarity economy, this Strategy provides a holistic framework for agroecological transition that recognizes both the ecological and socio-economic dimensions of food systems transformation.

1.2 Justification for the Strategy

Agriculture remains a central contributor to overall County's economic growth and development. The Sector has recorded impressive growth since devolution, however, the sector faces multiple interconnected challenges that demand urgent intervention. Climate change has intensified erratic rainfall, prolonged droughts, and rising temperatures, reducing crop yields and threatening food security. Declining soil fertility with over 67% of farmland being acidic, emerging pests and diseases and high cost of inputs undermine productivity.

Market and systemic barriers further exacerbate these issues. Weak value chains and inadequate financing limit access to fair markets for agroecological produce, while the absence of certification and traceability in conventional systems blocks opportunities for premium pricing. Gender and social exclusion persist, with women and youth often marginalized due to patriarchal land ownership norms and limited access to resources. These constraints perpetuate food and nutrition insecurity, with 31% of residents experiencing food poverty despite the county's agricultural potential.

The Fourth Schedule of the Constitution of Kenya, 2010, the County Government Act, 2012 and the Legal Notice No.139 allow County Governments among other responsibilities, to formulate and review county specific policies and strategies. The National Agroecology Strategy for Food System Transformation 2024-2033 has been developed 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 however, does not address county specific agroecological issues.

In efforts aimed at addressing some of these challenges, the County Government has developed the Bungoma County Agriculture Sector Policy and Agriculture Soil Management Policy. These policies are inclined in addressing challenges towards conventional farming and therefore do not adequately address agroecology related challenges. The policies are not self-executing and necessitates the formulation of specific strategies to address emerging challenges. By adopting this strategy, Bungoma can catalyze a just transition

toward a resilient, inclusive, and sustainable food system, aligning with global sustainability goals while tackling its unique challenges.

1.3 Overview of Constitutional and Policy Contexts

Table 1: Overview of Constitutional and Policy Context

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
Overarching laws	The Constitution of Kenya 2010.	The Constitution of Kenya 2010 under Articles 43 (1) for a, 11 and 69(1) for a emphasize the right to food, the significance of culture, and the preservation of indigenous knowledge and biodiversity, respectively. Articles 11, 43 and 72 provide opportunities for agroecology since they promote community seed systems and self-determined food systems, including appropriate and supportive legislation.
	United Nations Framework Convention on Climate Change (UNFCCC)	Sharm el-Sheikh Joint Work on implementation of climate action on Agriculture and Food Security (SJWA) is a climate-policy workstream under the United Nations Framework Convention on Climate Change (UNFCCC), targeting how agriculture and food systems should respond to climate change. It calls for a holistic, multi-benefit food-systems approach integrating adaptation, mitigation, biodiversity conservation and food-security outcomes. Bungoma County commits to applying the Joint Work principles through inclusive stakeholder coordination, science–indigenous knowledge integration, and transparent reporting consistent with Kenya's NDC and National Climate Change Action Plan III (2023–2027).
	Vision 2030	Kenya Vision 2030 identifies agriculture as the engine of growth through transformation of smallholder and subsistence agriculture to innovatively and commercially oriented agriculture.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
	Sustainable Development Goals (SDGs)	SDGs 1, 2, 5, 12, 13, 14, 15 provide for eradication of poverty; end hunger, achieve food security and improve nutrition and promote sustainable agriculture; aims to achieve gender equality and empower all women and girls; ensures sustainable consumption and production; builds climate resilience and mitigate climate change; secures sustainable use of terrestrial and aquatic resources; halts the loss of biodiversity.
Agriculture	Agricultural Sector Transformation and Growth Strategy (ASTGS) (2019 –2029)	The strategy recognizes the declining biodiversity and needs 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.
	National Agroecology Strategy for Food System Transformation (2024-2033)	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. 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.
	National 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 a way of achieving sustainability and resilience of food systems.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
	Kenya Climate Smart Agriculture (CSA) Strategy (2017-2026)	Recognizes the link between sustainable agriculture, biodiversity, climate change, and food security. The aim is to build resilience and minimize emissions from agricultural farming systems for enhanced food and nutritional security and improved livelihoods.
	The Green Economy Strategy and Implementation Plan (GESIP) (2016 – 2030)	The strategy addresses the drivers of natural resources change and provides support for green and eco-friendly technologies and related research and innovation activities which are geared towards sustainable natural resources management. The adoption of sustainable natural resources management also requires interventions in land management that promote a modern and more responsible regime. Investment in efficiency is a key component that can lead to increased availability of resources to invest in the Green Economy transition, low emissions and less waste generation.
	Agricultural Soil Management Policy, 2023	The policy gives direction on how agricultural soils will be managed for increased crop productivity and production while at the same time conserving the environment. The policy encompasses sustainable agricultural soil and environmental management with regard to soil and water conservation, soil fertility, agroforestry, soil restoration and rehabilitation, technology development, dissemination and utilization of soil management technologies and investments.
	Crops Act No. 16 of 2013	Provides for growth and development of diversified agricultural crops among others.
	Agriculture and Food Authority Act, 2013	The Act provides guidelines for preventing soil erosion, protecting water catchment areas, maintaining soil health and conserving landscape level biodiversity. This involves issuing national guidelines for controlling or eradicating noxious and invasive plants, ensuring responsible land management practices and equitable resource access. Under this Act, the national government may prescribe guidelines requiring, regulating or controlling the afforestation or re-afforestation of land and drainage, including the maintenance or repair of drains, gullies, contour banks and terraces.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
	Seed and Plant Varieties Act, 2012	The Seed and Plant Varieties Act confers power to regulate transactions in seeds, including provision for the testing and certification of seeds; for the establishment of an index of names of plant varieties; to empower the imposition of restriction on the introduction of new varieties; to control the importation of seeds; to authorize measures to prevent injurious cross-pollination; to provide for the grant of proprietary rights to persons breeding or discovering new varieties; to establish a Tribunal to hear appeals and other proceedings; and for connected purposes.
	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; 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 among others.
	Kenya Agriculture Sector Extension Policy (KASEP) 2024	This policy promotes decentralization of extension services by using clientele groups.
	National Food and Nutrition Security Policy, 2011	The Policy provides an overarching framework covering the multiple dimensions of food security and nutrition improvement. The broad objectives of the FNSP are: to achieve adequate nutrition for optimum health of all Kenyans; to increase the quantity and quality of food available, accessible and affordable to all Kenyans at all times; and to protect vulnerable populations using innovative and cost-effective safety nets linked to long-term development.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
Environment	Environmental Management and Co Ordination Act (EMCA) 1999 (revised 2015)	The Environmental Management and Co Ordination Act (EMCA) 1999 (revised 2015) is the framework for environmental management and conservation in Kenya. Among other things, EMCA provides a legal framework for the establishment of various institutions that are pertinent to environmental governance in Kenya. The Act also acknowledges that every Kenyan has the right of a clean and safe environment and they have a duty to safeguard it. It is explicit on the conservation of environment, natural resources, biodiversity and water resources in Kenya in Sections 42, 43, 44 and 50.
	National 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 among others.
	Climate Change Act, 2016	Climate Change Act (No. 11 of 2016) acknowledges the importance of sustainable agriculture and encourages climate-smart practices that align with agroecological principles.
	National Land Use Policy (NLUP) 2017	The principles and values of the National Land Use Policy relevant to agroecological transformation include efficient and sustainable land use management, ecological sustainability, food security, technology adoption in land use management, equity and transparent decision-making, and effective public participation.
	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.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
	National Climate Change Response Strategy (NCCRS) and Action Plan (NCCAP) III 2023-2027	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).
	Kenya National Agroforestry Strategy 2021-2030	The goal of this Strategy is to restore productive capacity and build resilience in the agricultural resource base while contributing to climate change adaptation and mitigation through enhanced agroforestry practices. The Strategy seeks: i) to promote agroforestry for soil and water management in combination with practices such as soil restoration structures, no-till farming, cover crops, nutrient management, manuring and sludge application, improved grazing, and efficient irrigation; ii) promote the application of indigenous agroforestry knowledge and practices, innovation and technologies which correspond to the diversity of indigenous peoples and their different contexts among others.
Gender & Social Inclusion	Protection of Traditional Knowledge & Cultural Expressions Act, 2016	Provides for the framework for the protection and promotion of traditional knowledge and cultural expressions.
County Legislation	Bungoma County Agriculture Soil Management Policy, 2023	The main objective of this policy is to promote agriculture development through sustainable soil management practices. The Policy focuses on various priority areas including; Integrated soil fertility management systems; Protection of the soil and biodiversity conservation; afforestation and reforestation; enhancing climate change mitigation and adaptation measures and enhancing knowledge and skills on sustainable land management.

SECTOR	LEGAL FRAMEWORK	PROVISIONS THAT AFFECT AGROECOLOGY
	Bungoma County Climate Change Policy, 2020; and the Bungoma County Climate Change Action Plan (2023-2027)	The policy's objectives are to appropriately address County climate change challenges for sustainable development; to promote conservation of natural resources for posterity; and integrate climate change into all County development projects and programmes among others. The Action Plan was developed to provide a roadmap that builds the community's resilience against the impacts of climate change.
	Bungoma County Food Safety Policy, 2023	This Policy aims to promote food safety through risk-based control, enhanced awareness and stakeholder participation.
	Bungoma County Agriculture Sector Policy, 2023	The policy aim is to achieve innovative, sustainable and commercially oriented crops, livestock and fisheries resources development and utilization. The policy addresses the agriculture sector in the broad areas of; food and nutrition security; degraded agricultural soils; low production and productivity to enhance food and nutrition security in the County; and promote diversification in production and utilization of food commodities among others.
	Bungoma CIDP 2023-2027	The Bungoma CIDP prioritizes various sectors that affect agroecology including; protection and Conservation of the environment and natural resources; promoting climate change mitigation and adaptation; development and management of water and sanitation infrastructure; promoting sustainable waste management practices; enhancing access to clean energy among others.

Chapter 2: Situation Analysis

2.0 Introduction

This chapter analyzes agroecology in Bungoma County, exploring the current practices, its challenges, opportunities, and key influences on agriculture. It covers thematic areas like production and productivity of sustainably farmed produce and products, climate change effects on agri-food systems, knowledge, skills and research in agroecology, market systems and linkages for sustainably farmed produce and products, gender and social inclusion and financing in agroecology. The chapter also includes POCC, SWOT, and PESTEL analyses to assess agroecology's potential in the county. These findings set the stage for the strategic solutions proposed later, offering a practical, evidence-based path to transforming Bungoma's food systems through agroecology.

2.1 Production and Productivity of Sustainably Farmed Produce and Products

Agricultural production is the total amount of crops, fish or livestock produced on a farm, while productivity measures how efficiently this output is generated. It reflects the ratio of outputs such as crop yields, fish, and livestock products to inputs like labour, water, fertilizers, pasture, fodder, fingerlings, fish feed, and machinery.

In Bungoma County, farmers face low levels of production and productivity of sustainably farmed produce and products due to declining soil and animal health, unsustainable land use practices, reliance on rain fed agriculture, limited use of bio inputs, underdeveloped local seed systems and increased incidences of pests and diseases which threatens food and nutrition security.

2.1.1 Soil Health

Soil health is the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Declining soil health is the loss of soil's physical, chemical, and biological capacity to function as a living ecosystem. This reduces its ability to support plants, animals, and water filtration. It is caused by overgrazing, deforestation and intensive farming, leading to soil erosion, nutrient depletion thus low crop yields.

A soil sampling study conducted by KALRO in 2013 under the National Accelerated Agricultural Input Program (NAAIP) in Bungoma County revealed concerning findings regarding the soil status. The analysis indicated that the soil in the county is predominantly acidic, with a pH level falling below 5.5. This acidity is largely attributed to practices such as monocropping and overreliance on chemical fertilizers.

Additionally, other assessments done by FIPS-Africa and OCP highlighted signs of nutrient depletion across most farmlands, with critical nutrients like nitrogen, phosphorus, and potassium present in low levels. Furthermore, the organic matter content in the soils has significantly diminished, raising concerns about the long-term sustainability of agricultural practices in the county.

The investment by the County government in promoting soil health interventions for the agricultural sector has been inadequate. Likewise, public and private stakeholders often fall short in prioritizing resource allocation towards soil health enhancement efforts. Additionally, soil protection measures, especially physical ones, are not widely implemented because they are labour intensive. Bungoma has three mobile soil labs that provide subsidized dry chemistry soil testing for farmers. However, limited infrastructure maintenance and licence renewal restricts access and effective soil health management.

The national government is piloting alternative inputs subsidies that incorporate bio-inputs alongside the inorganic inputs that will inform the national government on policies surrounding the subsidy program. The pilot program which is still in its initial stages is undertaken in 3 counties; Nakuru, Kakamega and Bungoma particularly in Tongaren and Bumula sub counties. The main aim of the pilot is to promote organic and bio-based inputs to improve soil health and sustainability.

Development partners and in particular GIZ and its implementing partners (WHH, CREADIS, Kimaeti CBO), through the Soil Protection and Rehabilitation of Degraded Soils in Western Kenya (Pro-Soil) project and Fastenopfer- Switzerland through SOET CBO in Mt Elgon, are actively engaged in supporting soil conservation initiatives in various sub counties within the County. Other Partners such as FIPS Africa, OCP, and KALRO support soil sampling and testing in the county. However, these programs remain insufficient to effectively address the soil health challenges faced throughout the entire county.

2.1.2 Animal Health

Animal health refers to the overall physical well-being of animals, especially livestock, including their freedom from diseases, proper nutrition, good management, and access to veterinary care. Livestock production in Bungoma County is a key livelihood activity for many households, but is constrained by recurring animal health challenges. Common livestock diseases include tick-borne infections, foot-and-mouth disease, mastitis, helminth infections and Newcastle disease in poultry. These diseases contribute to high mortality rates, reduced productivity, and increased production costs.

Access to quality veterinary services remains a challenge, particularly in rural areas, where farmers often travel long distances to seek treatment or rely on informal service providers. This results in delayed disease response and poor animal health outcomes. In addition, there is inadequate trained animal health personnel at the community level, leading to gaps in early diagnosis, prevention, and advisory services.

The current system is also heavily dependent on conventional veterinary medicine, with limited integration of preventive and ecological approaches. Overuse and misuse of antibiotics and acaricides have raised concerns about drug resistance and environmental impacts. At the same time, farmers have limited awareness of agroecological practices such as rotational grazing, diversified feeding systems, and ethnoveterinary medicine, which could reduce disease risks and improve resilience.

The county government and development partners have made notable efforts to promote agroecology in livestock systems. The County Government has strengthened veterinary services through enhanced disease surveillance, vaccination programs, and the provision of subsidized artificial insemination (AI) services to improve animal health and productivity. However, the current focus of AI services largely promotes exotic breeds, often overlooking indigenous breeds that possess superior adaptive traits, including resilience to climate change, disease resistance, and the ability to perform under low-input production systems.

2.1.3 Land Use Practices.

Land use refers to how land is utilized for activities such as agriculture, settlement, industry, mining, and recreation. These uses have varying impacts on the environment and human health. Bungoma County faces major land use challenges that threaten environmental and agricultural sustainability. These include urbanization through conversion of arable land for commercial use, poor waste disposal, land sub division due to rapid population growth leading to environmental degradation, biodiversity loss, and reduced agroecological productivity.

A key issue is forest clearing on the slopes of Mt. Elgon for settlement, farming, and charcoal production. Encroachment on riparian areas further worsens degradation. Practices such as over-cultivation, overgrazing and monocropping leads to reduced soil fertility. Unplanned urban growth and land fragmentation also contribute to soil degradation. In addition, activities like quarrying, sand harvesting, brick-making, and charcoal burning degrade soil and hinder effective agroecological practices.

The County Government has established robust land-use frameworks through the Bungoma County Spatial Plan (2018–2028), the Bungoma Local Physical and Land Use Development Plan (2019–2029) and the Bungoma Municipality Integrated Development Plan (2020-2024). However, challenges still exist in their implementation due to limited public awareness and inadequate enforcement mechanisms that have resulted in a significant disparity between policy formulation and practical implementation.

2.1.4 Agriculture Inputs.

In Kenya, farm inputs such as chemical pesticides and fertilizers for crops, and antibiotics for livestock are widely used. While they are valued for quickly controlling pests and diseases and boosting yields, growing evidence highlights their environmental and health risks. Excessive and improper use has raised serious concerns. Runoff from treated fields contaminates

water sources, harms aquatic ecosystems, and disrupts biodiversity. Continued use also degrades soil and poses long-term health risks, undermining their short-term benefits. Balancing productivity with environmental sustainability remains a key challenge.

In Bungoma County, high costs and limited availability of inputs reduce farmers' access to quality products. Proximity to porous borders has also allowed the influx of harmful chemicals and counterfeit seeds and fertilizers.

At the national level, an inorganic fertilizer subsidy program operates through five National Cereals and Produce Board (NCPB) stores in Webuye, Bungoma Town, Kapsokwony, Myanga, and Tamlega. The County implements the Free Input Support Program and Community Empowerment Fund projects where farmers are supported with fertilizer, maize seed, cattle, goats, sheep, and chicks. There also exists a subsidy program for provision of livestock semen and fingerlings, though these initiatives do not focus on promotion of agroecological practices.

Agro-dealers play a key role in supplying inputs and advisory services, but they are mostly located in urban and market centers, limiting access for rural farmers. They predominantly stock inorganic inputs, while awareness and accessibility of commercial bio inputs remain low, contributing to minimal adoption.

Indigenous Technical Knowledge (ITK) on bio inputs use is underutilized. Some farmers apply agroecological materials such as ash, brick dust, Mexican marigold, lemongrass, and neem to manage pests in crops, livestock, and households. However, these practices lack formal registration, standardization, and scientific validation, limiting their wider adoption.

There have been efforts by partners such as GIZ, Biovision Africa Trust, FIPS-Africa and MESPT to promote sustainable farming inputs and products such as Mucuna flour, Black Soldier Fly (BSF), bokashi biopesticides, soil method for control of Fall army worms in maize cultivation amongst others but these technologies have only been confined to partner-based project areas. The BOOST project has further contributed to these efforts by promoting access to and uptake of bio-inputs including bio-fertilizers and bio-pesticides through their integration of E- voucher input subsidy programme alongside capacity building of farmers and ago-dealers on their benefits and appropriate use.

2.1.5 Seed System

Seed is the foundation of all agricultural production, underpinning food, feed, and fibre systems. It includes both grains used for sowing and other vegetative plant materials such as cuttings, suckers, and spores. Sustainable crop and livestock production depend on reliable access to high quality seed and planting materials, whether sourced from formal systems or farmer-managed practices.

In Bungoma County, the formal seed system has contributed to increased yields through improved varieties. However, it does not adequately meet the diverse needs of smallholder farmers. Certified seeds for key crops such as groundnuts, green grams, and Bambara nuts

are often scarce or inaccessible. In addition, there is limited availability of clean planting materials for vegetatively propagated crops like cassava, sweet potatoes, and arrowroots, which constrains productivity and resilience. As a result, many farmers rely on recycled or low-quality planting materials.

