



INITIATIVE ON
Diversification in East
and Southern Africa

KENYA AGRICULTURAL POLICY PROFILE

Authors

Joshua Laichena and Elvis Kiptoo, KIPPRA

Shiluva Nkanyani and Sithembile Mwamakamba, FANRPAN

Inga Jacobs-Mata and Idil Ires, IWMI

Compiled for the Ukama Ustawi Kenya Policy Dialogue, organised by the International Water Management Institute (IWMI) Southern Africa, the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) South Africa, and the Kenya Institute for Public Policy Research and Analysis (KIPPRA) Kenya

October 2022



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The authors

Joshua Laichena, The Kenya Institute for Public Policy Research and Analysis

Elvis Kiptoo, The Kenya Institute for Public Policy Research and Analysis

Shiluva Nkanyani, Food, Agriculture and Natural Resources Policy Analysis Network

Sithembile Mwamakamba, Food, Agriculture and Natural Resources Policy Analysis Network

Inga Jacobs-Mata, International Water Management Institute

Idil Ires, International Water Management Institute

Acknowledgement

This work was carried out under the CGIAR Initiative on Diversification in East and Southern Africa, which is grateful for the support of CGIAR Trust Fund contributors (www.cgiar.org/funders).

The [CGIAR Initiative on Diversification in East and Southern Africa](#) aims to help smallholders transition to sustainably intensified, diversified, and derisked agri-food systems based on maize in 12 ESA countries. Specifically, it seeks to enable 50,000 value chain actors, including farmers (at least 40% women, 40% youth), to adopt climate-smart maize based intensification and diversification practices and one million to access digital agro-advisory services. Emphasizing the role of the private sector in driving such transformation, UU targets to support at least 30 start-ups and SMEs. For more information, contact: Dr. Idil Ires, IWMI Southern Africa, i.ires@cgiar.org

Citation

Laichena, J.; Kiptoo, E.; Nkanyani, S.; Mwamakamba, S.; Jacobs-Mata, I.; Ires, I. 2022. *Kenya agricultural policy profile*. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Initiative on Diversification in East and Southern Africa. 11p.

Disclaimer: This publication has been prepared as an output of the CGIAR Initiative on Diversification in East and Southern Africa, and has not been independently peer-reviewed. Responsibility for editing, proofreading, and layout, opinions expressed and any possible errors lies with the author and not the institutions involved.

1. Introduction

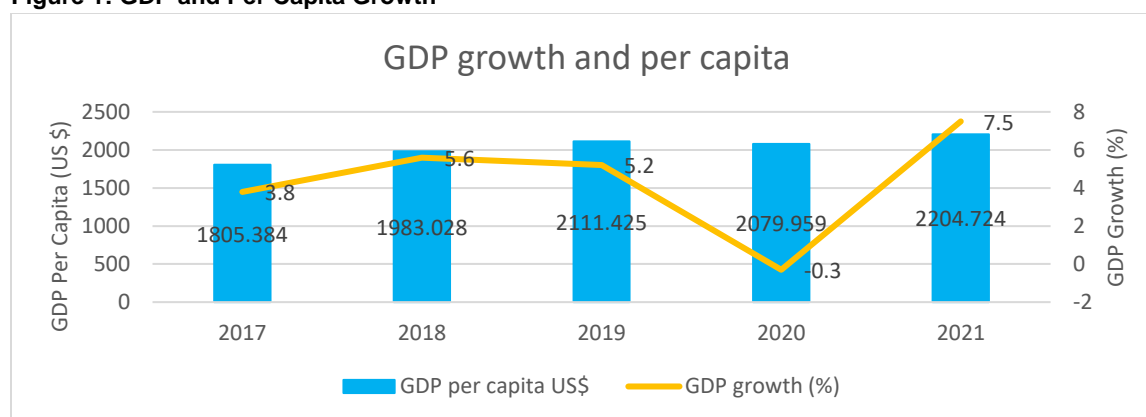
This paper aims to provide an overview of Kenyan policies related to agriculture and climate change adaptation and mitigation in preparation for the Kenya National Policy Dialogue on 12 November 2022 in Nairobi, Kenya. The Dialogue is a joint programme with CGIAR Initiative on Diversification of East and Southern Africa led by International Water Management Institute (IWMI) Southern Africa, the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) South Africa, and the Kenya Institute for Public Policy Research and Analysis (KIPPRA) Kenya. The paper provides an overview of the economic and administrative profile of the country and general overview of the country's economic status and agricultural and climate change policies that will be critically debated during the Dialogue.