The informal seed system plays a role in bridging this gap by providing locally adapted, diverse, and resilient varieties through farmer-to-farmer exchange. These systems are well aligned with agroecological principles and are better suited to local climatic and ecological conditions. However, they remain under-supported and are increasingly marginalized by the dominance of commercial seed markets, which promote hybrid varieties and reduce on-farm seed diversity. This trend risks eroding genetic resources and limiting farmers' access to affordable and adaptable seeds.

Community seed banks offer a strategic opportunity to strengthen farmer-managed seed systems. They support the conservation of indigenous varieties, enhance access to diverse planting materials, and contribute to local food security. Despite their potential, their impact in Bungoma remains limited due to low awareness, weak farmer participation, and inadequate operational capacity.

Current initiatives include the establishment of three community seed banks in Bukembe East, Mechimeru (East Sang'alo), and Bulondo (West Sang'alo) wards of Kanduyi sub-county, supported by GIZ through Seed Savers Network Kenya. Additionally, the Voice of Bungoma (CSO) Network, through BIBA Kenya, has set up a seed bank in Sitikho ward. Tupande Kenya has also established seed banks in Bumula for ALVs. However, these initiatives are still in early stages and are not yet fully operational to sufficiently meet the growing demand for indigenous seeds.

2.1.6. Rain-fed Agricultural Systems

Farmers in the County have historically depended on rainfall for the cultivation of essential food crops and the establishment of pastures for livestock. Rain-fed agriculture remains the cornerstone of food security and livelihoods in Western Kenya, with over 85% of agricultural land relying directly on rainfall. However, this system is increasingly vulnerable to climate change, characterized by erratic rainfall patterns, prolonged dry spells, and high rates of soil degradation.

Despite the availability of water resources such as rivers, streams, and shallow groundwater, their utilization for irrigation remains limited. Only a small number of farmers currently practice irrigation. In some areas, particularly in Cheptais and Chesikaki Wards, farmers successfully grow crops such as onions, cabbage, and tomatoes under irrigation, demonstrating the strong potential of improved water management in enhancing agricultural productivity. However, most staple crops, including maize, sorghum, millet, and cassava, are still largely rain-fed and depend on unpredictable rainfall patterns, exposing farmers to frequent production risks and food insecurity.

The adoption of modern irrigation technologies such as drip systems and solar-powered pumps remains low due to high installation costs, limited awareness, and inadequate technical support from extension service providers. At the same time, the use of low-cost, locally adapted irrigation approaches such as homemade drip systems using recycled containers, bucket irrigation, watering cans, and gravity-fed systems remains underdeveloped and insufficiently promoted, despite their potential to support smallholder farmers with limited resources.

Water storage and harvesting systems are also inadequate, with many farmers lacking access to appropriate technologies such as water pans, storage tanks, and roof catchment systems. This further constrains the ability to utilize available water resources effectively for agricultural production throughout the year.

2.1.7 Pests and Diseases

Pests and diseases present significant challenges to the agricultural sector in Bungoma County. The rising populations of crop and livestock pests have resulted in an increased reliance on various commercial chemical solutions, including agrochemicals for crops and veterinary products for livestock. This shift has raised concerns about soil health, public health, environmental impact and food safety, highlighting the need for effective alternatives. Currently, there are limited viable options on the market that provide effective pest management without the drawbacks associated with chemical treatments.

Development partners, including the International Centre of Insect Physiology and Ecology (ICIPE), are actively promoting IPM initiatives within the county. These programs aim to educate farmers on the benefits of IPM, such as increased crop resilience, reduced chemical input costs, and minimized negative environmental impacts. Additionally, the Agroecology Service Providers (ASPs) supported through the BOOST Action have undergone extensive capacity building to enhance their ability to deliver Integrated Pest Management (IPM) services to farmers. However, current efforts have proven inadequate regarding these sustainable practices.

Small-scale farmers are experimenting with homemade solutions, such as worm juice and biopesticides made from natural ingredients, as alternatives to conventional pesticides. These methods underscore a growing interest in ecologically sound pest management practices. There exist a significant gap in research concerning the effectiveness, application methods, and standardization of these homemade biopesticides, necessitating further scientific inquiry to validate their efficacy and establish best practices for their use in pest management.

2.2 Climate Change Effects on Agri-Food Systems

The United Nations Framework Convention on Climate Change (UNFCCC) refers to Climate Change as a variation of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere observed over comparable time periods.

Globally, average temperatures have increased by more than 1°C since the industrial revolution. The warming is a result of greenhouse gas emissions which blanket the earth, trap the sun's heat and stop it from leaking back into space and causing global warming. As global temperatures rise, widespread shifts in weather systems occur, making events like droughts, floods, landslides and hurricanes more intense and unpredictable.

Climate change poses significant challenges to conventional agri-food systems by adversely affecting crop yields, livestock productivity, aquaculture and overall food security globally. The major causes include; burning of fossil fuels to produce energy for machines and farm equipment using transportation, cutting down forests and clearing of land/burning to release stored carbon, limits nature's ability to keep CO^2 out of the atmosphere, use of fertilizers, digestion by cows and dumpsites of wasted foods emit a lot of methane.

Major effects include; hotter temperatures, unpredictable weather patterns and severe storms, increased drought, not enough food, poverty and displacement, loss of species, more health risks and vegetation fire outbreaks. Rainfall patterns are altered, where excessive rainfall can cause soil erosion and nutrient loss, while prolonged droughts lead to reduced soil moisture. Both conditions compromise soil health and hinder optimal crop growth. Warmer temperatures and altered rainfall patterns also contribute to a higher incidence of pests and diseases, which further diminish crop yields and reduce the quality of produce.

In livestock production, rising temperatures and changing weather patterns reduce animal productivity and increase mortality rates. Heat stress negatively affects livestock health, leading to decreased milk production, lower fertility rates, and reduced weight gain. Additionally, climate change can impact the availability and quality of livestock feed, further compromising animal productivity and well-being. The aquaculture sector faces significant climate-induced vulnerabilities, primarily driven by hydrological stress and accelerated sedimentation of the production pond systems. This increasing climatic variability threatens the integrity of production units through diminished water quality, prolonged dry spells, and the loss of wetland connectivity, which collectively undermine the sustainability of the fish farming operations.

As agricultural output declines due to these climate-related disruptions, food prices tend to rise, making it increasingly difficult for low-income and vulnerable populations to access nutritious and sufficient food. Moreover, extreme weather events such as floods, storms, and heatwaves not only damage standing crops but also disrupt transportation and market supply chains. These agricultural challenges can worsen existing social and economic inequalities, potentially leading to conflict and forced migration. This instability can reduce food availability and drive up costs, further straining food systems already under pressure. As these challenges intensify, they underscore the urgent need for climate-resilient access worldwide.

Bungoma County is endowed with abundant flora and fauna due to the presence of various forests such as Mt. Elgon and forests on hills such as Chetambe, Kabuchai and Sang`alo.

Climate change associated risks coupled with human activities, have affected biodiversity negatively. The impacts include loss of biodiversity, threats to animal and plant species, change in vegetation composition and structure, decrease in forest coverage, rapid deterioration of land cover, and depletion of water quality and quantity through the destruction of catchments and underground aquifers.

The erratic and extreme weather conditions (precipitation and temperatures) have increased the intensity and frequency of climate changes threats/hazards. The occurrence of climate change hazards differs in the county according to the agro-ecological zones with the upper part of Mt. Elgon sub-county experiencing landslides, floods, pests and diseases, drought, strong winds and hailstones. The lower part consists of eight sub-counties namely: Sirisia, Tongaren, Kimilili, Webuye east, Webuye west, Kabuchai, Kanduyi and Bumula. Most prevalent climate change threats/hazards in these sub-counties include; drought, floods, strong winds, pests and diseases with minimal frequency of landslides and mudslides. (Figure 2 below)

The population in Bungoma County has been on the increase leading to deforestation due to the need for land for settlement and cultivation. The water tower which is Mt. Elgon Forest Reserve, has not been spared with certain areas such as Kaberwa and Kaboywo being adversely affected. Encroachment in forested areas has further been worsened by weak enforcement of relevant laws and regulations. Additionally, inadequate public awareness and actors' capacity for forest conservation has slowed down conservation efforts. The County Government in collaboration with other stakeholders such as KFS, Kimaeti CBO, Western Tree Planters Association (WETPA), 3KM SACCO, KAREU MPYA CBO among others have tree planting programmes being implemented though on a small scale within the County. The two Agroecology Service Provider (ASP) hubs in Bungoma County have received support from the BOOST Project to establish and operationalize professional tree nurseries aimed at promoting agroforestry adoption and strengthening local livelihoods. The nurseries have been designed to produce high-quality tree seedlings that will support landscape restoration, sustainable agricultural production, climate resilience, and environmental conservation efforts across the county.

A more pressing concern in the County is the widespread reliance on firewood and charcoal for cooking. Most households depend on these biomass fuels, leading to deforestation as trees are cut faster than they can regenerate. This reduces the environment's ability to absorb carbon dioxide, thereby increasing the concentration of greenhouse gases in the atmosphere. Stakeholders such as Society of Crop Agribusiness Advisors of Kenya (SOCAA)/ Kenya Renewable Energy Association (KEREA) promote the development and adoption of productive use of renewable energy technologies in the Chwele/Kabuchai, Bumula, Webuye west, sitikho and Bokoli wards and building capacity of the community on adoption of productive use of renewable energy.

Agriculture and livestock sectors contribute greatly to Greenhouse Gas (GHG) emissions in the County. These emissions are essentially Methane (CH_4) and Nitrous Oxide (N_2O), Carbon Dioxide (CO_2) that emanate from unsustainable land use practices, poor agricultural

practices, use of fertilizers containing nitrogen and animal waste. Farmers within the County rear livestock making the sub-sector the highest contributor of methane within the agricultural sector due to poor management of animal waste. Apart from agriculture other sources of GHG emissions include fossil fuel burning, poor waste management within the urban areas and industrial processes such as Pan Chemicals, Nzoia Sugar Company and Naitiri Sugar Company.

There are ongoing efforts by both the County Government and development partners to enhance carbon sequestration across the County. Organizations such as Vi Agroforestry, operating in Bumula, Sirisia, and Mt. Elgon sub-counties support farmers by linking them to carbon credit schemes where revenues from the sale of carbon credits are shared among project developers, implementing partners, and participating farmers, often after deducting costs related to project management, monitoring, and certification. Similarly, Cereal Growers Association (CGA) and Farm to Market Alliance promote soil carbon initiatives in which farmers earn points based on their level of agroecological practices, which are later converted into benefits such as direct payments, inputs, or services. At the community level, Kimaeti Farmers CBO promotes agroforestry practices to increase carbon sinks and encourages manure composting to reduce methane emissions. The FAO **"Transforming Livelihoods through Climate-Resilient, Low-Carbon, Sustainable Agricultural Value Chains in the Lake Region Economic Bloc (TUNZA)** is a climate-resilience and low-carbon agriculture initiative being implemented across counties within the Lake Region Economic Bloc (LREB) in western Kenya. The project promotes carbon sequestration embedded within its low-carbon agriculture and landscape restoration agenda such as agroforestry and restoration of degraded agricultural landscapes.

These efforts however, remain insufficient due to low adoption rates, limited farmer capacity, and lack of clarity in the benefit-sharing mechanisms. Many farmers lack adequate knowledge, technical support, and financial resources to fully implement and sustain these practices and often have limited understanding of how carbon revenues are calculated and distributed. This uncertainty reduces trust and participation, ultimately constraining the overall impact of these initiatives in contributing to climate change mitigation and improved livelihoods.

The County has initiated a crop insurance service aimed at cushioning farmers against losses resulting from reduced yields, drought, flooding, hailstorms and other adverse weather conditions. However, the service lacks a clear legal and regulatory framework, which hinders its effective implementation and scaling. In addition, the insurance scheme is currently limited in scope as it mainly focuses on the maize value chain, leaving out other important agricultural enterprises in the county. Although the premiums are generally affordable, uptake remains low due to limited awareness among farmers on the existence of the insurance scheme and where and how to access or pay for the premiums. Furthermore, the effectiveness of the crop insurance scheme is constrained by limited involvement of financial institutions and private service providers in awareness creation, product delivery,

and distribution channels. Many farmers are therefore not adequately informed about the benefits of the insurance or the enrollment process.

Climate change projections are scenario based, hence, contain some degree of uncertainties. Reliable daily, weekly, monthly and seasonal climate information, as well as warnings and alerts on extreme weather events support decision making at many levels, within households and communities as well as at ward, sub-county, and county levels.

In Bungoma County, there is still reliance on traditional weather forecasting methods. Local elders, farmers, and rainmakers interpret a wide range of natural indicators to anticipate seasonal changes. The behavior of termites, frogs, and weaver birds is closely monitored, as their movements often signal the onset of rains. The flowering of indigenous trees ***Eryithrina abyssinica*** locally known as the flame tree is read as a cue for land preparation, while premature leaf drying in banana plants may suggest an approaching dry spell. Mist rising over Mt. Elgon at dawn is taken as a sign of high humidity and potential rainfall, especially by tea farmers in Chepyuk and Elgon Wards. In areas like Tongaren and Webuye, the swarming of safari ants is interpreted as a reliable signal for soil moisture, guiding the timing of maize and bean cultivation. Despite its proven utility, traditional forecasting faces erosion due to generational shifts, limited documentation, and undervaluation in formal planning.

The County government currently relies on Kenya Meteorological Services for dissemination of information. Notably, through the Agriculture Sector Development Support Programme (ASDSP) the County purchased automated weather forecasting equipment and stationed them in Tongaren, Bumula, Sirisia and Kanduyi sub counties. These stations and infrastructure are however, inadequate to capture, store, analyze and distribute weather information at the right time to different users for immediate response in cases of emergency. There also exist private organizations such as Nzoia sugar and Coffee Research Institute who operate Automated weather stations; however, they have no obligation to disseminate the information to the public. Additionally, the county has limited capacity in terms of personnel to handle climate and disaster related information.

The current waste management situation in the county presents a significant gap, particularly in the handling of organic waste generated from markets and institutions such as schools, hospitals, and public facilities. A large proportion of this organic waste is not properly segregated at source and is often mixed with other solid waste streams, making it difficult to manage effectively. As a result, most organic waste ends up in open dumpsites, where it decomposes under uncontrolled conditions, contributing to environmental pollution, foul odors, and greenhouse gas emissions such as methane.

The County Government has made efforts to improve solid waste management through routine waste collection services, designation of dumping sites, and periodic clean-up campaigns in urban and peri-urban areas. In some markets and institutions, there are ongoing sensitization efforts on waste segregation and environmental hygiene. However, these interventions remain limited in addressing organic waste specifically, as systems for segregation at source, composting, and recycling are still weak or not fully institutionalized.

Through the Financing Locally Led Climate Actions (FLLoCA) programme, the County has been supporting community-driven initiatives to strengthen climate change adaptation and mitigation at the local level. In the context of climate change mitigation, FLLoCA has facilitated investments in activities such as sustainable land management, tree planting, and agroforestry, thereby improving natural resource management. These interventions are designed to enhance carbon sequestration, reduce land degradation, and promote more sustainable use of natural resources by communities.

In addition, the programme has supported awareness-raising and capacity-building for community groups and local institutions on climate-smart practices, including waste management, soil conservation, and sustainable agriculture. By promoting locally led planning and implementation, FLLoCA enhances community ownership of climate actions, strengthens resilience, and contributes to reduced greenhouse gas emissions. However, there is still a need to scale up these efforts and integrate them more strongly into sectoral programmes to achieve broader and more sustained climate change mitigation impacts.

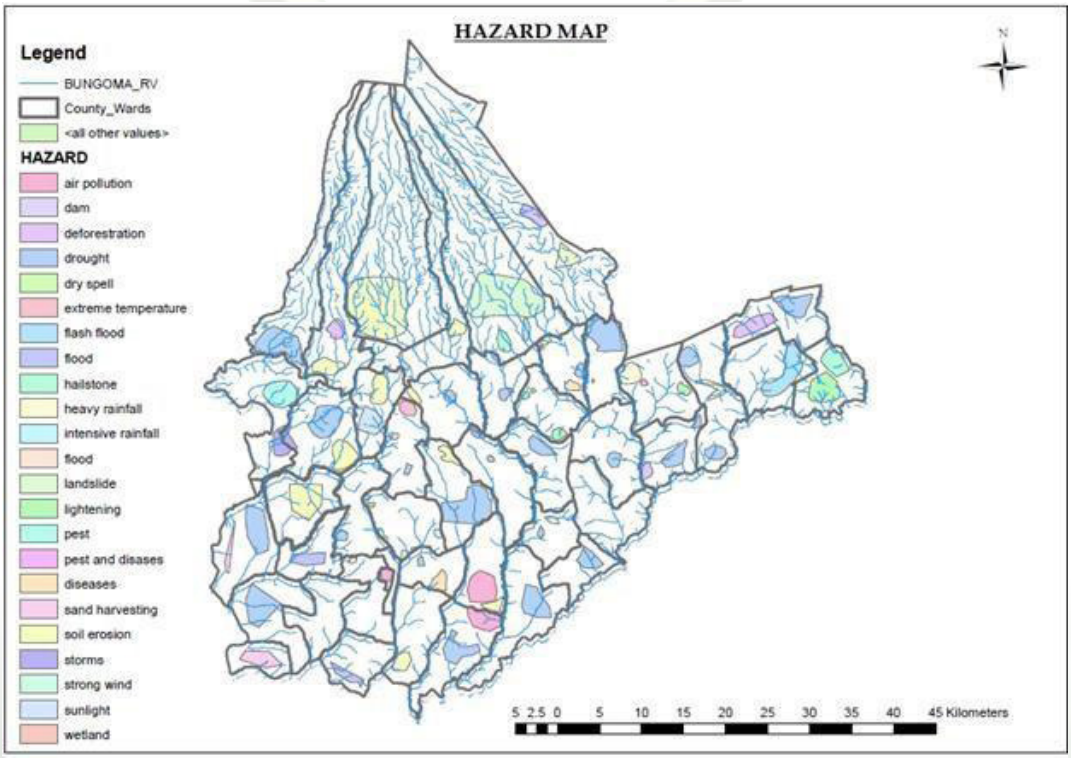


Figure 2: Bungoma County Climate Hazard Map

2.3 Extension, Knowledge, Skills and Research in Agroecology

In Bungoma County, the advancement of agroecology faces several challenges, including limited farmer awareness of sustainable practices, inadequate agricultural extension

services, and weak data management systems that hinder informed decision-making. Research efforts are often externally driven and disconnected from local realities, limiting the relevance and adoption of findings. These challenges collectively slow the transition toward resilient, sustainable agriculture in the county.

2.3.1 Agricultural Extension Services

Agricultural extension services play an important role in ensuring information flows across the chain, thereby reducing uncertainty and enhancing the performance of the entire agricultural supply chain. Studies by the International Food Policy Research Institute have shown that increased extension visits lead to greater knowledge of GAPs, higher production, improved food security and on-farm incomes, resulting in reduced poverty and child malnutrition. The Country's Vision 2030, the Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019–2029 and the National Agricultural Sector Extension Policy, (NASEP) 2012, revised to Kenya Agriculture Extension Policy (KASEP 2024) recognize the need to strengthen extension systems. Despite the importance of extension, facilitation has declined at the National and county levels limiting access to extension services.

The role of extension in agroecology is continuously evolving thus requiring new skill sets which the extension service personnel do not possess due to lack of continuous professional development programmes. Additionally, extension service personnel have an inadequate range of specialized technical skills and scope of knowledge on agroecological extension delivery. The average age of public extension workers in the County is 50 years old, with a significant proportion of staff is now nearing retirement age (***Extension Staff Rapid Assessment Report, 2021***). In a bid to curb this, the County government embarked on recruitment of additional extension personnel however, staffing levels remain insufficient to meet operational demands since the ratio of extension staff to farmers stands at Crop 1: 1850, Livestock 1: 1762 (CIDP 2023-2027). This shortfall presents a significant implementation risk, as newly recruited staff require time to build the requisite technical capacity and field experience to effectively deliver extension services.

Through embracing public-private partnerships, other extension service providers have complemented the lean government extension service in supporting farmers in implementing agroecology practices. However, the extension services provided through the said partnerships are confined to programme areas. Additionally, different documented approaches such as farmer field schools, lead farmers, community facilitators, agri-preneurship and community resource persons have been used by different partners in various value chains to bridge extension staff to farmer ratio. In the County, there are over 300 farmer field schools under FAO and NAVCDP, over 1000 community resource persons and lead farmers under GIZ, 250 community facilitators under VI Agroforestry, 191 farmer service centres under CGA, 12 farmer service centres under GIZ, 50 farmer hubs under SAF, 123 agroecology service providers under BOOST and 220 agripreneurship under NAVCDP. These approaches have been institutionalized in the policy documents however, they lack a framework for supporting human resource capacity development and reward.

E-extension services in agriculture are digital platforms that provide farmers with information and advice on topics like new farming methods, yield improvement strategies, breeding techniques, weather forecasts, market prices, pests and disease management and best practices. It can be provided by a variety of entities including the public sector, private companies, agro dealers, managers of out grower schemes, private and intermediary groups. The services can be provided through trade platforms, notification platforms, SMS, mobile applications, interactive voice response systems, social media platforms such as Facebook and X-space, chat applications like WhatsApp, blogs, radio and TV programmes.

Kenya Agricultural and Livestock Research Organization (KALRO) has developed several mobile applications to offer varied E-extensions services including Agro-weather system Applications, Control of Maize lethal necrosis (MLN), Fall Armyworms (FAW), Forages for Dairy cattle, Avocado seedling and Varieties, cashew nuts, coconut, coffee, Garlic production and Mango Propagation and a knowledge hub and Know Your Farmer(KYF) (http://asalkhub.kalro.org). Digi Farm was founded by Safaricom to help farmers connect with buyers, credit providers, and agronomic materials suppliers. Plantwise Factsheet Library assists farmers access up to date content and advice for plant doctors and extension workers.

2.3.2 Knowledge and Skills in Agroecology

Over the years, there has been a decline in intake of agricultural related courses and subsequent careers due to the negative attitude towards uptake of agricultural career choices and mentorship programmes. Bungoma County hosts three (3) institutions of higher learning: Kibabii University, Bungoma National Polytechnic and Kisiwa National Polytechnic; four (4) Technical Training Institutes (TTIs) under the national government and eighty-nine (89) Vocational Training Centres (VTCs) under the County Government. Out of the 89 VTCs, 22 offer agriculture courses examinable by KNEC, but they face low enrolment. A majority of these institutions are not certified to offer competence-based courses and have inadequate personnel trained on pedagogy courses.

In recent years there have been efforts by development partners to introduce skill development courses in agricultural practices in the existing learning institutions. GIZ supported 8 VTCs; Mufule, Kabula, Sawa, Kiptirok, Machwele, Chwele, Cheptais and Mukuyuni in development of curriculum for short courses in soil management and further supported them to develop demonstration sites, acquire learning/training guides and conservation agriculture tools, however, the support is inadequate to cover critical skills in agroecology. Mabanga ATC, in conjunction with GIZ has trained artisans on fabrication of conservation agriculture tools. However, the number of artisans trained is still low, and the knowledge gained has not been adequately disseminated to farmers due to weak extension support and limited outreach. In addition, most trained artisans lack adequate tools and equipment for effective fabrication, which constrains their ability to produce and supply the necessary conservation agriculture tools.

2.3.3 Data Management and Information Sharing

Accurate, timely communication and information sharing in the agricultural sector are important for the development, exploitation, and management of resources. The sector's potential to reduce poverty and contribute to economic growth has remained largely untapped due to a lack of accurate data needed for planning, financing, and implementing programmes. Many farmers and stakeholders lack essential knowledge about agroecological issues due to poorly coordinated systems for collecting and disseminating vital information at the county level. The county lacks an agroecological information resource center and a digital platform where information on the agroecological sector can be accessed. There is also limited documentation of successful/best agroecological practices and lessons learned to support uptake and upscale.

The County Government has an integrated information management system and a website that is expected to be a depository of all information from departments. The information system faces a number of challenges including access being limited to ICT officers and irregular update of information by the departments. The County Government in collaboration with SAF Africa developed a dashboard to assist in managing the information, however, most departments and partners are yet to be sensitized and integrated on to the dashboard.

Several challenges exist in data management that limit integration and coordination between MDAs, County Governments, and private service providers, leading to fragmented content delivery and duplication of efforts. In addition, weak data systems and a lack of localized, real-time information reduce the relevance and accuracy of messages delivered to farmers. Low digital literacy among some farmers, inconsistent mobile network coverage in rural areas, and limited awareness of the service further hinder uptake. There also lacks a fully harmonized institutional framework to guide content development, quality control, and financing, which affects sustainability and scale-up of the service.

2.3.4 Research in Agroecology

Agricultural Research and advisory services can be defined broadly as a set of services and institutions that help agricultural value chain actors obtain information, skills, and technologies to improve productivity, food and nutrition security, and well-being.

There exists one University in the County that offers research that is tailored towards training. The county is served by KALRO stations in Kitale, Alupe, and Kakamega on a need basis, and their locations hinder their ability to adequately serve the county, further weakening the linkage between extension and research. Moreover, there is a shortfall in support for on-farm research and documentation of agroecological best practices. This is compounded by weak connections between research initiatives and extension services regarding agroecological technologies, limiting the promotion and adoption of effective agroecological practices.

2.4 Market Systems and Linkages for Sustainable Farmed Produce and Products

A market system is a network of channels, technologies, and people (buyers, sellers, consumers, and other actors) that work together to drive growth and ensure a return on investment for a given product or service. The participants in a market system include producers, buyers, and consumers, who drive economic activity. Agricultural marketing faces several challenges in Kenya, including a market information gap, inadequate infrastructure, intermediaries and middlemen, price fluctuations, inadequate digital infrastructure and poor quality of product.

The National Government has established marketing infrastructure through the development of fresh produce markets, warehouses, and aggregation centers to improve the handling and marketing of agricultural produce. Key investments include the construction of markets under the Smallholder Horticulture Marketing Programme (ShoMAP), such as Buyofu, Mayanja, Sirisia, and Kimilili horticultural markets, as well as value addition facilities like the Wamono tomato processing plant and a banana ripening facility at Kabula. Additionally, GIZ has supported the construction of the Namwacha Sweet Potato Processing Plant. The County Government has constructed several markets including Chepkube, Mateka, and Kimilili, and is currently expanding market infrastructure across all sub-counties in collaboration with the National Government. Ongoing projects include Bungoma Main Market, Chwele, Naitiri, Bukembe, Webuye, Malakisi, Misikhu, Bokoli, Mateka, and Cheptais market. However, despite these significant investments, existing market facilities lack designated sections or zones for sustainably farmed produce.

The County Government is promoting value addition through supporting farmers' cooperative societies such as Kikai Cooperative Society, Kaptama Dairy Cooperative Society, Kitinda Dairy, Mt. Elgon coffee mill, Musese coffee mill through provision of milk coolers, coffee machines, and feed millers. Efforts by partners and other stakeholders, such as the World Bank to upscale the value additions as well as reduce the cost of production has been low due to inadequate raw materials for value addition from sustainably farmed produce.

There exist several earth markets in the Country such as Kagio, Nakuru, Embu and Eldoret, for sustainably farmed produce and products. However, the County does not have established earth markets or registered/certified farmers or vendors for sustainably farmed produce and products. Most sustainable farming products in Kenya are sold in local and urban markets, where farmers sell directly to consumers at farm markets, making traceability challenging.

The farmer service centre model was introduced in Kenya in 2019 by the Farm to Market Alliance (FtMA) to address the challenges faced by smallholder farmers. This initiative aims to bridge the gap between the first mile (access to inputs and services) and the last mile (marketing of commodities) for rural farmers. FSCs are trained farmers who link other farmers to input companies and enhance farmer access to farm inputs like seeds, agrochemicals and mechanization services like ripping. They stock, sell and earn commissions from the sale of

these farm inputs and produce. However, these centres are not tailored to meet emerging needs that promote sustainable production and consumption through access to bio inputs and agroecology services.

In Bungoma County, different organizations have different names for farmer service provision approaches. GIZ has 12 FSCs, CGA has 127 FSCs and Sustainable Agricultural Foundation (SAF) has 50 Farmer hubs across the County. The Food and Agriculture Organisation (FAO) through BOOST project has facilitated the establishment of two Agroecology service hubs in Mt Elgon and Kimilili sub-counties with 123 agroecology service providers. The ASPs promote the adoption and scaling of agroecological practices. They are trained and equipped to provide specialized services including agroecology advisory and extension, integrated pest management (IPM), bio-input production and distribution, agroforestry promotion, soil health management, establishment of demonstration plots, farmer training, climate-smart agriculture advisory services, linkages to markets and value chain actors. The ASP hubs also operate as local enterprises, generating income through the provision of agroecology-related products and services while simultaneously supporting sustainable food systems transformation.

The ASP model is particularly important because it creates a cadre of community-based professionals who provide continuous technical support to farmers, facilitating the transition from conventional input-intensive farming systems to resilient, environmentally sustainable, and economically viable agroecological systems. Through their close proximity to farming communities, ASPs enhance last-mile delivery of agroecological knowledge, technologies, and innovations, thereby increasing adoption rates and strengthening local capacity for sustainable agricultural development.

Despite their demonstrated potential, both the Agroecology Service Provider hubs and other farmer service delivery structures face challenges related to professionalization, financial sustainability, and institutionalization within county agricultural frameworks. Many continue to rely on project-based support and lack formal recognition within county extension systems. Addressing these gaps through policy support, accreditation, integration into county extension structures, and sustainable financing mechanisms would significantly enhance their effectiveness and contribution to the county's agroecological transition.

There exist few marketing groups in the County such as Mulembe CBO in Bukembe West, Salama Kitinda Farmer group in West Sang'alo Ward, Mountain Berean Farmer Group in Kapsokwony, Khalaba Fish Farmers Group in Kanduyi, focusing on sustainable farming products such as African Leafy Vegetables, honey and fish. These farmer groups are, however, limited in their scope of accessing agroecological market and market systems, credit facilities and other agribusiness opportunities in agroecology. This has diminished their bargaining powers with the existing markets dealing in sustainable farming products.

Bungoma County has partnered with development partners to link farmers to agroecological farming systems and off takers of the products. The county has partnered with several partners like FIPS-Africa, KTL, MACE- Foods and ONJA UONE who have contracted farmers

in various value chains such as macadamia, avocado and horticultural crops. In addition, there are 100 farmers contracted by Arianda Ltd for production of African leafy vegetables sustainably. However, farmers under contract farming face unethical trading practices, whereas the buyers on the other hand complain about low quality and un-sustained quantities of produce and products. Through the E.U funded BOOST project, farmer aggregation and marketing clusters have been formed where sustainable farming produce and products' particularly maize and beans are off taken by bulk buyers.

Market linkages have been promoted through various fora such as B2B meetings, exhibitions, experiential sharing and other stakeholder engagements within the sector. Micro enterprise Support Program Trust (MESPT) has facilitated Business to Business fora between fish farmers and market offtakes, with GIZ also facilitating the same for organic products producers. These fora are, however, few and expensive to scale and create sufficient linkages for sustainable farming products in the county.

The Kenya Organic Agriculture Standard (KOAS), developed by the Kenya Organic Agriculture Network (KOAN), provides the national regulatory framework governing the certification of biological and organic agricultural inputs central to agroecological production, including organic fertilizers, biopesticides, bio fungicides, bio-stimulants, organic seeds, and certified organic livestock inputs. Compliance with KOAS enables producers, processors, and input suppliers to access premium organic and eco-labelled domestic and export markets, thereby providing the economic basis for agroecological transition at farm and value chain levels. Several internationally accredited certification bodies are operational in Kenya and available to certify against KOAS and allied international standards, including Africert Ltd, Ecocert, Control Union, Bioagricert, and International Partnership Services East Africa Ltd (IPSEA). Notwithstanding the availability of these institutions, the direct cost of third-party certification remains prohibitive for the majority of smallholder farmers in Bungoma County, constituting a structural market access barrier that disproportionately affects small-scale producers.

Additionally, general food safety and traceability frameworks, such as those managed by the Kenya Plant Health Inspectorate Service (KEPHIS) and the Kenya Bureau of Standards (KEBS), provide guidelines on food safety, plant health, and product traceability, particularly for export crops. While not specifically designed for agroecology, these frameworks could potentially be adapted to accommodate sustainably farmed products.

In Bungoma County the market for sustainable farming produce and products is still developing and has barely attained the level of packaging and branding which are regulated by standards and certification bodies applicable to such produce and products. Low consumer awareness of the quality of such produce and products, high cost of certification and competition from middlemen are challenges facing branding of sustainable farming produce and products.

Kenya Agriculture Market Information System **(**KAMIS) is a digital platform that disseminates market data and prices to farmers and traders. KAMIS enumerators use tablets to collect

data in all 47 counties. In Bungoma county, there are no systems to monitor production, post-harvest handling as well as marketing and sale of agro ecologically produced products and therefore no information on the consumption of the same. Lack of information platforms and fragmented market for the produce and the health benefits of sustainably farmed produce have led to low prices for these products.

2.5 Gender and Social Inclusion in Agroecology

Gender refers to socially constructed differences between women, men, girls, and boys. This includes norms, behaviors and roles associated with being a woman, man, girl or boy, as well as relationships with each other. As a social construct, gender varies across societies and can change over time. Social inclusion is a process of improving the terms on which individuals and groups take part in society. It aims to ensure equal opportunities and dignity for those who are disadvantaged on the basis of their identity. It involves ensuring that all people feel valued and able to participate in civic, social, economic, and political activities, as well as in decision-making processes.

In Bungoma County, both men and women are active players in agroecology. However, their roles are mostly defined by culture and traditions. The main roles played by women include planting, watering of crops, weeding, preparing and applying compost manure on the farm, packaging of farm produce, among others. Additionally, women are heavily involved in household chores, and they determine diets that are consumed in the household; therefore, knowledge about the health benefits of agroecology would create significant demand for these products at the household level. Despite the crucial role women play in agroecology, most time-saving technologies have not been specifically adapted to women's needs.

Men's perceived role in agroecology includes providing security, fencing the land, digging the land or terraces, bush clearing, growing cash crops, especially coffee, allocating land for agroecology, taking care of livestock/herds, spraying crops, pruning, and selling farm produce. Men view agroecology as an enterprise that takes too long to realize financial benefits yet they are interested in getting quick financial gain. Further, they have a perception that agroecology is only for small scale and not for large-scale farming, which men prefer and that efforts done often target women. Additionally, men view women and youth as laborers in the agroecological set up and therefore find alternative sources of livelihoods. There is also a general fear of the unknown in adopting new agroecological technologies.

Women play an essential role in the food system as they are often primary caretakers of biodiversity and possess deep knowledge of traditional farming practices; however, despite their crucial contribution, they are not yet sufficiently empowered to thrive in it. Women suffer discrimination in land access, ownership, and control, due to patriarchal cultural practices and property rights systems. Denying women access to productive resources and opportunities further deepens gender and income inequalities, which limits their ability to pursue opportunities in agroecology. In the County, women have limited access to and ownership of land and rarely participate in land-use decisions, which hinders their

potential in agroecology. Similarly, women have limited access to formal credit to finance agroecological activities, leaving them to opt for informal channels, such as chamas, which do not adequately finance their enterprises.

Collaboration between the County and development partners such as GIZ, PELUM Kenya, PAMOJA, Transformation Alliance, and Shibuye Community Health Workers under the WE4R (Women Empowerment for Resilience) project have strengthened climate resilience and sustainable livelihoods in the county. These initiatives support women and youth through capacity building, the promotion of agroecological practices and climate-smart agriculture, and improved access to sustainable livelihood opportunities.

Despite these efforts, access to financing remains constrained for many women and youth due to limited awareness of available financial products, complex application processes, and a lack of collateral. In addition, coordination among implementing partners is sometimes weak, leading to duplication of activities and fragmented service delivery. Limited technical capacity among beneficiaries and inadequate market linkages also reduce the scalability and sustainability of supported enterprises.

The transition towards a more sustainable food system cannot ignore the crucial role of the youth. The principles and elements of agroecology highlight the key role of young farmers in building food systems based on equity and fairness. Young people bring added value in farmer-to-farmer exchange, due to their knowledge in innovation, contributing therefore to co-creation of knowledge. Moreover, agroecology encourages youth participation in food systems governance processes.

In Bungoma County, Agroecology is an emerging area where youth participation can be enhanced. Most youths have a negative perception towards agriculture as they view farming as quite intensive; does not bring quick returns, and is often left for the uneducated in society. They prefer tasks such as riding ***boda bodas*** to get quick income and also want to involve themselves in social media and internet related activities. In addition, due to cultural practices and norms, youth have limited access and control to land, bio-inputs and rarely take part in household decision making. The EU funded BOOST project has demonstrated how youth led ASP hubs can integrated young people into agroecological agribusiness through engaging them in extension and service provision.

Indigenous people play a significant role in agroecology, yet for a very long time, they were not recognized and were significantly marginalized. In addition, indigenous people living around conservation areas suffer greater injustice in access to land, despite being guardians of local ecosystems. In Bungoma County for instance, the Ogiek community has continued to demand and claim restitution of their traditional land rights on the basis that they were dispossessed through litigation. Agroecology recognizes the crucial role of indigenous peoples in building sustainable food systems, emphasizing their traditional knowledge and practices. By integrating these perspectives, agroecology aims to create more inclusive, resilient, and equitable food systems that benefit both people and the planet.

The participation of PWDs in agroecology is crucial for fostering principles such as inclusivity, diversity, fairness and equity. Agroecology offers PWDs opportunities to contribute meaningfully to food systems while addressing their unique challenges. In Bungoma, PWDs face a number of barriers, such as limited access to resources, attitudinal (e.g., prejudice, discrimination, and stigma), environmental (physical and communication barriers), and institutional (e.g., policies, laws, and rules), but also possess valuable skills and experiences that can contribute to agroecological practices.