2. Country Overview

Kenya's territory and its territorial waters occupies approximately 582,646 square kilometers. The area comprises 97.8 % dry land and 2.2 water surfaces (Ministry of Lands and Physical Planning, 2017). Only 20 % of the dry land area has a medium to high agricultural potential while the rest is arid and semi-arid lands. The 2019 national population and housing census places the Kenya population at 47,564,296 comprising of 23,548,056 males, 24,014,716 females and 1,524 intersex females. The inter-census growth between 2009 and 2019 is 2.2% (KNBS, 2019). The population is not evenly distributed across the country, in that 75% of the population live in medium to high potential agricultural areas which represent only 20% of the total land area in Kenya. The rest of the population is sparsely distributed in the vast arid and semi-arid land area (ASALs). The vulnerability to food insecurity is high among the households living in ASALs, necessitating government interventions from time to time.

The Kenyan Economy has been resilient despite the multiple shocks occasioned by Covid-19, drought and the global crisis resulting from the Ukraine-Russia war. The economy shrank by 0.3% in 2020 caused by restrictions imposed by the government with the aim of containing the Covid-19 pandemic. However, the economy rebounded in 2021 to grow at 7.5% and is expected to grow at 5.7 % in 2022 (see fig 1) following accelerated COVID-19 vaccinations and sound economic policies (AFDB, 2022). Following COVID-19 restrictions in 2021, economic activities reduced significantly in economy's major sectors of agriculture, manufacturing, construction, transport, education, information and communication, wholesale, and retail trade. The agriculture sector was further affected by lack of rainfall in three consecutive seasons in 2021 and the Russian-Ukraine conflict which led to increased cost of fuel and fertilizers.

Figure 1: GDP and Per Capita Growth



Source: Economic Survey 2022

2.1. Key agricultural indicators in Kenya

In this section, we look at the key economic indicators for Kenya that relate to the agricultural production. The agriculture sector's growth since 2016 has been fluctuating with the highest growth rate recorded in 2020 which surprisingly was during the Covid-19 period (Table 1). The fluctuation indicates the vulnerability of the agricultural sector to various shocks including climate change. Similarly, the production has also been fluctuating for the selected crops such as maize, horticultural exports, sugarcane and coffee.

Table 1: Agricultural production indicators

Indicators	Unit	2016	2017	2018	2019	2020	2021
Agriculture Growth Rate	%	1.4	-1.3	5.7	2.6	4.8	-
Maize (90Kgs)	Mn Bags	37.8	35.4	44.6	44.0	42.1	36.8
Tea Production	('000 Tonnes)	473.0	439.8	493.0	458.8	569.5	537.8
Coffee	('000 Tonnes)	46.1	38.7	41.4	45.0	36.9	37.5
Sugar Cane	('000 Tonnes)	7,151.7	4,751.6	5,262.2	4,606.1	6,894.4	7,657.5
Horticulture Exports	('000 Tonnes)	261.2	304.1	335.0	328.3	313.7	405.5
Milk Production	Mn. Litres	4,115.5	3,560.7	3,749.3	3,983.3	4,048.1	4,640.9
Recorded Milk Processed	Mn. Litres	648.2	591.4	652.3	685.9	682.3	801.9
Beef Production	MT.	702,091.0	373,338.1	546,853.7	598,416.4	563,636.2	527,190.9
Hides, Skins and Leather	Tonnes	24,433.6	25,375.8	24,363.0	17,437.8	9,709.6	4,595.5
Fish	MT.	147,726.0	135,900.0	148,921.0	149,320.0	149,677.8	-