2.6 Financing in Agroecology

Transformation of agricultural production into a viable commercial undertaking requires access to financial products and services at nodes along the value chain. The agriculture sector has, over the last four years, received an average of 7% per year of the country's budget, which is below the Continental Agreements (Maputo Declarations 2003 and Malabo Declarations 2014) which requires African nations to increase their budgetary allocation for agriculture to a minimum of 10% of the overall national budget. Despite contributing up to 43% of the county's GCP, the County has been allocating 6-8% per year of the County's budget to Agriculture, with priority being given to conventional farming inputs, such as inorganic fertilizer. Agroecology is budgeted under soil and water conservation activities, which do not adequately cover the agroecology section due to lack of information on the importance of agroecology to the economy.

The financing and investment in agroecological sectors have potential for reducing poverty and contributing to economic growth through creation of employment and agribusiness and have remained largely untapped due to inadequate establishment of viable business enterprises in agroecology. Several partners exist within the county, such as FAO, GIZ, SAF, BIBA, Solidaridad, Bio vision Africa Trust, among others that promote agroecological practices working towards increased productivity, agribusiness and development of support for infrastructure; however, priority investment by financial organizations and institutions, such as banks in the agroecology sector as viable business enterprises is still inadequate.

There are numerous programs being implemented by both the National and County governments targeting the vulnerable, youth and women to complement the conventional credit facilities. Notably, few agricultural MSMEs have programs or products specifically tailored to the agroecological sector. These financial institutions, however, largely offer credit at high interest rates. Furthermore, most agripreneurs act individually and therefore lack capacity for resource mobilization. The majority rely on internal finances, such as personal contributions and family and friends, which are often inadequate to invest and grow.

The exposure of agroecology to risks such as price variations, unfavorable weather conditions, pests, diseases, political uncertainties, such as the constant shifts in government policies have made investment in the sector low. Agricultural insurance has largely targeted high value chains with very limited consideration for agroecology.

2.7 Enabling Environment For Scaling Up Agroecology

Agroecology calls for responsible and effective governance to support the transition to sustainable food and agricultural systems. Transparent, accountable, and inclusive governance mechanisms are necessary to create an enabling environment that supports producers in transforming their systems in line with agroecological concepts and practices. They include policies, institutional arrangements, stakeholder involvement, and advisory services. An enabling environment may provide the laws, regulations, and incentives that ensure the reorientation and transformation towards agroecology proceed effectively and sustainably.

In Kenya, enhancing policies to create a stronger enabling environment for agroecology requires addressing systematic gaps and leveraging existing structures. Harnessing the potential of agroecology to transform agriculture and food systems requires an enabling policy and legal framework. The National government has developed policies addressing agroecology, including the National Agroecology Strategy for Food Systems Transformation (NASFST), 2024–2033. This strategy, however, does not address county specific agroecological issues.

The County has developed various legislation, including the Bungoma County Agricultural Soil Management Policy 2023, Bungoma County Agriculture Sector Policy 2023, Bungoma County Climate Change Policy, 2020 and Bungoma County Climate Change Action Plan 2023-2027. While the existing policy instruments have elucidated policy issues related to agroecology, such as soil health, nutrition, climate change, healthy diets, and food and nutrition security, they do not identify agroecology as a distinct public policy question that requires unique, fit-for-purpose policy interventions. Furthermore, the majority of farmers and stakeholders have inadequate knowledge of existing policies. Additionally, policy formulation is a participatory process in the County, where stakeholders are engaged at the public participation level to provide their input. However, low farmer participation in policy formulation, implementation, and review hinders compliance with the developed regulations and policies.

Weak institutional coordination among the various stakeholders in the agroecology sector is commonly recognized as a hindrance to the adoption of agroecological practices. Such weaknesses may include; institutions operating in silos; lack of horizontal integration across sectors among others; which often lead to fragmented decision-making and inconsistent implementation presenting barriers to agroecological transition. Additionally, there exist weak institutional mechanisms for consultation and cooperation between the national and county governments in ensuring agroecological transformation of food systems.

The Joint Agriculture Consultation and Cooperation Mechanism (JASCCM) was established in November, 2016, under the IRA, 2012, to bring harmony and ensure that the National and County governments deliver as one. The committee provides regular policy and strategic direction for the sector, decides on Sector Joint Actions and approves Joint Sector Plans, Programmes, Projects, work plans and budgets. The structures established under JASCCM,

however, do not adequately address monitoring, evaluation, and reporting on Projects and Programmes implemented by government agencies and development partners at the County level.

Bungoma County is a member of the Lake Region Economic Bloc (LREB) comprising fourteen (14) counties. The bloc aims to leverage economies of scale through optimum but sustainable utilization of shared resources to accelerate the socio-economic transformation of the people. Through these collaborations 10 counties are implementing the TUNZA programme which focuses on transforming agricultural value chains through the promotion of low-carbon and climate-smart farming practices. Despite the aforementioned, there still exist operational, coordination and legal gaps in this bloc for its smooth running.

Bungoma County has established the County Agriculture Sector Steering Committee (CASSCOM), which is multisectoral in nature and whose main role is to strengthen collaborations and linkages with public and private institutions in the management and delivery of agricultural programs/projects, and services. CASSCOM operations have, however, been limited due to lack of legal framework which is currently awaiting its approval at the County Assembly.

Bio Vision-Africa founded the Bungoma Farmers Agroecology platform, which coordinates agroecological activities within the County. The platform, however, is inadequately funded hence cannot effectively perform its functions, is limited in scope because a number of key players in the agroecology sector have not onboarded and the platform has not been embedded in the County Agriculture Sector Steering Committee (CASSCOM). Furthermore, there are no policy incentives to promote innovation, research and investment in resource efficiency and recycling to strengthen the developing biological input markets.

2.8 Potentialities, Opportunities, Challenges & Constraints (POCC) Analysis

Table 2: Potentialities, Opportunities, Challenges & Constraints

POTENTIALITIES	OPPORTUNITIES
• Availability of land for agroecological use • Existence of partners willing to promote agroecological activities • Availability of programs targeting agroecological practices such as production, postharvest handling, marketing, value addition and circular economy • Availability of both public and private extension workers in the agriculture sector • Availability of crops and livestock for diversification	• Existence of national policies and regulations guiding the agroecology sector • Existence of partners investing and promoting agro-ecology • Availability of different agroecological zones • Existence of demand for organic products

CHALLENGES

- Low enforcement and implementation of existing Policies and Regulations
- Inadequate information on agroecology
- Low collaboration and coordination between departments as well as between government and partners
- Inadequate knowledge and skills in agroecology
- Encroachment into sensitive ecosystem such as wetlands, riverbanks, forests, dams among others
- Limited access and ownership of land by women and youth
- Weak coordination mechanisms of agroecology initiatives

CONSTRAINTS

- Unpredictable climatic conditions
- Lack of long-term financing that is compatible with longer term investment in agroecology
- Overreliance on agrochemicals, hybrid seeds and GMOs

2.9 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

Table 3: Strengths, Weaknesses, Opportunities & Threats

STRENGTHS

- Existence of skilled extension service providers
- Availability of diverse agroecological innovations and technologies in the agriculture sector
- Availability of diverse indigenous seeds
- The existence of favorable climatic conditions that support agroecological activities
- Political goodwill

WEAKNESSES

- Excessive use of inorganic fertilizers and chemicals
- Inadequate county policies and legal framework
- Non-compliance to existing legal framework
- Inadequate capital for investment
- Limited market incentives and innovation uptake to support the agroecological transition
- Low utilization of ICT
- Inadequate knowledge and skills
- Low adoption rate of agroecological practices
- Limited access to Indigenous seeds that are adapted to the local environment
- Deforestation leading to loss of biodiversity

OPPORTUNITIES

- Existence of a wide range of partners for funding agro-ecological activities
- Availability of institutions that can support uptake of agroecological practices
- Existence of programs that support investment and financing of agroecology
- Existence of common interest groups that focus on agroecological practices

THREATS

- Rising adverse impacts of climate change on the agri-food systems
- Increased population leading to pressure on land, water, and food production, which results in deforestation, soil degradation, and overexploitation of natural resources
- Price fluctuations of agroecological produce and products
- Poverty

2.10 Political, Economic, Social, Technological, Environmental and Legal Analysis

2.10.1 Political Analysis

The County Government is continuously seeking sustainable agri-food systems innovations to support policy and investment, with a view to creating jobs, supporting livelihoods, and increasing access to healthy diets in the county. Bungoma County's development priorities, as outlined in its County Integrated Development Plan (CIDP) 2023-2027 commits to enhance development and management of crops, livestock and fisheries in the county for enhanced household and county food and nutrition security. There also exists a number of development partners and stakeholders engaging in agroecological initiatives within some wards in the County.

Capacity-building efforts, such as training programs for trainers of trainers (ToTs), farmer field school facilitators, lead farmers, agripreneurs, agroecology service providers and farmer service centers, have been instrumental in promoting agroecological practices. The County Assembly is equally involved in the passing of the requisite agroecology laws and appropriation of funds to support agroecology activities. However, challenges still need to be addressed, including inadequate coordination between the County and national government in implementing agroecological practices and the absence of a dedicated funding framework for CASSCOM, which oversees agricultural projects and practices in the County.

2.10.2 Economic Analysis

Agroecological practices often rely on natural resources and on-farm inputs rather than expensive synthetic fertilizers and pesticides. Implementing agroecology practices boosts the economy of every country since there will be massive reduction in the application

of inputs like pesticides and chemicals. This will also necessitate a rise in investment and development of other industries producing agroecological inputs.

The use of agroecological inputs leads to significant cost savings for farmers. For example, practices like cover cropping and crop rotation enhance soil fertility, reducing the need for chemical fertilizers. By implementing agroecological practices, we can achieve more while utilizing fewer external resources. Agroecological systems improve the use of natural resources, especially those in abundance, and are free, like atmospheric carbon, solar radiation, and nitrogen.

Producers can reduce costs, use fewer external resources, and reduce the negative environmental impacts of external resources by enhancing biological processes and recycling nutrients, biomass, and water. Studies have shown that agroecological systems can lead to higher productivity compared to conventional monoculture systems. By promoting biodiversity and ecological balance, agroecology enhances resilience against pests and diseases, ultimately leading to more stable yields, reduced cost of production and increased returns

Unlike the conventional commercial inputs which are affected by the frequent price fluctuations of the inputs Producers of agroecological can increase autonomy and resilience to natural and economic shocks by reducing dependency on commercial conventional inputs

Transitioning to agroecological practices has been associated with increased income for farmers. A review of various case studies indicated that agroecological practices positively impact financial capital metrics, with many farmers reporting higher revenues and improved efficiency. This also enhances market access for smallholder farmers by promoting organic and sustainably produced goods, which often fetch higher prices in the market. This shift not only benefits farmers economically but also contributes to sustainable food systems. Agroecological principles focus not on stand-alone measures but creating integrated systems that diversify production systems and secure financial livelihood

Agroecology also presents employment opportunities to youth since most ecological farms are often more labor-intensive than conventional monocultures, thus creating more jobs in rural areas. It also provides an opportunity for investments in development and adoption of various technologies and systems increasing their agroecological effect and creating opportunities for higher financial returns. Further job opportunities are created, as youth are trained to develop and maintain the systems and provide assistance for farmers.

In a market-oriented approach, a decentralized business model for compost production was identified. Organic waste from the industrial processing of various agricultural products creates jobs while the waste problem of processing companies is solved sustainably. This is a big innovation in the sector and a win-win situation for the processing companies, youth establishing a viable business through compost production and farmers who can buy a locally produced quality production.

While conventional agriculture may provide short-term gains, agroecology focuses on long-term sustainability, which can lead to more stable economic outcomes over time. By improving soil health and ecosystem services, agroecological practices help ensure that farming remains viable for future generations.

2.10.3 Social Analysis

The community's agricultural practices in Bungoma reveal a rich foundation of indigenous knowledge deeply aligned with agroecological principles, including traditional methods of seed propagation, storage, cropping systems, and biodiversity conservation. These techniques, though vital for ecological resilience and food sovereignty, are often undervalued or overlooked by modern farmers especially those engaged in large-scale conventional agriculture who remain unaware of their benefits.

Informal seed sharing and local trade, essential for sustaining production and genetic diversity, are similarly marginalized in formal agricultural planning. Agroecological approaches not only restore and preserve this knowledge but also offer significant health benefits by promoting diversified cropping systems that improve household nutrition and support the growing demand for certified, traceable, and nutrient-rich agri-food products.

Farming remains the primary livelihood in Bungoma, yet cultural resistance and entrenched norms continue to hinder the adoption of sustainable practices. These norms disproportionately affect women, youth, persons with disabilities (PWDs), and indigenous groups, limiting their access to land, ownership rights, and participation in household decision-making. Such social exclusion restricts their ability to engage meaningfully in agroecological systems, despite their critical roles in food production and community well-being.

2.10.4 Technological Analysis

Technology can be incorporated into Bungoma County's agroecological practices through a blend of digital solutions and on-farm innovations that aim to optimize resource use. Some of the key technological applications include precision agriculture, mobile based platforms and E-Extension, remote monitoring, GPS, drones, biotechnology and renewable energy, controlled environment systems (hydroponics, green houses, vertical gardens) and water management innovations amongst others.

The growing potential of digital platforms, such as apps and SMS, presents an opportunity to disseminate agroecological knowledge effectively, fostering innovation in sustainable agriculture. Mobile phone applications and USSD platforms (like icow and Digi Farm) provide farmers with timely, localized information on weather forecasts, market prices, and best agroecological practices including disease and pest management techniques. Collaboration between government agencies, private companies (like Safaricom and Microsoft), NGOs and research institutions drive the development and scaling of appropriate context specific solutions. Digital platforms can also be used in weather forecasting, and connecting small

holder farmers directly to markets, market information and linkages and financial services. Online forums and social media facilitate peer to peer learning and interaction with experts, enabling farmers to exchange knowledge and build a community around sustainable practice.

In Bungoma County various technological innovations offer clear benefits towards improved food supply chain, however several barriers remain including limited understanding of digital tools, high energy demands, insufficient financial resources, weak policy support, lack of infrastructure, low digital learning by farmers, etc to facilitate the transition. Such barriers highlight the need for more robust capacity-building programs to support the adoption of Agroecological innovations.

2.10.5 Environmental Analysis

Agroecology focuses on sustainable farming practices that work with nature to conserve and protect soil health, water quality, biodiversity and combat the effects of climate change. Key environmental considerations in agroecology are conservation agriculture, agroforestry, integrated pest management, climate-smart agriculture and waste management. Bungoma County's diverse ecosystems provide a strong foundation for agroecological practices, such as crop diversification and Integrated Pest Management (IPM), which support biodiversity. By promoting techniques like composting and cover cropping, agroecology contributes to restoring soil fertility, complemented by the availability of a soil lab and ongoing soil regeneration programs such as Pro Soil, REALMS, and BOOST. Additionally, initiatives like agroforestry and reforestation, enforcement of environmental laws, and proper waste management are helping to address issues of environmental and land degradation. These efforts aim at promoting sustainable environmental practices that will restore and protect the environment.

2.10.6 Legal and Policy Environment

The National government has developed policies addressing agroecology including the National Agroecology for Food System Transformation Strategy, 2024-2033. This strategy, however, does not address county specific agroecological issues. The policy and legal environment in the county has made some strides with the development of various policies, such as the Bungoma County Agriculture Sector Policy, 2023 and the Bungoma County Agricultural Soil Management Policy, 2023 however, there is limited mainstreaming of agroecology into the existing county policies. The absence of specific agroecology legislation therefore hinders comprehensive implementation at the county level.

Chapter 3: Strategic Issues, Objectives and Interventions

3.0 Introduction

This chapter identifies and addresses the critical strategic issues impacting the agroecological transformation of Bungoma County's food systems. It outlines specific objectives and interventions to tackle challenges such as low production and productivity, climate change effects on agri-food systems, gender and social exclusion, weak enabling environments, inadequate financing, limited knowledge, skills and research and weak market systems.

The proposed interventions aim to promote sustainable agricultural practices, enhance resilience to climate change, and ensure inclusivity and equity by aligning with agroecological principles. These strategies provide a roadmap for achieving long-term food security, sustainable livelihoods, and a robust agroecological system while fostering stakeholder collaboration to realize the County's vision for a sustainable future.

3.1 Vision, Mission and Goal

3.1.1 Vision:

A resilient, inclusive, and sustainable agroecological food system in Bungoma County that ensures food and nutrition security, economic prosperity, and environmental sustainability for current and future generations.

3.1.2 Mission:

To transform Bungoma County's agriculture through innovative agroecological practices, community empowerment, and sustainable resource management, fostering equitable access to nutritious food and building resilience to climate change.

3.1.3 Goal:

To enhance agricultural productivity, ensure food and nutrition security, and promote climate-resilient, inclusive, and market-oriented agroecological systems in Bungoma County.

3.2 Strategic Model

This Strategy has identified seven key strategic issues affecting agroecology in Bungoma through an in-depth situation analysis, with corresponding objectives designed to address the challenges that hinder farmers' effective participation in agroecology. For each strategic issue, objectives and interventions have been developed.

The seven strategic issues are;

1. Low production and productivity of sustainably farmed produce and products
2. Adverse climate change effects on agri-food systems
3. Inadequate extension, knowledge, skills and research in agroecology
4. Weak market systems and linkages for sustainably farmed produce and products
5. Gender and social exclusion in agroecology
6. Low public and private sector financing in agro ecology
7. Weak enabling environment for scaling agroecology

3.3 Strategic Issues, Objectives and Interventions

3.3.1 Strategic Issue 1: Low production and productivity of sustainably farmed produce and products.

Objective:

To enhance production and productivity of sustainably farmed produce and products.

Strategic interventions:

To enhance production and productivity of sustainably farmed produce and products the county government and stakeholders shall;

1. Promote sustainable soil, water and animal health management practices
2. Promote the establishment of community seed systems
3. Promote the establishment of community livestock and fish breeders
4. Promote Integrated production, pest management, and animal health management
5. Promote water management programs

3.3.2 Strategic Issue 2: Adverse Climate Change Effects on Agri-Food Systems

Objective:

To build and enhance the resilience of the community against the effects of climate change on Agri-food systems.

Strategic Interventions:

To build and enhance the resilience of the community against the effects of climate change on Agri-food systems, the county government and stakeholders shall;

1. Promote afforestation, reforestation and protection of water catchment areas
2. Promote adoption of productive use of renewable energy and non-wood products
3. Promote programmes on reduction of greenhouse gas emissions
4. Promote sustainable waste management
5. Promote crop varieties, livestock and fish breeds and tree species that are adapted to varied weather conditions
6. Support climate early warning system.

3.3.3 Strategic Issue 3: Inadequate Extension, Knowledge, Skills and Research in Agroecology.

Objective:

To enhance extension, knowledge, skills and research in agroecology

Strategic interventions:

To enhance extension, knowledge, skills and research in agroecology, the county government and stakeholders shall;

1. Promote and institutionalize alternative extension approaches
2. Promote skill development in agroecology
3. Enhance public private partnership in extension and research in agroecology
4. Support information management systems in agroecology
5. Support capacity building programmes of stakeholders in agroecology

3.3.4 Strategic Issue 4: Weak Market Systems and Linkages for Sustainably Farmed Produce and Products.

Objective:

To promote market systems and market linkages for sustainably farmed produce and products.