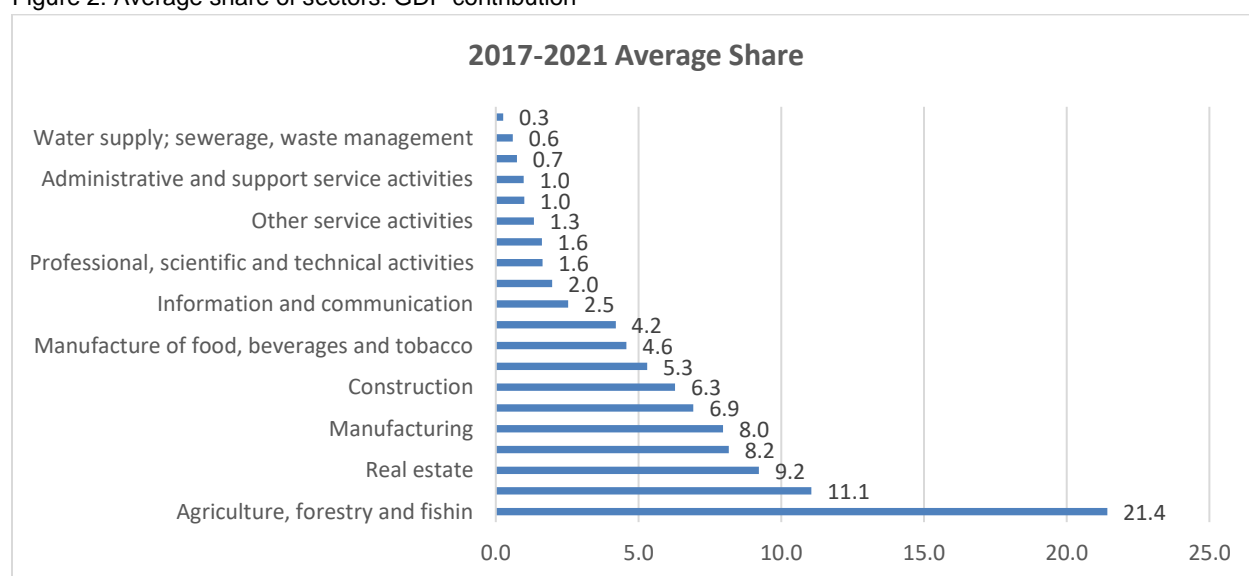
Source: Author Compilation from Various Economic Surveys

Beef production and hides, skins and leather have been declining over the years from a high of 24,000 thousand tonnes to 4,500 tonnes of hides, skins and leather; and for beef from 700,000 metric tonnes to about 500,000 metric tonnes. Despite the declining production of beef and the stagnation of milk production, the population has been increasing steadily, which, if the trend continues, indicates an impending food and nutrition security struggle facing the country.

Agricultural Production and Diversification Potential

The agriculture, forestry, and fishing sector has been the single largest contributor to the Gross Domestic Product and exports for Kenya. The sector contribution to the GDP (Gross Domestic Product) was 22.4% in 2021, 22.6% in 2020, 20.8 % in 2019, 20.3% in 2018 and 20.9 % in 2017. Specifically, crop production contributed 16.2%, 16.6%, 15.1%, 14.5%, and 15.2% to the GDP in 2021, 2020, 2019, 2018 and 2017 respectively while the percentage contribution to GDP of animal production was 3.6%, 3.6%, 3.5%, 3.7% and 3.7% in 2021, 2020, 2019, 2018 and 2017 respectively (KNBS, 2022). The average share contribution to GDP across sectors between 2017 and 2021 shows that agriculture is the leading sector with a 21.4% share of the GDP.

Figure 2: Average share of sectors: GDP contribution



Source: KNBS

The agriculture sector recorded mixed performances over the past few years. The sector grew at 6.1%, 2.8 % and 5.2% in 2018, 2019 and 2020 respectively (KNBS, 2022) and recorded a shrinkage of 0.1 % in 2021 which was occasioned by unfavourable weather conditions in various parts of the country, which resulted in reduced crop and livestock production.

The food security situation has been worsening in the Arid and Semi-Arid Lands (ASALs) in Kenya due to a delay of long rains coupled with the Covid-19 pandemic and the global crises such as the Russian-Ukraine war, as well as increasing global prices of fertilizers. An integrated Phase Classification for Acute Malnutrition (IPC AMN) conducted in July 2022 by the National Disaster Management Authority showed that nutrition security has deteriorated in most counties as compared to a similar period last year. The March-April-May 2022 long rains delayed on both the crop lands and the rangelands, and upon onset, the rains were poorly distributed in space and time. High, short-lived rainfall was recorded in late April but was inadequate to support crop production and forage recovery. As a result of unreliable long rains and high fertilizer prices driven by the Russia-Ukraine conflict, the acreage of crop area planted in 2022 is low, implying that maize production in 2022 will decline (NDMA, 2022).

The marginal areas of Kenya mainly depend on the October to December short rains to produce approximately 70% of its annual production. During the short season, the smallholder households plant maize, beans, green grams, cow peas, sorghum, and millet. In February 2022, production of all rainfed crops were significantly below the five-year averages in all the three marginal agricultural livelihood zone clusters of South-eastern, Coastal and Southern and Western agropastoral livelihood zone cluster due to short rainfall failure. This has led to reduced food availability and income from crop sales, and households engaged in consumption-based coping strategies such as reduced food portions, reduced meal frequency, and eating of less preferred food - all which result in worsening food security and nutrition (FEWS NET, 2022a).

The food security situation is further aggravated by high food prices which are constraining households' purchasing power. The high prices are driven by low production and the resulting high demand coupled with high inflation, supply constraints such as the recently enforced Tanzania export permits on maize crops. The rising food prices along with the drought have the most devastating impact on the welfare, nutrition and food security of the poor households as it pushes them further into poverty and weakens their ability to access food (FEWS NET, 2022b).

Maize is a staple food group in Kenya and plays a key role in ensuring the country is food secure. In the recent past, Kenya managed to achieve self-sufficiency in maize crop production. However, due to the recent weather shocks, maize production reduced from 42.1 million bags in 2020 to 36.7 million bags in 2021. Consequently, the value of marketed maize production decreased by 16.7% from Kes 8.2 billion in 2020 to Kes 6.9 billion in 2021 (KNBS, 2022).

Kenya has not exploited its diversification potential in agricultural production and is known to largely depend on two main cereal crops i.e., maize and rice as staple food crops. Overreliance on maize exposes Kenya to food insecurity. Achieving full agricultural diversification potential will improve and stabilise agriculture output, productivity and incomes and therefore improve adaptive capacity of households to shocks. For example, in ASALs areas, Climate Smart Agriculture (CSA) interventions can enable farmers to farm crops that are not conventionally produced in dry areas, such as fruits. Diversification boosts the nutrition security of households while also boosting their incomes. There are various enabling factors to achieve potential for diversification in agricultural production. These factors include provision for extension services, farmers' organisations, appropriate varieties, insurance, markets, local knowledge, neglected and underutilised crops.

Provision for extension services is particularly important in diversification because it enables transformation from specialised to diversified farm systems fostered by innovative agricultural systems (Schut, et al., 2014). However, with reduced public extension services in Kenya, farmer to farmer organisations offer an alternative way to scale up diversification as they act as channels for dissemination of knowledge and information (Mier, et al., 2018). There is also potential to diversify into neglected and underutilised crops and climate resilient crops which could offer a food security lifeline amidst the changing climatic conditions. Local knowledge on farming these climate resistant crops such as sorghum, millet, and cassava does exist.