Strategic Interventions:

To promote market systems and market linkages for sustainably farmed produce and products, the county government and stakeholders shall;

1. Strengthen market infrastructure for sustainably farmed produce and products
2. Strengthen market linkages for sustainably farmed produce and products
3. Strengthen farmer producer and marketing organizations in agroecology
4. Scale and professionalize agroecology service providers hubs

3.3.5 Strategic Issue 5: Gender and Social Exclusion in Agroecology

Objective:

To promote gender equity and social inclusion in agroecology.

Strategic Interventions:

To promote gender equity and social inclusion in agroecology, the county government and stakeholders shall;

1. Promote participatory approaches for youth, women, vulnerable groups and indigenous groups in designing and implementation of agroecological programs
2. Promote gender affirmative policies and regulations in agroecology
3. Promote development of transformative agroecological technologies and research suitable for men, youth, women, vulnerable groups and indigenous groups

3.3.6 Strategic Issue 6: Low public and private sector financing in agroecology.

Objectives:

To enhance agricultural financing and investment in agroecology.

Strategic Interventions:

To enhance agricultural financing and investment in agroecology, the county government and stakeholders shall;

1. Promote infrastructure development to facilitate investment that focuses on the agroecology sector
2. Promote capacity-building programs of sector actors on financial management and access
3. Promote the development of financial programs and products focused on investment in agroecology

3.3.7 Strategic Issue 7: Weak Enabling Environment for scaling Agroecology

Objective:

To strengthen policy, legal and institutional framework in agroecology.

Strategic Interventions:

To strengthen policy, legal and institutional framework in agroecology, the county government and stakeholders shall;

1. Develop, review, and enforce a legal and regulatory framework for agroecology
2. Support inclusive stakeholder participation in policy development, review and implementation process
3. Strengthen County agroecological institutional and coordination framework
4. Promote incentives towards agroecological practices

Chapter 4: Implementation Framework

4.0 Introduction

This chapter focuses on the beneficiary targeting, economic value and resource mobilization strategies geared towards the successful implementation of this Strategy. The chapter further examines the relevant institutions and their roles in coordinating and implementing this Strategy. Finally, the Strategy establishes a multisectoral County Coordinating Unit which shall be responsible for the implementation process.

4.1 Implementation Plan

4.1.1 Beneficiary Targeting

The County Government, in collaboration with development partners and stakeholders, will implement a comprehensive agroecology transformation programme targeting farmers, youth, women, vulnerable groups, and value chain actors across all 45 wards and 9 sub-counties. The programme is designed to directly and indirectly benefit over 280,000 farming households through improved access to productive assets, extension services, markets, climate information, and agro-processing infrastructure.

At the production level, each ward will host a community seed bank supporting approximately 3,000 farmers per ward, translating to about 135,000 farmers countywide. In addition, agroecology service hubs comprising 45 new hubs and 2 existing ones per ward cluster will serve over 135,000 farmers by providing advisory services, input access, and technical support. Each hub will be equipped with soil sampling kits and will support approximately 200 farmers per ward annually, benefiting about 9,000 farmers directly through soil testing and advisory services, while mobile soil laboratories will strengthen evidence-based soil management through approximately 2,700 samples annually during peak seasons.

To strengthen learning and innovation, agroecology demonstration farms will be established in each ward, serving as practical training centres for farmers. These will be complemented by institutionalized community resource persons, lead farmers, and farmer field school facilitators in every village unit, collectively extending advisory services to approximately 280,000 farming households across the County.

Market access and value addition will be strengthened through the establishment of 45 ward-based grocery stores serving over 500 customers daily each, and aggregation centres and storage facilities targeting at least 100 farmers annually per ward. At the sub-county level, agro-processing plants will support at least 1,000 producer households each, linking farmers to structured and profitable markets.

In addition, indigenous fruit tree nurseries managed by farmer groups of approximately 100 members per ward will directly benefit about 4,500 farmers countywide, while energy centres will train approximately 1,125 community members annually in renewable energy and agroecology-related enterprises. Briquette-making centres at Naitiri and Nzoia Sugar factories will serve approximately 90 institutions and 900 community members by converting agricultural waste into energy products, while nine biogas plants will benefit about 450 farmers through improved energy access and organic fertilizer production.

Climate resilience and advisory systems will be strengthened through the establishment of nine Automatic Weather Stations, one per sub-county, providing localized climate information to approximately 30,000 farmers to guide cropping decisions. Complementing this, innovation hubs will support approximately 54,000 individuals including youth, women, persons with disabilities, and indigenous groups in adopting agroecological technologies, agribusiness innovations, and digital solutions.

Finally, the development of regulatory frameworks for agroecology subsidies, crop insurance, and CASSCOM operations will enhance service delivery and risk protection for approximately 90,000 farmers, ensuring inclusive access to financial and institutional support systems. A detailed beneficiary targeting analysis is highlighted in Annex 4.

4.2 Economic Value

The implementation of the Agroecology Strategy is expected to significantly expand employment opportunities, strengthen rural enterprise development, and improve household incomes across Bungoma County through a wide range of value chain interventions spanning production, infrastructure, processing, services, and digital innovation.

At the primary production support level, the establishment of seed banks is projected to create approximately 450 direct jobs for community members involved in seed collection, storage, management, and distribution. In addition, Farmer Service Centres, agroecology service providers and agroecology service hubs will generate about 270 employment opportunities for technical staff and support personnel, while soil sampling and testing services are expected to engage approximately 90 agripreneurs across the County in delivering decentralized soil health advisory services.

Market infrastructure development will further enhance rural employment. The establishment of 45 ward-based grocery stores is expected to create about 450 jobs for shop attendants, managers, and supply chain workers. Similarly, aggregation centres and storage facilities in each ward are projected to provide at least 100 jobs per ward, engaging managers, loaders, transporters, security personnel, and other logistics workers while strengthening farm-to-market linkages and improving farmer incomes.

At the sub-county level, agro-processing plants are expected to generate approximately 15 direct jobs per facility, while also creating indirect employment for producers supplying raw materials and benefiting from value addition services. In addition, the introduction

of cottage industries and value addition equipment at ward level will enable farmers and producer groups to increase product value, thereby enhancing income generation and stimulating rural enterprise growth.

Strengthening of farmer marketing organizations is expected to further support employment creation and income generation. Each ward will host at least one producer organization, with each organization engaging at least five members in management and commission-based roles linked to sales and aggregation activities. Similarly, farmer organizations strengthened in agroecological investment and financing are expected to provide at least five management positions per group, supporting improved governance, resource mobilization, and commercial performance.

Environmental and climate-related interventions will also contribute significantly to job creation. The establishment of indigenous tree nurseries is expected to directly employ approximately 2,250 community members during establishment phases, with an additional 90 permanent nursery managers engaged in ongoing operations. Biogas plants are projected to create about 180 direct jobs in installation, operation, and maintenance, while Automatic weather stations will generate approximately 90 technical and support jobs within county climate and data management systems.

Digital transformation in extension services will further enhance youth employment, with e-extension systems and innovation hubs expected to engage approximately 225 ICT personnel and trainers in delivering digital advisory services, data management, and farmer support. A detailed economic analysis is highlighted in Annex 4.

4.3 Resource Mobilization

The County Government allocation from the national government was KES. 15,926,407,761 for the FY 2024/2025 annually, out of which KES 605,075,266 was allocated to the Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives. Agroecological activities are implemented by several departments and about 10 different partner organizations within the County. The resources towards the implementation of the strategy will come from county government as well as these organizations. The implementation of this strategy will require KES 1.510770 Billion over the next ten years which will be contributed by these organizations. A resource mobilization strategy for Bungoma County's Agroecology Strategy shall be developed by the County multi-stakeholder platform and shall focus on aligning with key stakeholders, leveraging diverse funding streams, and building capacity to sustain initiatives. The structured approach is highlighted in Annex 6.

4.4 Institutional Framework and Stakeholders

The effective execution of this Strategy relies heavily on collaboration among a diverse range of stakeholders. Key participants include the County Government and its various departments, the National Government and its institutions, development partners, and

non-state actors, including both international and local NGOs. Additionally, the private sector and cooperative societies play crucial roles in this partnership. The actors and players with interest and influence on agroecology within the County are listed in Table 7 below.

4.5 County Multi-stakeholder Platform

The County Government of Bungoma will scale up the existing Bungoma County multi stakeholder agroecology platform by incorporating all the key departments and stakeholders. The platform shall be domiciled in the Department of Agriculture to monitor the progress and implementation of the strategy and resource utilization.

4.6 Agroecology Service Providers Hub

The County Government will institutionalize the Agroecological Service Provider model as a decentralized mechanism for promoting agroecological extension, youth employment, agribusiness development, and sustainable food systems. Agroecology Service Providers (ASPs) will mean an individual, group, enterprise, cooperative, or youth-led business entity trained and accredited to provide agricultural, environmental, mechanization, advisory, aggregation, or market linkage services that promote agroecological food systems. The County Government will develop regulations for accreditation, certification, and annual registration of ASPs to ensure quality assurance, professionalism, and compliance with county agricultural standards.

Chapter 5: Monitoring, Evaluation, Learning, Reporting and Review

5.0 Introduction

Strategy monitoring, evaluation, reporting and review (MERR) are key components in the implementation process. It provides decision makers, development partners, and other stakeholders with better means of learning from past experience, improving service delivery, planning, and the allocation of resources, and demonstrating results as part of accountability to key stakeholders.

5.1 Monitoring, Evaluation, Accountability And Learning (MEAL)

Monitoring, Evaluation Accountability and Learning (MEAL) will be an integral component of the strategy. The process will be participatory, involving all the stakeholders and beneficiaries who shall collect, compile and analyze information on the implementation of various agro ecological interventions. It will adhere to all national laws and regulations related to monitoring and evaluation. Key indicators developed in the implementation matrix will be used to monitor and evaluate impacts. The indicators shall be specific, measurable, achievable, realistic, time bound and encourage citizen participation.

The successful implementation of this Strategy will align with the County Monitoring and Evaluation (M&E) framework, enabling structured, periodic assessment of progress, achievements, and outcomes. By aligning with both national and county-level M&E and reporting systems, the Strategy will be executed in a cost-effective, coordinated, and harmonized manner that ensures accountability and transparency. The County Government will foster compliance with established indicators and reporting protocols, enhancing the quality of data shared with relevant agencies. Oversight and execution of the Strategy will rest with the County Department of Agriculture, which will be responsible for ensuring that all strategic objectives are met through effective planning, resource mobilization, and stakeholder engagement.

5.2 Reporting

The Multi stakeholder platform will develop Agroecology Strategy reports quarterly and annually, detailing the level of implementation of the Strategy in the county and the challenges experienced. The report will outline options on how to subsequently address challenges and emerging issues. To ascertain its effectiveness and efficiency, the county government shall establish a framework of standards aligned with national and international standards. The report will be submitted to CASSCOM for action by partners and stakeholders.

5.3. Operationalization and Review of the Strategy

The Agroecology Strategy shall become operational as soon as it is passed by the County Executive Committee, published, and publicized by the County Government of Bungoma. The Strategy operationalization shall take account of the specific objectives as well as putting due consideration on the guiding principles.

The Strategy shall be implemented in (ten) 10 years, review will be done after (five) 5 years taking into consideration the achievements, emerging issues, sustainable development, and to remain relevant to the dynamics of agroecological practices.

Annexes

Annex 1: Implementation Matrix – Bungoma County Agroecology Strategy 2025–2034

#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
STRATEGIC ISSUE 1: Low Production and Productivity of Sustainably Farmed Produce and Products													
Strategic Objective 1: To enhance production and productivity of sustainably farmed produce and products													
a) Promote Sustainable Soil, Water and Animal Health Management Practices													
i)	Sensitization of 90,000 farmers on soil and water conservation and establishment of structures	Increased awareness and knowledge on sustainable land management practices	No. of farmers sensitized on soil & water conservation techniques; Area of land conserved (Ha.)	Staff DSA: 2,240×4 zones×45 wards×10 yrs; Stationery; 4.5 km terraces (0.1km/ward); 45 farm ponds (1/ward)	Dept. of Agriculture, Partners	2025–2034	County Govt, Partners & Stakeholders	7.730	1.510	1.510	1.510	1.610	1.510
ii)	Promoting on-farm production and use of organic fertilizers (composting, farmyard manure, liquid fertilizers, vermicomposting)	Improved soil health and quality	Number of farmers using organic fertilizers	On-farm training 500 farmers 45×10; Stationery; Staff DSA 2,240×4 zones×45×10; Demo plots (50×100): 1×4,500×45×10	Dept. of Agriculture, Dev Partners	2025–2034	County Govt, Partners & Stakeholders	9.100	2.440	2.440	2.440	2.440	2.440
iii)	Train farmers on Integrated Pest Management (IPM) and ethnoveterinary practices	Improved pest and parasite management and control	Number of farmers trained on IPM and ethnoveterinary practices	On-farm training 150 farmers×45×10; Stationery; Staff DSA 2,240×45 wards×4 zones×10 yrs	Dept. of Agriculture, Dev Partners	2025–2034	County Govt, Dev Partners, Donors	6.030	1.260	1.260	1.260	1.260	1.260

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iv–vi)	Create awareness on soil testing and analysis; Build capacity of Agroecology Hubs on soil sampling and pH testing; Support and promote soil testing	Improved soil health and quality	No. of farmers sensitized; No. of Agroecology Hubs capacity built; No. of kits purchased; No. of soil samples tested	Staff DSA 2,240×2×45; Soil sampling kits 2×15,000×45; Conference 2,000×45; Fare 45×1,000; Mobile lab subscriptions; Subsidized testing 45×2×30 samples×800×10; Staff DSA 4×45×2,240	Dept. of Agriculture, Dev Partners	2025–2034	County Govt, Partners & Stakeholders	20.120	5.360	3.690	3.690	3.690	3.690
b) Promote the Establishment of Community Seed Systems													
i)	Capacity building of farmers on the seed banking process and registration	Enhanced knowledge & skills in seed banking; Increased production of indigenous seeds	Number of farmers trained on seed banking	On-farm training 150 farmers×45×10; Stationery; Staff DSA 2,240×45×5×5	Dept. of Agriculture, Dev Partners	2025–2029	County Govt, Dev Partners, Donors	11.115	2.220	2.220	2.220	2.220	2.220
ii)	Establishing community seed bank facilities	Increased access to indigenous seeds	Number of seed bank facilities constructed	1 seed bank × 9 sub-counties × KES 1.5M	Dept. of Agriculture, Dev Partners	2025–2027	Dept. of Agriculture, Dev Partners, Donors	13.500	13.500	—	—	—	—
iii)	Support establishment of genebanks for underutilized crops (bambara nuts, sorghum, millet, indigenous vegetables)	Increased access to planting materials for underutilized crops	Number of genebanks established	Staff DSA 2,240×45×10 days; Demonstration materials 45×KES 50,000	Dept. of Agriculture, Dev Partners	2025–2027	Dept. of Agriculture, Dev Partners, Donors	3.251	3.251	—	—	—	—

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iv)	Conducting county annual seed fairs	Increased community awareness and adoption of indigenous seeds and food traditions	Number of seed fairs conducted	1 seed fair × KES 2M × 10 years	Dept. of Agriculture, Dev Partners	2025–2034	County Govt, Dev Partners, Donors	20.000	4.000	4.000	4.000	4.000	4.000
c) Promote the Establishment of Community Livestock and Fish Breeders													
i)	Capacity building of community livestock and fish breeders	Increased access to improved livestock breeds and fish species	Number of livestock and fish breeders trained	Training 2 farmers×45×KES 2,000 conference×5 yrs; Stationery; Staff DSA 2,240×45×5×3	Dept. of Livestock & Dev Partners	2025–2034	County Govt, Dev Partners	4.412	1.080	1.080	1.080	0.576	0.576
e) Promote Water Management Programs													
i)	Capacity building of community on irrigation technologies and equipment	Increased number of farmers practising irrigation	Number of farmers trained	Training 150 farmers×45×10; Stationery; Staff DSA 2,240×45×4×10	Dept. of Livestock & Dev Partners	2025–2034	County Govt, Dev Partners	6.030	1.260	1.260	1.260	1.260	1.260
ii)	Support establishment of solar powered irrigation kits	Increased access to solar powered irrigation systems	Number of irrigation kits purchased	Irrigation kits: 2 per ward × 45 wards × KES 50,000	Dept. of Agriculture, Dev Partners	2025–2034	Dept. of Agriculture, Dev Partners, Donors	4.500	0.900	0.900	0.900	0.900	0.900

#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
STRATEGIC ISSUE 2: Climate Change Effects on Agri-Food Systems													
Strategic Objective 2: To build and enhance resilience of communities against effects of climate change on Agri-Food systems													
a) Promote Afforestation, Reforestation and Protection of Water Catchment Areas													
i)	Tree planting on degraded sites, institutions, farms and within the natural ecosystem	Afforestation, landscape restoration and water catchment protection	No. of seedlings planted	Seedlings 100,000 × KES 50 × 10 yrs; Hall hire 45 wards × KES 5,000 × 4 meetings × 10; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, KFS, NEMA, Partners	2025–2034	National Govt, County Govt, Partners	80.410	16.080	16.080	16.080	16.080	16.080
ii)	Establishment of indigenous tree nurseries	Farm forestry promoted	No. of nurseries established	45 nurseries × KES 812,000	County Govt, KFS, Partners	2025–2034	County Govt, Partners	37.000	7.400	7.400	7.400	7.400	7.400
b) Promote Adoption of Productive Use of Renewable Energy and Non-Wood Products													
i)	Construction of solar powered energy centres	Uptake of improved jikos and stoves by the community	No. of energy centres established	9 sub-counties × KES 3M	County Govt, REREC, Partners	2025–2034	County Govt, Partners	27.000	6.000	6.000	6.000	6.000	3.000
ii)	Establishment of briquettes making centres	Transition from wood/charcoal to briquettes as alternative energy source	No. of briquettes centres established	Infrastructure 2 centres × KES 1M; Machines 2 × KES 7.5M; Utilities 2 × KES 1.5M	County Govt, Partners	2025–2034	County Govt, Partners	20.000	1.000	7.500	2.500	7.500	1.500

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iii)	Capacity building of community on productive use of renewable energy	Sensitized community on renewable energy	No. of people capacity built	Hall hire 45 wards × KES 5,000 × 2 meetings × 10 yrs; Staff DSA 45 × 5 staff × 2 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners	15.830	3.170	3.170	3.170	3.170	3.170
c) Promote Programmes on Reduction of Greenhouse Gas Emissions													
i)	Establishment of biogas plants	Reduction of methane gas emission	No. of biogas plants installed	9 sub-counties × KES 2M	County Govt, Partners	2025–2034	County Govt, Partners	18.000	4.000	4.000	4.000	4.000	2.000
ii)	Capacity building on carbon credits and reduction of greenhouse gas emissions	Sensitized community on carbon credits and GHG emissions	No. of people capacity built	Hall hire 45 wards × KES 5,000 × 4 meetings × 10 yrs; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners	30.410	6.080	6.080	6.080	6.080	6.080
d) Promote Sustainable Waste Management													
i)	Capacity building of community on recycling of waste and other management practices	Sensitized community on waste management	No. of people sensitized	Hall hire 45 wards × KES 5,000 × 4 meetings × 10 yrs; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners	30.410	6.080	6.080	6.080	6.080	6.080

#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
e) Promote Climate-Adapted Crop Varieties, Livestock Breeds and Tree Species													
i)	Capacity building on emerging pests and diseases; crop and animal tolerant species	Sensitized community on emerging pests & diseases; tolerant species	No. of people sensitized	Hall hire 45 wards × KES 5,000 × 4 meetings × 10 yrs; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners	30.410	6.080	6.080	6.080	6.080	6.080
f) Support Climate Early Warning Systems													
i)	Establish Automatic Weather Stations (AWS)	Availability of weather information	No. of county automatic weather stations established	9 sub-counties × KES 5M	County Govt, KMD, Partners	2025–2034	County Govt, Partners	45.000	10.000	10.000	10.000	10.000	5.000
ii)	Procurement of weather forecasting infrastructure	Availability of analysed data	No. of computers and GIS software installed	9 sub-counties × 2 computers × KES 250,000	County Govt, KMD, Partners	2030–2034	County Govt, Partners	4.500	—	—	—	2.250	2.250
iii)	Training of staff on AWS operations, remote sensing and GIS	Sensitized staff on AWS, GIS and remote sensing	No. of staff trained on AWS, GIS and remote sensing	Staff DSA 18 staff × KES 11,200 × 5 days; Facilitators DSA 3 pax × KES 15,000 × 5 days; Conference facility 2,500 × 21	County Govt, KMD, Partners	2033–2034	County Govt, Partners	1.725	—	—	—	—	1.725

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iv)	Facilitating fora for participatory scenario planning and early warning dissemination	Developed advisories for early warning	No. of farmers reached with advisories	Hall hire 45 wards × KES 5,000 × 1 meeting × 10 yrs; Staff DSA 45 × 5 pax × 2,240 × 1 meeting × 10; Stationery; Radio 2 stations × KES 50,000 × 4 times × 10 yrs	County Govt, KMD, Partners	2025–2034	County Govt, Partners	12.550	2.510	2.510	2.510	2.510	2.510
STRATEGIC ISSUE 3: Inadequate Extension, Knowledge, Skills and Research in Agroecology													
Strategic Objective 3: To enhance extension, knowledge, skills and research in agroecology													
a) Promote and Institutionalize Alternative Extension Approaches													
i)	Conduct training needs assessment among alternative extension approaches	Extension gaps addressed	No. of TNA tools developed (questionnaires, FGDs, KIIs); No. of stakeholders involved; No. of validation exercises carried out	Conference 2,500×15 technical officers×5 days; Officer DSA 15×5×2,240; Facilitator DSA per ward 45×2,240×3 days × twice; Tech team 15×2,240×5 days × twice; Conference validation 50 pax×1 day×2,500×twice; Fare 50 pax-×2,000×twice	CoG & Partners	2025–2026 / 2031–2032	CoG, Partners	1.746	1.051	—	—	0.695	—

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Provide training and capacity-building to FSCs, FFS, CRPs, Agripreneurs, Community Facilitators	Improved access to agricultural information and services by farmers	No. of alternative extension service providers trained and offering services	Conference 2,000 service providers × 5 days × twice × KES 2,500; Transport 2,000×5×2×1,000; Facilitators DSA 15×5×2×2,240	Dept. of Agriculture, Dev Partners	2025–2027	County Govt, Partners & Stakeholders	70.336	35.168	35.168	—	—	—
iii)	Institutionalise alternative extension services (Community Resource Persons)	Enhanced extension advisory to farmers	No. of extension service providers onboarded	Stipend: 236 CRPs × KES 3,000 × 12 months × 10 years	County Govt & Partners	2025–2034	County Govt & Partners	89.960	16.992	16.992	16.992	16.992	16.992
b) Promote Skills Development in Agroecology													
i)	Curriculum development for 6 short courses on Agroecology	Enhanced accessibility to knowledge and skills on agroecological practices	Developed curriculum with 6 short courses; No. of trainers trained	Curriculum 6 courses × KES 3M; Conference 100 pax × 5 days × KES 2,500; Fare 100 pax × 5 days × KES 2,000	National, County Govt & Partners	2025–2027	National, County Govt & Partners	20.250	9.000	9.000	—	—	—
ii)	Capacity building of artisans (1 per ward)	Increased uptake of AE practices	No. of artisans supported	Training fee 45 artisans × KES 25,000; Toolbox 45 × KES 25,000; Full package (machine toolbox) 15 × KES 50,000; Linkage to financial institutions; Conference 60 pax × 2,500 × 10; Officers transport 3 × 2,000 × 10	National, County Govt & Partners	2025–2034	National, County Govt & Partners	4.560	3.312	0.312	0.312	0.312	0.312

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iii)	Develop an automated e-Extension Application for the County	Enhanced accessibility to AE information and practices	No. of applications developed; No. of users	1 Application × KES 2,000,000 (development); Annual maintenance KES 500,000 × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	6.500	2.500	1.000	1.000	1.000	1.000
iv)	Training of extension staff and farmers on agroecological practices	Improved knowledge and skills in AE for all	No. of staff trained; No. of farmers trained per year	Staff conference 400 officers × 3 days × once × KES 2,500; Staff DSA 400 × 3 days × KES 2,240 × once; Facilitators DSA 45 wards × officers × KES 2,240 × quarterly × 10 yrs	Dept. of Agriculture & Partners	2025–2034	County Govt & Partners	9.720	6.498	0.810	0.810	0.810	0.810
v)	Promote use of mass media – radio and TV – to publicize AE practices	Increased community awareness on AE sustainable farming systems	No. of farmers reached through radio programmes	Radio: quarterly × 4 × KES 50,000 × 10 yrs; TV: 2 programmes/yr × KES 0.5M × 5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	7.000	1.400	1.400	1.400	1.400	1.400
c) Promote Public-Private Partnerships in Research and Extension in Agroecology													
i)	Stakeholder meetings for research and extension partnerships	Increased funding for research and extension in agroecology	No. of MoUs signed; No. of programmes supported by partners	1 county-wide meeting × 4 quarterly × 100 participants × KES 2,500 × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	10.000	2.000	2.000	2.000	2.000	2.000

#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Setting up on-farm participatory research, model farms and documentation of AE practices	Improved accessibility to skills and technology	No. of model farms established	Staff DSA 2,240 × 45 wards × 4 zones × 10 yrs; Demo materials 1 farm × 4 zones × 45 wards × KES 20,000 × 10 yrs	Dept. of Agriculture & Partners	2025–2034	County Govt & Partners	10.512	2.102	2.102	2.102	2.102	2.102
d) Support Information Management Systems in Agroecology													
i)	Establish and equip information resource centres within DOALFIC	Enhanced accessibility to information on agroecology	No. of resource centres established; No. of people trained and deployed to manage centres	1 resource centre per sub-county × 9 × KES 1.5M; Training: 1 officer per sub-county × 9 × 5 days × KES 11,200 × 10 yrs	County Govt & Partners, DOALFIC	2025–2034	County Govt & Partners	18.540	14.508	1.008	1.008	1.008	1.008
ii)	Host exhibitions and field days for information sharing on agroecology	Enhanced information sharing and networking opportunities	No. of field days held per year; No. of county-wide exhibitions held	2 field days per year × 45 wards × KES 100,000 × 10; 1 annual exhibition × KES 3,000,000 × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	120.000	24.000	24.000	24.000	24.000	24.000
STRATEGIC ISSUE 4: Weak Market Systems and Linkages for Sustainably Farmed Produce and Products													
Strategic Objective 4: To promote market systems and market linkages for sustainably farmed produce and products													
a) Strengthen Market Infrastructure for Sustainably Farmed Produce and Products													
i)	Market segregation to accommodate sustainable farming produce in 45 existing market structures	Enhanced market accessibility for sustainably farmed produce and products	No. of markets segregated	45 wards × KES 2M each	County Govt & Partners	2025–2034	County Govt & Partners	90.000	18.000	18.000	18.000	18.000	18.000

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Renovation of 10 existing markets and aggregation centres	Enhanced market accessibility for sustainable farming products and collective marketing	No. of aggregation centres renovated	10 centres × KES 2M	County Govt & Partners	2025–2034	County Govt & Partners	20.000	4.000	4.000	4.000	4.000	4.000
iii)	Installation of solar powered machines for agro-processing	Reduced losses, quality maintained, increased income	Solar dryers for maize; Solar dryers for vegetables	1 per ward × 45 × KES 150,000 (maize); 1 per ward × 45 × KES 45,000 (vegetables)	County Govt & Partners	2025–2027	County Govt & Partners	6.953	6.953	—	—	—	—
iv)	Purchase and installation of agro-processing plants per sub-county	Post-harvest losses reduced	No. of agro-processing plants; No. of functional cottage industries established	1 plant per sub-county × 9 × KES 1M; 45 cottage industries × KES 0.5M	County Govt & Partners	2025–2027	County Govt & Partners	31.500	9.000	—	—	—	—
v)	Training of producers and off-takers on post-harvest handling of sustainably farmed produce	Reduced post-harvest losses	No. of producers/off-takers trained	Staff DSA 2×2,240×2 trainings×45 wards×10 yrs; Hall hire 2×3,000×45×10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	4.716	0.943	0.943	0.943	0.943	0.943
b)	**Strengthen Market Linkages for Sustainably Farmed Produce and Products**												
i)	Capacity building of producer and marketing organisations on sustainably farmed produce	Sustainable marketing of sustainably farmed produce and products	No. of producer and marketing organisations capacity built	Staff DSA 2 trainings/yr × 45 × 2,240 × 4 staff × 10 yrs; Hall hire 45 × 3,000 × 2 trainings × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	4.716	0.943	0.943	0.943	0.943	0.943

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Trade shows and exhibitions with different stakeholders	Increased market linkages of enterprises in agroecology	No. of exhibitions held for sustainably farmed produce and products	Exhibition days 1×10×KES 500,000; Staff transport 100×2,000×10; Radio airtime KES 50,000×10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	7.500	1.500	1.500	1.500	1.500	1.500
iii)	Stakeholder fora to link producer/marketing organisations to registering bodies for organic products	Improved access to approved organic inputs	No. of groups linked to registered bodies	Conference facility 150 people × 1 × KES 2,500 × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	3.750	0.750	0.750	0.750	0.750	0.750
iv)	Support contract farming through market linkage fora (B2B forums, MOUs signed)	Enhanced market accessibility	No. of farmers contracted in the county	Linkage meetings twice/yr in county: 2×1×100 pax×KES 2,500×10; Staff fare reimbursement	County Govt & Partners	2025–2034	County Govt & Partners	5.000	1.000	1.000	1.000	1.000	1.000
v)	Procure market management information systems	Established data management systems	No. of market management systems established	10 existing markets × KES 10M (system cost per market)	County Govt & Partners	2025–2034	County Govt & Partners	10M (per period)	—	—	—	—	—
vi)	Maintenance and subscription fees for market management information systems	Market Management Information System maintained and updated	Number of systems being maintained	10 systems × KES 500,000 × 10 years	County Govt & Partners	2025–2034	County Govt & Partners	50.000	10.000	10.000	10.000	10.000	10.000
vii)	Conduct market surveys on sustainably farmed produce and products	Established market rates for sustainably farmed produce and products	No. of reports on surveys undertaken	10 staff × 4 counties × 3 days transport; Per diem 10×11,200×3 days×5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	1.880	0.376	0.376	0.376	0.376	0.376

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
viii)	Capacity building of stakeholders on use and management of market management systems	Enhanced usage and management of data	Number of stakeholders trained	Conference 100 people × KES 2,500 × 2 day trainings/yr × 10 yrs	County Govt & Partners	2025–2034	County Govt & Partners	5.000	1.000	1.000	1.000	1.000	1.000
c) Scale and Professionalize Agroecology Service Provider Hubs													
i)	Capacity building of 90,000 farmers practising agroecology on ASP hubs	Increased awareness for AE practices and products	No. of farmers sensitized	2 staff DSA × 45 × 2,240 × 10 yrs; Hall hire 45 × KES 3,000 × 1 × 10	County Govt & Partners	2025–2034	County Govt & Partners	2.358	0.472	0.472	0.472	0.472	0.472
ii)	Support establishment of agroecology service provider hubs	Established and operational ASP hubs across 45 wards	Number of ASP hubs established	45 agroecology hubs × KES 2M	County Govt & Partners	2025–2034	County Govt & Partners	90.000	18.000	18.000	18.000	18.000	18.000
iii)	Scaling of existing farmer service centres	Farmer service centres upscaled and professionalized	Number of FSCs enhanced	Conference 2 trainings/yr × 9 sub-counties × 50 pax × 2,500 × 10; Staff DSA 4 × 2,240 × 2 trainings × 9 × 10	County Govt & Partners	2025–2034	County Govt & Partners	24.113	4.823	4.823	4.823	4.823	4.823
d) Strengthen Farmer Producer and Marketing Organisations in Agroecology													
i)	Establish farmer marketing organisations	Strengthened farmer marketing organisations	No. of farmer marketing organisations established	3 CIGs → marketing orgs per ward; Facilitator 2×4×45×KES 3,000	County Govt & Partners	2025–2034	County Govt & Partners	1.080	0.216	0.216	0.216	0.216	0.216

#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Train farmer/producer organisations on value addition and agro-processing	Increased products being processed	No. of farmers trained on value addition	10 farmers per sub-county fare 10×9×2,000×10; Conference 100 pax × 2,500 × 10	County Govt & Partners	2025–2034	County Govt & Partners	4.300	0.860	0.860	0.860	0.860	0.860
iii)	Training of farmer groups on marketing and entrepreneurial skills	Strengthened producer and marketing organisations	No. of producer and marketing organisations trained	2 FGDs × 45 wards × 10 pax × 2 times × KES 500; Facilitator 2,000 × 45 × 2 × 5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	3.150	0.630	0.630	0.630	0.630	0.630
STRATEGIC ISSUE 5: Gender and Social Exclusion in Agroecology													
Strategic Objective 5: To promote gender equity and social inclusion in agroecology													
a) Promote Participatory Approaches for Youth, Women, Vulnerable and Indigenous Groups													
i)	Gender sensitization on roles and responsibilities in agroecology and Gender Action Learning System (GALS)	Enhanced knowledge on gender roles in agroecology	No. of people and households sensitized	Hall hire 45 wards × KES 5,000 × 2 meetings × 10 yrs; Staff DSA 45 × 5 staff × 2 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	30.410	6.080	6.080	6.080	6.080	6.080
ii)	Conduct advocacy campaigns on inclusivity in agroecological development	Enhanced knowledge on gender inclusivity in agroecology	No. of youth, women, PWDs and IPs implementing AE activities	PA system 9 × KES 20,000 × 2 times × 5 days × 10; Track hire 9 × KES 40,000 × 2 × 5 days × 10; Brochures 9 × 1,000 pcs × 2 × 10 × KES 50; Staff DSA 9 × 5 staff × 2,240 × 5 days × 10; Radio 2 stations × KES 50,000 × 2 × 10	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	70.050	14.010	14.010	14.010	14.010	14.010

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iii)	Formation of youth, women, PWD and indigenous people producer organisations in agroecology	Increased AE production by youth, women, PWDs and IPs	No. of producer organisations formed	Hall hire 45 wards × KES 5,000 × 4 meetings × 10 yrs; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	30.410	6.080	6.080	6.080	6.080	6.080
b) Promote Transformative AE Technologies and Research for Marginalised Groups													
i)	Introduce gender-sensitive labour-saving technology	Uptake of labour-saving technologies (improved hoes, treadle pumps, low-cost irrigation)	No. of people taking up the technology	Sensitization meetings 45×30×1×500×10; Hall hire 45×5,000×1×10; Facilitators 45×10×1×2,240; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	30.410	6.080	6.080	6.080	6.080	6.080
ii)	Conduct impact assessment on how technologies affect livelihoods of marginalised groups	Increased efficiency of AE technologies for marginalised groups	No. of technologies and practices assessed	Staff DSA 45 wards × KES 2,240 × 1 staff × 5 days × 10 yrs	County Govt, Partners	2025–2034	County Govt, Partners	5.040	1.004	1.004	1.004	1.004	1.004
iii)	Set up youth-led innovation hubs	Accessible youth innovations integrating modern and traditional knowledge	No. of youth sensitized on digital apps	Hall hire 45 wards × KES 5,000 × 4 meetings × 10; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	30.410	6.080	6.080	6.080	6.080	6.080

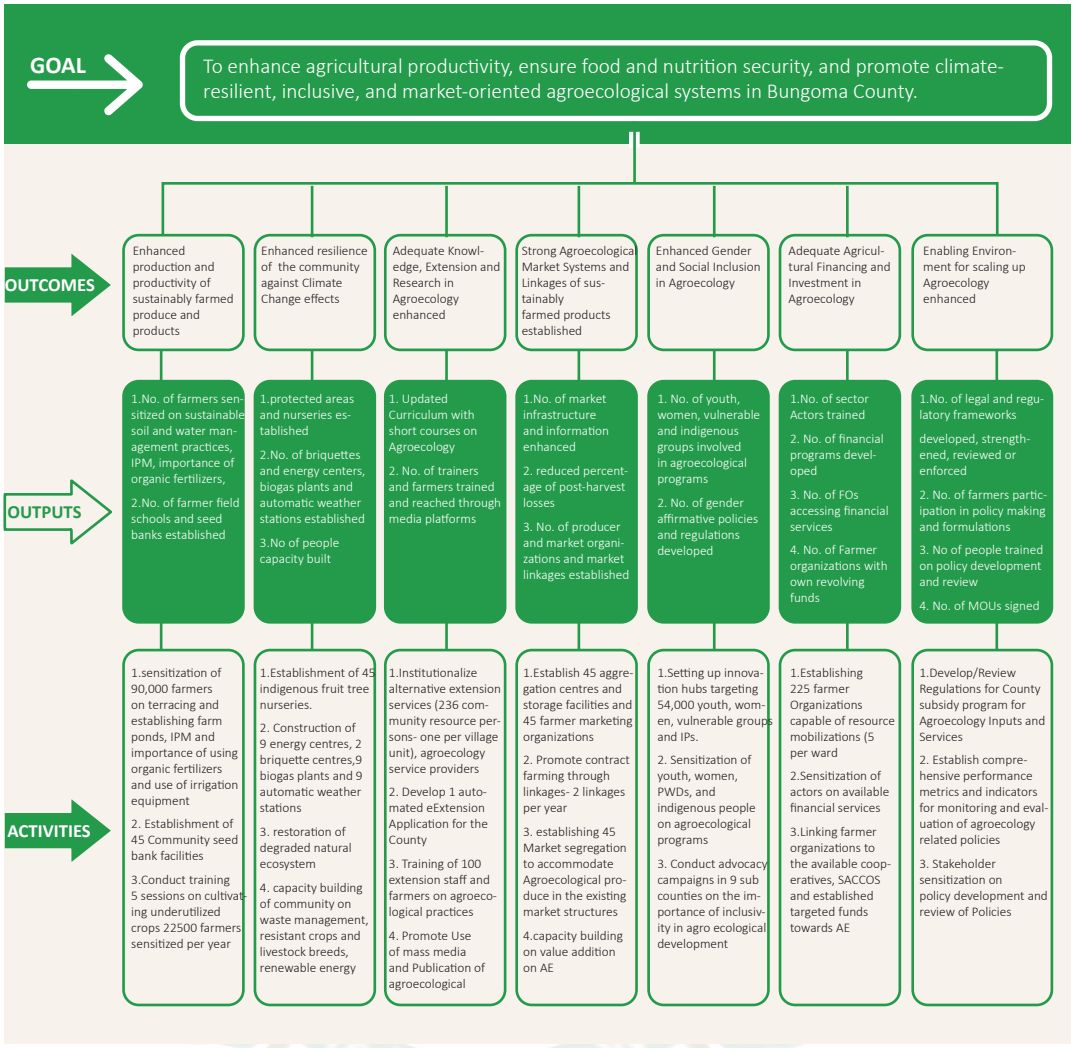
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	INDICATIVE BUDGET (KES Millions) BY PERIOD					
								Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
iv)	Capacity building of men, youth, women, PWDs, IPs in agroecological technologies	Sensitized groups in design, testing and evaluation of AE technologies	No. of youth, women, PWDs, IPs sensitized on AE technologies	Hall hire 45 wards × KES 5,000 × 4 meetings × 10; Staff DSA 45 × 5 staff × 4 meetings × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	30.410	6.080	6.080	6.080	6.080	6.080
STRATEGIC ISSUE 6: Low Public and Private Sector Financing in Agroecology													
Strategic Objective 6: To enhance agricultural financing and investment in agroecology													
a) Promote Investment Focused on Agroecology													
i)	Training farmer organisations on areas of investment in agroecology	Increased investment in agroecology	No. of farmer organisations investing in agroecology	20 people × 45 wards × 4 times × KES 1,500; Facilitator 2×3,000×45	County Govt & Partners	2025–2034	County Govt & Partners	5.520	1.104	1.104	1.104	1.104	1.104
ii)	Promote Public-Private Partnerships (PPP) investment in agroecology	Enhanced investment in agroecology	No. of stakeholder meetings held	50 people per sub-county × 9 sub-counties × KES 3,500 annually	County Govt & Partners	2025–2034	County Govt & Partners	7.875	1.575	1.575	1.575	1.575	1.575
b) Promote Capacity Building on Financial Management and Access													
i)	Sensitisation of actors on available financial services	Enhanced access to financial services	No. of farmers accessing financial products	3 trainings × 9 sub-counties × 100 people × KES 1,000 × 5 yrs; Facilitators 2×3×9×2,240×5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	14.105	2.821	2.821	2.821	2.821	2.821