Getting the right variety is also crucial for diversification; the appropriate varieties can be obtained in agricultural institutions such as the Kenya Agricultural and Livestock Research Organisation (KALRO). Most farmers may not be able to access the right varieties from these institutions. Risk aversion among farmers is also an obstacle to diversification of new crops, varieties, and new management practices. Agricultural insurance against yield losses mitigates the risks and encourages farmers to diversify (Bobojonov, Aw-Hassan, & Sommer, 2013). High value crops such as fruits and certain vegetable species offers the promise of increased farmers' income, however, market access may be limited to large scale farmers. To gain access to the markets, small-scale farmers require support from government, food transporters and processors (to strengthen post-harvest facilities).

3. Impact of Climate Change in Kenya

Kenya, cognizant of the negative impacts of climate change, has committed to contribute to adaptation and mitigation actions through the National Determined Contributions (NDCs) under the Paris agreement. Kenya has committed to abate Green Houses Gases emissions by 30% by 2030 relative to Business-as-Usual Scenario (BAUS) of 143mt CO₂eq. Kenya also seeks to ensure enhanced resilience to climate change as a way to achieving its development blueprint of Vision 2030 by mainstreaming climate change into Medium Term Plans (MTP) and by implementing adaptation actions (GOK, 2018).

Kenya is highly dependent on climate sensitive economic sectors like agriculture, tourism, wildlife, and energy. This makes Kenya very susceptible to the effects of climate change and it is already feeling climate change impacts through unpredictable rainfall patterns, rising temperatures and increased incidence of droughts. All these incidences have resulted in loss of lives, damaged infrastructure, reduced agricultural productivity, and loss of livelihoods. The economic impact of these climate related weather extremes. The accompanying costs are significant in Kenya. The extreme floods and drought events are estimated to create an economic liability of about 2- 2.8 % of Gross Domestic Product per annum (Mazza, Balm, & Caenegem, 2021). Rising temperatures and changes in annual and seasonal rainfall are felt in multiple sectors and are negatively affecting agricultural production, health status, water availability, energy use, infrastructure, biodiversity, and ecosystems.

Negative impacts of climate change threaten the achievement of Kenya's Vision 2030 and the Sustainable Development Goals. The Kenya Vision 2030 development blueprint aims to transform Kenya into a newly industrialised, middle-income country, providing a high quality of life to all its citizens by 2030 in a clean and secure environment. Some of the recent climate related occurrences that have had negative impacts on development include the current drought that has put Kenyans, especially in the North-eastern area, into food insecurity and lack of access to water. This has led to various government initiatives such as distribution of food relief to the affected households and rolling out the national livestock off-take programme. Unpredictable weather patterns have also been witnessed recently, with farmers bearing the losses due to crop failure occasioned by sporadic or delayed rainfall. Floodings have in the past caused loss of lives and displaced massive numbers of people out of their places of residence. For example, in 2018 floods caused loss of 183 lives and displaced 225,000 people (including 145,000 children) and the closure of several schools (GOK, 2018). The Arid and Semi-Arid Areas have borne the brunt of climate change, with desertification becoming more and more intense due to human activities.

4. The Status of Kenya's Agricultural and Food Policies

Kenya has developed various policies that are aimed at ensuring food, nutrition, and water security in the country. Kenya also has a policy framework to ensure climate change adaptation and mitigation plans. Agricultural policy of 2021 for example, provides a clear roadmap for the realisation of the Vision 2030 targets by identifying the current challenges, solutions and measures to ensure sustainability in agriculture. The National Climate Change Framework Policy, 2016 provides a framework to guide the development and implementation of specific interventions through regular and periodic Climate Change Action Plans. This policy framework led to the formulation of the Climate Change Act, 2016 which requires the government to develop action plans to guide the mainstreaming of climate change into sector functions. As a result, the National Climate Change Action Plan 2018-2022 was developed to help Kenya adapt to climate change and reduce greenhouse gas emissions. The plan outlines the priority areas to further Kenya's sustainable development by providing mechanisms and measures to achieve low carbon climate resilient development. On food security, Kenya has the National Food and Nutrition Security Policy, 2011 which provides a framework covering the multiple dimensions of food security and nutrition improvement. A summary of the policies for the agriculture and food security and climate change sectors are provided in table 2.