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii–iii)	Linking farmer organisations to co-operatives/SACCOs; Capacity building on organisational management	Increased adoption of agroecology; Improved governance in farmer organisations	No. of FOs accessing finances; No. of FOs effectively managing their organisations	3 meetings × 9 sub-counties × 50 pax × 500 × 5; Facilitator 2×9×3×2,240×5; FGD transport 2×9×2,000×5; (repeated for org management)	County Govt & Partners	2025–2034	County Govt & Partners	7.132	1.426	1.426	1.426	1.426	1.426
c) Promote Development of Financial Programmes and Products Focused on Agroecology													
i)	Training farmer organisations on VSLA and other revolving funds	Financial empowerment of farmer organisations	No. of FOs trained; No. of FOs with own revolving funds	50 people × 45 wards × 4 times × KES 500 × 5; Facilitator 2×4×45×2,240×5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	24.516	4.903	4.903	4.903	4.903	4.903
ii)	Link farmer groups to established targeted funds for AE	Enhanced financial accessibility	No. of FOs linked to financial services; No. of exhibitions done	50 people × 2 linkage forums/yr × KES 3,500 × 5 yrs	County Govt & Partners	2025–2034	County Govt & Partners	1.750	0.350	0.350	0.350	0.350	0.350
STRATEGIC ISSUE 7: Weak Enabling Environment for Scaling Up Agroecology													
Strategic Objective 7: Strengthen policy, legal and institutional framework in agroecology													
a) Develop, Review and Reinforce Legal and Regulatory Framework on Agroecology													
i)	Establish comprehensive performance metrics and M&E indicators for AE-related policies	Policies aligned with national commitments based on AE principles	No. of AE metrics developed; No. of policy tracking and reporting tools developed	Development process: drafting to publishing	County Govt, National Govt, Other Stakeholders	2027–2028	County Govt, National Govt	5.000	—	5.000	—	—	—

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	Develop/Review legal framework for Crop Insurance Services	Access to crop insurance services by farmers in agroecology	Legal framework developed	Development process: drafting to publishing	County Govt, National Govt, Other Stakeholders	2025–2026	County Govt, National Govt	5.000	5.000	—	—	—	—
iii)	Develop/Review Bill and Regulations for CASSCOM	CASSCOM operations streamlined	Bill and Regulations developed	Development process: drafting to enactment	County Govt, National Govt, Other Stakeholders	2025–2028	County Govt, National Govt	6.000	3.000	3.000	—	—	—
iv)	Review of the Agroecology Strategy	Strategy aligned to current agroecological practices	Reviewed strategy	Strategy review process: review meetings to publishing	County Govt, National Govt, Partners	2029–2030	County Govt, National Govt	3.000	—	—	3.000	—	—
b) Support Inclusive Farmer Participation in Policy Development, Review and Implementation													
i)	Stakeholder sensitization on policy development and review of AE-related policies	Enhanced knowledge on existing policies and strategies	No. of people trained on policy development and review	9 × 25 × 1 × KES 2,000 × 10; Hall hire 9 × KES 5,000 × 1 × 10; Facilitators 9 × 5 × 2,240 × 10; Stationery	County Govt, Partners	2025–2034	County Govt, Partners & Stakeholders	7.208	1.442	1.442	1.442	1.442	1.442
c) Strengthen Agroecological Institutional and Coordination Framework													
i)	Establish a County Multisectoral Coordination Unit for agroecology	Coordination of agroecology activities in the county	Number of platforms established	9 × 25 × 1 × KES 2,000 × 10; Hall hire 9 × KES 5,000 × 1 × 10; Facilitators 9 × 5 × 2,240 × 10; Stationery	National Govt, County Govt, Other Stakeholders	2025–2034	County Govt, Partners & Stakeholders	7.208	1.442	1.442	1.442	1.442	1.442

								INDICATIVE BUDGET (KES Millions) BY PERIOD					
#	Priority Action / Interventions	Expected Outcome	Key Performance Indicators	Target / Cost Basis	Responsible Institution	Time Frame	Sources of Funds	Total (KES M)	2025–27	2027–28	2029–30	2031–32	2033–34
ii)	MOU development between the County and stakeholders on agroecology promotion	Linkages established between County and other stakeholders on agroecology	No. of MOUs signed	Fare refund 1×30×KES 2,000; Hall hire 1×KES 5,000; Conference facility 30×KES 2,500; Printing of MOU 6×KES 500	County Govt, National Govt, Other Partners	2025–2026	County Govt, National Govt	0.143	0.143	—	—	—	—
d) Promote Incentives Towards Agroecology Enterprises													
i)	Develop/Review Regulations for County subsidy programme for AE inputs and services	Access to subsidized inputs and services in agroecology	Regulations developed	Development process: drafting to publishing	County Govt, National Govt, Other Stakeholders	2027–2028	County Govt, National Govt	5.000	—	5.000	—	—	—
							GRAND TOTAL (KES Millions)	**1,510.770**	**371.798**	**324.042**	**264.874**	**269.415**	**254.345**

Annex 2: Bungoma County Agroecology Strategy 2025-2034 Impact Chain



Annex 3: Theory of Change

Bungoma County Challenges: The County agroecology practices is constrained by low production and productivity, Climate Change Effects on Agri-Food Systems, Limited knowledge, skills and Research, Weak Market Systems and Linkages, Gender and Social Exclusion, Low public and private sector financing and Weak Enabling Environment implementation

Assumptions & Risks

- Political commitment- National & County levels
- Adequate County Capacity
- Effective Intergovernmental coordination
- Private Sector Coordination

IF....

25% of farming households across Bungoma County are trained on agroecological practices,45 aggregation centers, 9 agro-processing plants for value addition on these products done,

AND...

products certified And enterprises supported with finances

THEN...

a significant proportion will establish viable agro-ecological enterprises, which will create 1270 jobs annually, increase household incomes and reduce poverty within 10 years.

Learning & Accountability

- County shall ensure accountability in service delivery and effective data management
- establish continuous monitoring mechanisms to track progress, assess performance, and inform adaptive management

Annex 4: Beneficiary Targeting and Economic Value

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
Low Production and Productivity of Sustainably Farmed Produce and Products	Promote Sustainable Soil, Water and Animal Health Management Practices	Sensitization of 90,000 farmers on soil and water conservation and establishment of structures	2,000 farmers per ward × 45 wards (90,000 farmers countywide); 45 farm ponds	90,000 farmers countywide; 180 community workers	180 community workers employed; projected farm productivity turnover of KES 450 Million
		Promoting on-farm production and use of organic fertilizers (composting, farmyard manure, liquid fertilizers, vermicomposting)	500 farmers per ward × 45 wards × 10 years	45,000 farming households countywide	450 organic fertilizer enterprises created; projected turnover KES 600 Million
		Train farmers on Integrated Pest Management (IPM) and ethnoveterinary practices	150 farmers per ward × 45 wards × 10 years	67,500 farmers countywide	Reduced crop and livestock losses worth KES 300 Million
		Create awareness on soil testing and analysis; Build capacity of Agroecology Hubs on soil sampling and pH testing; Support and promote soil testing	1 Agroecology Hub per ward; 27,000 soil samples countywide	27,000 farmers countywide	90 agroecology technicians employed; projected turnover KES 250 Million
	Promote the Establishment of Community Seed Systems	Capacity building of farmers on the seed banking process and registration	150 farmers per ward × 45 wards × 10 years	15,000 seed producer households countywide	225 seed custodians employed; projected seed turnover KES 120 Million
		Establishing community seed bank facilities	1 seed bank per sub-county × 9 sub-counties	45,000 farming households countywide	45 direct jobs created; annual turnover KES 90 Million
		Support establishment of gene banks for underutilized crops (bambara nuts, sorghum, millet, indigenous vegetables)	45 gene banks (one per ward)	The gene banks will benefit 286,000 farming households	45 direct jobs created; annual turnover KES 90 Million

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Conducting county annual seed fairs	1 county seed fair conducted annually (10 seed fairs over implementation period)	Increased community awareness and adoption of indigenous seeds and food traditions reaching over 90,000 community members	Enhanced preservation of indigenous seed varieties, increased market opportunities for local seed enterprises, and strengthened food security generating estimated annual economic value of KES 180 Million
	Promote the Establishment of Community Livestock and Fish Breeders	Capacity building of community livestock and fish breeders	2 breeders per ward × 45 wards	22,500 livestock and fish farming households	450 breeder enterprises supported; projected turnover KES 400 Million
	Promote Water Management Programs	Capacity building of community on irrigation technologies and equipment	150 farmers per ward × 45 wards × 10 years	20,000 irrigating households countywide	135 irrigation technician jobs created; projected turnover KES 500 Million
		Support establishment of solar powered irrigation kits	2 irrigation kits per ward × 45 wards	4,500 households countywide	90 technical installation jobs; projected horticulture turnover KES 180 Million
Climate Change Effects on Agri-Food Systems	Promote Afforestation, Reforestation and Protection of Water Catchment Areas	Tree planting on degraded sites, institutions, farms and within the natural ecosystem	100,000 seedlings annually countywide × 10 years	100,000 households and institutions countywide	900 nursery and casual jobs created; projected environmental value KES 700 Million
		Establishment of indigenous tree nurseries	1 nursery per ward × 45 wards	4,500 youth and women beneficiaries	225 nursery jobs created; projected turnover KES 370 Million
	Promote Adoption of Productive Use of Renewable Energy and Non-Wood Products	Capacity building of community on productive use of renewable energy	2 meetings per year in every ward	90,000 people will benefit	

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Construction of solar powered energy centres	1 energy centre per sub-county × 9 sub-counties	18,000 households and SMEs countywide	90 technician and operator jobs; projected turnover KES 270 Million
		Establishment of briquettes making centres	2 briquette centres countywide	2,000 households and youth groups	60 youth and women employed; projected turnover KES 200 Million
	Promote Programmes on Reduction of Greenhouse Gas Emissions	Capacity building on carbon credits and reduction of greenhouse gas emissions	4 meetings per year in every ward	90,000 people will benefit	
		Establishment of biogas plants	1 biogas plant per sub-county × 9 sub-counties	900 households and institutions	45 technical jobs created; projected savings KES 90 Million
	Promote Sustainable Waste Management	Capacity building of community on recycling of waste and other management practices	4 meetings per year in every ward (1,800 meetings over 10 years across 45 wards)	90,000 community members benefiting from improved waste management and recycling practices	Reduced environmental pollution, increased compost production, and green enterprise opportunities generating estimated annual economic and environmental value of KES 250 Million
	Promote Climate-Adapted Crop Varieties, Livestock Breeds and Tree Species	Capacity building on emerging pests and diseases; crop and animal tolerant species	4 meetings per year in every ward (1,800 meetings over 10 years across 45 wards)	90,000 farmers benefiting from improved knowledge on pest, disease, and climate-resilient species management	Reduced crop and livestock losses and improved productivity generating estimated annual savings and farm income gains of KES 500 Million
	Support Climate Early Warning Systems	Establish Automatic Weather Stations (AWS)	1 AWS per sub-county × 9 sub-counties	200,000 farmers countywide	18 technical staff employed; projected avoided losses KES 500 Million

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Procurement of weather forecasting infrastructure	9 sub-counties × 2 computers	Whole sub county	Availability of analyzed data
		Training of staff on AWS operations, remote sensing and GIS	5 days training outside the county	18 staff trained	Staff trained will run the weather stations
		Facilitating fora for participatory scenario planning and early warning dissemination	One meeting per year per ward	200 farmers reached per year	Developed advisories for early warning
Inadequate Extension, Knowledge, Skills and Research in Agroecology	Promote and Institutionalize Alternative Extension Approaches	Conduct training needs assessment among alternative extension approaches	3 days' workshop In the wards	All 45 wards	Extension gaps addressed
		Provide training and capacity-building to FSCs, FFS, CRPs, Agripreneurs, Community Facilitators	2,000 service providers countywide	200,000 farmers reached countywide	2,000 extension service jobs created; productivity gains KES 1 Billion
		Institutionalize alternative extension services (Community Resource Persons)	236 CRPs countywide	236,000 farmers reached	236 direct jobs supported; projected extension value KES 900 Million
	Promote Skills Development in Agroecology	Curriculum development for 6 short courses on Agroecology	6 accredited short courses developed and validated countywide	2,000 extension staff, youth, artisans and lead farmers trained over 10 years	Improved technical capacity for agroecology service delivery; estimated 120 curriculum development and training consultancy opportunities
		Capacity building of artisans (1 per ward)	45 agroecology artisans trained and certified (1 per ward)	5 ward-based artisans directly supported; over 22,500 farmers indirectly benefiting	Creation of 45 green enterprises and employment opportunities for rural youth and artisans

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Develop an automated e-Extension Application for the County	1 countywide automated e-extension platform developed and operationalized	150,000 farmers and stakeholders accessing extension information digitally	Reduced extension delivery costs and increased outreach efficiency; enhanced digital agriculture economy
		Training of extension staff and farmers on agroecological practices	2,000 extension staff and 90,000 farmers trained across 45 wards	90,000 farming households reached	Increased adoption of sustainable farming practices leading to higher productivity and resilience; over 500 seasonal training jobs created
		Promote use of mass media – radio and TV – to publicize AE practices	4 radio programs and 2 TV features aired annually for 10 years	Over 500,000 county residents reached with agroecology awareness messages	Expanded public awareness and market demand for agroecological products; strengthened local media partnerships
	Promote Public-Private Partnerships in Research and Extension in Agroecology	Stakeholder meetings for research and extension partnerships	2 county stakeholder forums held annually	500 stakeholders from research institutions, private sector, NGOs and farmer organizations engaged	Strengthened partnerships and resource mobilization for agroecology investments
		Setting up on-farm participatory research, model farms and documentation of AE practices	45 model farms established (1 per ward) and participatory research conducted	45 host farmers and over 67,500 neighboring farmers benefiting through demonstrations	Increased innovation, farmer learning and technology adoption; enhanced farm productivity and knowledge sharing
	Support Information Management Systems in Agroecology	Establish and equip information resource centres within DOALFIC	1 county resource centre and 9 sub-county information hubs established and equipped	Extension staff, researchers, students and over 100,000 farmers accessing information services	Improved storage, dissemination and accessibility of agroecology information and data

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Host exhibitions and field days for information sharing on agroecology	2 annual county exhibitions and 45 ward field days conducted annually	Over 135,000 farmers, youth and stakeholders participating over 10 years	Enhanced market linkages, innovation exchange and farmer exposure to agroecological technologies
Weak Market Systems and Linkages for Sustainably Farmed Produce and Products	Strengthen Market Infrastructure for Sustainably Farmed Produce and Products	Market segregation to accommodate sustainable farming produce in 45 existing market structures	1 market per ward × 45 wards	90,000 farmers and traders countywide	450 trading opportunities created; projected turnover KES 1.5 Billion
		Renovation of 10 existing markets and aggregation centres	10 aggregation centres countywide	30,000 farmers countywide	100 aggregation jobs created; projected turnover KES 800 Million
		Installation of solar powered machines for agro-processing	45 solar-powered agro-processing units installed (1 per ward)	22,500 farmers and producer groups accessing affordable processing services	450 youth and artisans employed in installation, operation, and maintenance; estimated annual turnover of KES 135 Million from processed products
		Purchase and installation of agro-processing plants per sub-county	9 agro-processing plants established (1 per sub-county)	90 farmer cooperatives and aggregation centers supported; over 45,000 farming households benefiting indirectly	900 direct and indirect jobs created; projected annual turnover of KES 540 Million through value-added enterprises
		Training of producers and off-takers on post-harvest handling of sustainably farmed produce	4,500 producers and off-takers trained countywide	4,500 producers, traders, aggregators, and buyers trained on grading, storage, packaging, and handling	Reduction of post-harvest losses by 30%; estimated savings and increased earnings worth KES 180 Million annually

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
	Strengthen Market Linkages for Sustainably Farmed Produce and Products	Capacity building of producer and marketing organizations on sustainably farmed produce	180 producer and marketing organizations trained (4 per ward)	6,000 farmers reached through cooperatives, SACCOs, and producer groups	Increased bargaining power and collective marketing generating an estimated KES 360 Million in annual sales
		Trade shows and exhibitions with different stakeholders	18 county and regional trade shows/ exhibitions conducted (2 per sub-county)	9,000 producers, traders, processors, and consumers participating	Market exposure leading to business deals and product promotion worth approximately KES 150 Million annually
		Stakeholder fora to link producer/ marketing organizations to registering bodies for organic products	45 stakeholder linkage fora conducted (1 per ward)	225 producer organizations linked to certification and registration bodies	Increased access to premium organic markets with projected annual earnings of KES 270 Million
		Support contract farming through market linkage fora (B2B forums, MOUs signed)	27 B2B market linkage forums conducted; 90 MOUs signed countywide	18,000 farmers linked to buyers, processors, and exporters	Stable market contracts generating projected annual turnover of KES 450 Million
		Procure market management information systems	1 county market management information system procured and operationalized	45 wards and all producer cooperatives accessing real-time market information	Improved pricing transparency and market efficiency reducing transaction losses by KES 60 Million annually
		Maintenance and subscription fees for market management information systems	Annual maintenance and subscriptions supported for 10 years	90 farmer cooperatives, extension officers, and market actors supported	sustained access to digital market services supporting trade valued at over KES 500 Million annually

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Conduct market surveys on sustainably farmed produce and products	18 market surveys conducted (2 per sub-county over implementation period)	County government, cooperatives, traders, and 45,000 farmers benefiting from market intelligence	Evidence-based market planning increasing farmer profitability by an estimated KES 120 Million annually
		Capacity building of stakeholders on use and management of market management systems	2,250 stakeholders trained countywide	Farmers, traders, extension officers, cooperatives, and processors trained	Enhanced digital market participation increasing sales efficiency and reducing information gaps worth KES 80 Million annually
	Scale and Professionalize Agroecology Service Provider Hubs	Capacity building of 90,000 farmers practicing agroecology on ASP hubs	90,000 farmers trained countywide	90,000 farming households adopting agroecological practices through structured service hubs	Increased productivity, reduced input costs, and improved resilience generating an estimated KES 900 Million annual farm-level economic gains
		Support establishment of agroecology service provider hubs	45 ASP hubs established (1 per ward)	45 trained service providers and over 450 youth/artisans engaged in agroecology service delivery	Creation of green jobs and service enterprises valued at approximately KES 225 Million annually through input supply, advisory, and local services
		Scaling of existing farmer service centres	existing farmer service centres upgraded and fully operational (1 per sub-county)	90,000 farmers and producer groups accessing decentralized agroecology services through strengthened centres	Improved service efficiency and reduced extension delivery costs saving an estimated KES 180 Million annually while boosting farm productivity and market readiness

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
	Strengthen Farmer Producer and Marketing Organisations in Agroecology	Establish farmer marketing organisations	180 farmer producer and marketing organisations established (4 per ward)	36,000 farmers organized into structured marketing and producer groups	Improved collective marketing increasing farm gate prices and annual turnover by an estimated KES 360 Million
		Train farmer/ producer organisations on value addition and agro-processing	9,000 members of farmer organisations trained countywide	9,000 farmers and group leaders trained on value addition, grading, packaging, and agro-processing	Reduced post-harvest losses and increased product value adding an estimated KES 270 Million annually in farm income
		Training of farmer groups on marketing and entrepreneurial skills	18,000 farmers trained (500 per ward equivalent coverage across clusters)	18,000 farmers, youth, and women groups trained in agribusiness, marketing, and entrepreneurship	enhanced enterprise development and market participation generating an estimated KES 450 Million annual turnover from agroecological enterprises
Gender and Social Exclusion in Agroecology	To promote gender equity and social inclusion in agroecology	Gender sensitization on roles and responsibilities in agroecology and Gender Action Learning System (GALS)	45 wards countywide	45,000 households	90 facilitator jobs created; productivity gains KES 200 Million
		Conduct advocacy campaigns on inclusivity in agroecological development	45 ward-level campaigns and 9 sub-county forums conducted	90,000 community members reached; with targeted inclusion of 45,000 women, 27,000 youth, and 4,500 PWDs	Improved participation in agroecological value chains leading to increased household incomes and estimated inclusive economic gains of KES 300 Million annually through enhanced access to resources, markets, and services

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Formation of youth, women, PWD and indigenous people producer organisations in agroecology	180 inclusive producer organizations formed (4 per ward)	45000 direct members (25000 youths, 15000 women, 3000 PWDs, 2000 indigenous groups) organized into functional producer groups	Enhanced access to markets, finance, and extension services generating estimated annual economic value of KES 420 Million through collective production, value addition, and improved market integration
	Promote Transformative AE Technologies and Research for Marginalised Groups	Introduce gender-sensitive labour-saving technology	45 ward-level technology demonstration and distribution points established; 4,500 units of labour-saving technologies deployed	45,000 farmers (with at least 60% women and youth) benefiting from reduced drudgery and improved productivity	Reduced labour costs and increased efficiency generating estimated annual savings and productivity gains of KES 350 Million
		Conduct impact assessment on how technologies affect livelihoods of marginalised groups	9 sub-county assessments and 1 countywide synthesis report conducted	90,000 households assessed, with focus on women, youth, PWDs, and indigenous groups	Evidence-based policy improvements leading to optimized investments and improved efficiency worth KES 120 Million in avoided inefficiencies and better-targeted interventions
		Set up youth-led innovation hubs	9 youth agroecological innovation hubs established (1 per sub-county)	9,000 youth engaged in innovation, agritech development, and agribusiness incubation	Job creation and enterprise development generating estimated annual turnover of KES 270 Million through agroecological innovations and startups

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
		Capacity building of men, youth, women, PWDs, IPs in agroecological technologies	90,000 stakeholders trained countywide	90,000 farmers and value chain actors trained on climate-smart agroecological technologies and practices	Increased productivity and reduced losses generating estimated annual economic gains of KES 600 Million through improved yields and efficiency
Low Public and Private Sector Financing in Agroecology	Promote Investment Focused on Agroecology	Training farmer organizations on areas of investment in agroecology	45 wards countywide	22,500 farmers	450 VSLA groups managing revolving funds worth KES 250 Million
		Promote Public-Private Partnerships (PPP) investment in agroecology	18 PPP investment forums conducted; 45 partnership agreements/ MOUs signed with private sector actors, NGOs, research institutions, and development partners	90,000 farmers, cooperatives, SMEs, processors, and agroecology enterprises benefiting from increased investments and market opportunities	Leveraged investments and enterprise development projected to attract over KES 2 Billion in agroecology financing and generate approximately 3,600 direct and indirect green jobs countywide
	Promote Capacity Building on Financial Management and Access	Sensitisation of actors on available financial services	180 sensitisation forums conducted countywide (4 per ward)	90,000 farmers, youth, women, and producer groups reached with information on credit, insurance, and savings products	Increased uptake of financial services and investment in agroecology projected to unlock KES 600 Million in agricultural financing annually
		Linking farmer organisations to cooperatives/ SACCOs; Capacity building on organisational management	180 farmer organisations linked and trained on governance and financial management	36,000 farmers benefiting through strengthened cooperatives and SACCO membership	Improved financial management and access to affordable credit generating estimated annual enterprise growth worth KES 450 Million

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
	Promote Development of Financial Programmes and Products Focused on Agroecology	Training farmer organisations on VSLA and other revolving funds	900 VSLA groups trained and operationalized countywide	27,000 farmers, women, and youth participating in savings and revolving fund schemes	Increased household savings and local investment mobilization valued at approximately KES 300 Million annually
		Link farmer groups to established targeted funds for AE	450 farmer groups linked to government and donor-supported financing facilities	45,000 farmers accessing agroecology grants, loans, and enterprise financing	Improved investment in sustainable production and agribusinesses generating projected annual economic returns of KES 750 Million
Weak Enabling Environment for Scaling Up Agroecology	Develop, Review and Reinforce Legal and Regulatory Framework on Agroecology	Establish comprehensive performance metrics and M&E indicators for AE-related policies	1 countywide agroecology M&E framework developed and operationalized	County departments, development partners, cooperatives, and 90,000 farming households benefiting from evidence-based implementation	Improved monitoring efficiency and accountability enhancing resource utilization
		Develop/ Review legal framework for Crop Insurance Services	1 county crop insurance legal framework developed adopted	90,000 farmers gaining improved protection against climate and production risk	Reduced climate related losses
		Develop/ Review Bill and Regulations for CASSCOM	1 county (CASSCOM) Bill and regulations developed/	County government institutions, cooperatives, private sector actors, and producer organisations	improved governance and regulatory efficiency supporting agroecology investments and trade
			Reviewed		
		Review of the Agroecology Strategy	2 mid-term and end-term strategy reviews conducted	County government, development partners, and 90,000 farming households benefiting from updated strategic direction	Enhanced strategy effectiveness and investment alignment improving programme efficiency

Strategic Issue	Strategic Intervention	Activity	Target Number	Beneficiary Target	Economic Value
	Strengthen Agroecological Institutional and Coordination Framework	Stakeholder sensitization on policy development and review of AE-related policies	90 sensitization forums conducted countywide (2 per ward)	45,000 stakeholders including farmers, youth, women groups, CSOs, and private sector actors	Increased policy awareness and stakeholder participation strengthening compliance and uptake
	Strengthen Agroecological Institutional and Coordination Framework	Establish a County Multisectoral Coordination Unit for agroecology	1 County Multisectoral Agroecology Coordination Unit established and operational	All county departments, NGOs, private sector actors, and agroecology stakeholders coordinated under one framework	Improved inter-sectoral coordination increasing efficiency and reducing duplication
		MOU development between the County and stakeholders on agroecology promotion	45 MOUs signed with research institutions, NGOs, private sector, and development partners	90,000 farmers benefiting indirectly through strengthened partnerships and service delivery	Leveraged technical and financial support projected to mobilize over KES 1 Billion in agroecology investments
	Promote Incentives Towards Agroecology Enterprises	Develop/Review Regulations for County subsidy programme for AE inputs and services	1 county subsidy regulation framework for AE inputs and services developed/	90,000 farmers benefiting from improved access to subsidized agroecology inputs and services	Increased affordability and adoption of agroecological practices
			reviewed		

Annex 5: Estimated Budget for the Strategy Implementation

S/N	Strategic Pillar	Budget (KES Million)
1	Low agroecological production and productivity	527.045
2	Climate change effects on agri-food systems	413.920
3	Limited knowledge, skills and research in agroecology	359.534
4	Weak market systems and linkages for agroecological produce and sustainably farmed products	355.316
5	Gender and social exclusion in agroecology	196.690
6	Low public and private sector financing in agroecology	60.898
7	Weak enabling environment for scaling up agroecology	38.559
	TOTAL	**1,530.708 Million (≈ 1.531 Billion KES)**

Annex 6: Resource Mobilization Approach

S/N	Strategy	Intervention	Activity
1	**Stakeholder Engagement and Collaboration**	Engage Local Governments and Institutions:	Collaborate with the Bungoma County government to integrate agroecology priorities into development plans and budgets. Advocate for dedicated funding for agroecological practices.
		Form Strategic Partnerships	Partner with local NGOs, farmers' cooperatives, universities, and research institutions to co-create and implement agroecological solutions.
		Private Sector Engagement	Mobilize agri-businesses and local enterprises to support value chains based on agroecological principles.
2	**Leverage National and International Funding Opportunities**	Tap into National Agricultural Programs	Access funds from Kenya's national government programs supporting sustainable agriculture, like the Agricultural Sector Transformation and Growth Strategy (ASTGS).
		Align with Global Initiatives	Secure funding from global initiatives such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), SNV's SoC project and FAO's BOOST project, Africa Centre for Climate AgriFood and Nature (AfriCCLAN), Climate Works Foundation, TMG Research gmbh – On Think Tanks
		Engage Development Partners	Approach development agencies and donors, such as USAID, IFAD, or the EU's Development Fund, that support food systems transformation.
3	**Community and Farmer-Centric Funding Mechanisms**	Promote Cooperative Financing Models	Establish agroecology-based farmer cooperatives to pool resources and access microfinancing.
		Introduce Community Savings Groups	Encourage savings and credit cooperatives (SACCOs) focused on sustainable agriculture investments.
		Leverage Crowdfunding Platforms	Develop community-driven agroecology campaigns on crowdfunding platforms to mobilize resources.

S/N	Strategy	Intervention	Activity
4	**Value Addition and Market Development**	Invest in Value Chains	Mobilize resources to support processing, storage, and marketing for agroecological products, ensuring farmers capture more value.
		Promote Agro Ecological Branding	Develop a certification system for agroecological products from Bungoma to attract premium markets.
		Encourage Public Private Market Initiatives	Set up platforms that link farmers to buyers, emphasizing sustainability.
5.	**Policy Advocacy and Enabling Environment**	Advocate for Policy Support	Lobby for county-level policies to allocate a portion of the agricultural budget toward agroecological practices.
		Tax Incentives for Sustainable Agriculture	Advocate for tax breaks or subsidies for businesses and farmers adopting agroecology.
6.		Enhance Farmer Training	Seek grants to establish farmer field schools and peer learning programs on agroecology.
	Capacity Building and Knowledge Exchange	Invest in Research and Innovation	Mobilize funds for participatory research on local agroecological practices and their scalability.
		Build Youth and Women Networks	Support training programs to empower youth and women as key players in agroecology.
7.	**Monitoring, Evaluation, and Impact Reporting**	Develop an Impact Framework	Allocate resources for M&E to demonstrate the socioeconomic and environmental benefits of agroecology.
		Share Success Stories	Use evidence-based results to attract further funding and partnerships.

Annex 7: Stakeholder analysis

Category	Stakeholders	Roles
County Government	Department of Agriculture, Livestock, Fisheries, Irrigation and Co-operatives.	Shall be responsible for coordination during the implementation of this Strategy, capacity building, monitoring & evaluation, reporting and review of the Strategy.
	Department of Water, Natural Resources, Environment, Tourism & Climate Change.	Implementation of the County Climate Change Action Plan 2023-2027; management of solid waste; conservation and protection of natural resources; restoration of degraded sites and water catchments.
	Department of Lands, Urban/ Physical Planning, Housing & Municipalities	Advise on land use management and urban/physical planning.
	Department of Trade, Energy and Industrialization	Spearheading and promoting the adoption of alternative energy sources.
	Department of Finance and Economic Planning	Responsible for coordination of development of budget and planning documents such as County Integrated Development Plan, Annual Development Plan, and Annual Financial Fiscal Strategy Paper among others.
	Department of Public Service Management, Administration & ICT	Shall be responsible for innovations and technologies in agroecology.
	County Assembly of Bungoma	Approval of county plans, budgets and oversight role.
National Government	National Government	Develop, enforce and review policies, laws and regulatory framework in agroecology; provide financial service;
		and strengthen institutional and coordination mechanisms.
	Council of Governors	Consultations among the County and National government. Information sharing on the performance of Counties in the execution of the functions including implementation of strategies.
	Other Counties	Information sharing
Regional Economic Blocks	The Lake Region Economic Block	Coordinating and facilitating service delivery and development on behalf of stakeholders

Category	Stakeholders	Roles
Regulatory Bodies	NEMA	Responsible for the supervision and coordination of all matters related to environment and implementing policies and legal framework on environment
	WRA	Supports the resilience and productivity of agroecological systems.
	KEBS	Establishment of quality standards of all products, developing standards for bio inputs including organic fertilizer quality control and certification of fertilizer materials.
	KEPHIS	Oversee regulatory functions on organic and bio fertilizers.
	KVB	The Board contributes to SDGs No. 2 on ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture and goal No. 4 on ensuring inclusive and quality education for all and promoting lifelong learning.
	KeFS	The mandate of the Kenya Fisheries Service is to conserve, manage and develop Kenya's fisheries and aquaculture resources.
	PCPB	Statutory organization of Kenya Government established under an Act of parliament, the Pest Control Products Act, Cap 346, Laws of Kenya of 1982 to provide an efficient and effective regulatory service for importation, manufacture, transportation, sale, disposal and safe use of pest control products.
	NCPB	the board will be responsible for offering services such as drying, cleaning, storing, warehousing, weighing, bagging and other related services to agroecological products.
	GIZ, USAID, EU, FAO, PELUM, BIOVISION Africa Trust, SNV, Alliance Biodivesity and CIAT	Development partners will provide financing and technical support for the implementation of this strategy.
	KENAF, ADS, CREADIS, AAK, CGA, Civil Societies, SOCAA, Kimaeti CBO	They shall collaborate with the county Government in the implementation of the policy through financing, offering technical support, oversight and review of the strategy.

Category	Stakeholders	Roles
	The Kenya Organic Agriculture Network (KOAN)	This is the national Co coordinating body for organic agriculture activities in Kenya. KOAN emerged from a consultative process where organic practitioners agreed to come together to achieve the synergy required to develop organic sub sector.
	The Kenya institute of organic farming (KIOF)	This is an NGO that exists solely for the benefit of the public at large by promoting rural development and education in organic agriculture and related marketing services. Currently KIOF promotes practical training to farmers groups, KSCE level students and other rural youth.
	En-Cert	This is a Kenyan certification body which offers organic certification services to individual producers as well as producer groups.
	a-Cert	This is a certification body of organic agriculture products with an official scope of; Unprocessed agricultural crop products; livestock and unprocessed livestock products; Processed agricultural, plants and livestock products for human consumption and consisting mainly of one or more ingredients of plant or animal origin; Animal feed, compound feed and feed raw materials; Farm inputs and organic fertilizers.
	Nesvax	A certifying body within Kenya in organic products
	Control union	(CU) certifications is accredited by national accreditation bodies including the Dutch RvA or the Sri lanka SLAB. CU is operational as an accreditation body in Kenya for a number of standards including several organic standards.
	Input dealers (Agro dealers. Seed Agrochemical, Mechanization companies, Hatcheries, AI services, Feed dealers)	Provision of inputs, training and extension services.

Category	Stakeholders	Roles
	Traders, Processors and Service Providers, VI-agroforestry, western tree planting organization, African agricultural technology foundation, AgriBora, Agribiz, Apollo Agriculture, One-acre fund, We-farm, East Africa Agrics, Media, Acre Africa	Markets, Distribution and processing of produce.
	Transporters	Transport services
	Producer and Marketing Organization, (Cooperatives, Common Interest Groups, producers,)	Market access, training, advocacy, Market linkages, mobilization, produce aggregation, lobbying, capacity building, and financial mobilization
	Banks & Microfinance Institutions.	Provision of Credit facilities Finances, Training.
	KALRO, KEFRI, KMFRI, ICIPE, ICRAF, ILRI, KICD, KIRDI, Universities, National Polytechnics, ATCs, TTIs, TVETs	They shall carry out research and develop appropriate technologies aligned to agroecological principles. Development of curricula. Implementation of the curriculum and offer Training.

Annex 8: Technical Working Group

S/No	Name
1	James Kaunda – Team Leader
2	Cynthia Nanyokia- Legal Counsel
3	Susan Makokha-Agriculture Directorate
4	Erick Muge- Livestock Directorate
5	Daisy Simiyu- Fisheries Directorate
6	Nassir Wekesa- Agriculture (TUNZA-FAO Project)
7	Electine wabwile- Agriculture Directorate
8	Erick Wangila-Irrigation Directorate
9	Stephen Sitati- Trade, Energy and Industrialization
10	Naomi Komol- NEMA
11	Lawrence Kwoba- CREADIS
12	Churchill Nyanja- Kimaeti Farmers Association
13	Emmanuel Ochola Matsaba - Food and Land Use Coalition (FOLU)
14	Fredrick Wotia –County Director Agriculture
15	Joel Imitira-FAO
16	Rebeccah Wanjiru- FAO

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