Table 2: Policies and Strategies for Agriculture and Food Security in Kenya

Policy name (official) Policy description	Responsible institution(s)	Main policy objective	Policy description
<i>Kenya Vision 2030</i>	<i>The National Treasury and Economic Planning</i>	<i>The main goal of Kenya Vision 2030 is to create “a globally competitive and prosperous country with a high quality of life by 2030”. It aims to transform Kenya into “a newly-industrialising, middle income country providing a high quality of life to all its citizens in a clean and secure environment”</i>	<i>The economic, social and political pillars of Kenya Vision 2030 are anchored on the foundations of macroeconomic stability; infrastructural development; Science, Technology and Innovation (STI); Land Reforms; Human Resources Development; Security and Public Sector Reforms.</i>
<i>Agriculture Sector Transformation and Growth Strategy</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>The main objective of the strategy is to achieve food and nutrition security, improve our farmer and local community incomes, lower the cost of food, and increase employment (particularly for women and youth).</i>	<i>The policy focuses on market development, building resilience, disaster risk management, research and innovation, sustainable agriculture, sustainable natural resource management</i>
<i>Agricultural Policy 2021</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>To improve food and nutrition security and maximise incomes through optimal utilisation of resources in the agricultural sector</i>	<i>Agricultural Policy 2021 provides a clear road map to the realisation of Vision 2030's agricultural goals and targets. It identifies current challenges in the agricultural sector and outlines suitable guidelines to address them. It provides measures towards sustainable use of natural resources, particularly land and water, which are expected to boost agricultural production and productivity.</i>
<i>Green Economy Strategy and Implementation Plan 2016</i>	<i>Ministry of Environment and Forestry</i>	<i>The main objective of the strategy is to guide both the national and county governments, the private sector, civil society and other actors to adopt development pathways with higher green growth, cleaner environment and higher productivity relative to the business-as-usual growth scenario.</i>	<i>The policy provides frameworks for inclusive and sustainable development, climate change adaptation and mitigation, sustainable natural resource management, social inclusion and sustainable livelihoods, market-based instruments for natural resource management, efficient use of water and energy sources</i>
<i>National Irrigation policy 2020 (Draft)</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>This policy is aimed at increasing efficient water use in irrigation and contribute to agricultural production and productivity. The National Irrigation Policy, which is currently at the draft level, is aimed at enhancing farmers' ownership through farmer managed irrigation and the National Agriculture Policy, with the main objective of commercialising the agriculture sector.</i>	<i>The National Irrigation Policy, which is currently at the draft level, is aimed at enhancing farmers' ownership through farmer managed irrigation, and the National Agriculture Policy has the main objective of commercialising the agriculture sector.</i>
<i>Kenya Agricultural Sector Extension Policy (KASEP) 2022</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>To increase efficiency and effectiveness of extension services for increased productivity of the entire food system and improve yields, income and welfare of value chain actors.</i>	<i>KASEP 2022 replaces NASEP 2012 which did not sufficiently consider the constitutional provisions underpinning devolution and the functions of the two levels of government as relates to agricultural extension</i>
<i>Kenya Climate Smart Agriculture Strategy 2016</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>The broad objective of the Kenya CSA Strategy (KCSAS) is to adapt to climate change, build resilience of agricultural systems while minimising emissions for enhanced food and nutritional security and improved livelihoods</i>	<i>The Policy provides structures for building resilience, climate change mitigation and adaptation, enabling institutional and policy environment, food and nutrition security, sustainable agriculture and sustainable NRM</i>
<i>National Agribusiness Strategy</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>The main objective of the NAS is to develop robust and inclusive agribusiness value chains across the continent by fostering an enabling policy and regulatory environment and increased mobilisation of private sector investment</i>	<i>Policy focuses on private sector investment in agribusiness: improve competitiveness and adaptiveness of the agribusiness sector, enhance institutional frameworks to enable all actors to utilise market opportunities</i>
<i>National Agricultural Mechanisation Policy 2021</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>To raise and sustain the level of agricultural mechanisation for</i>	<i>The Agricultural Mechanisation Policy aims to improve agricultural mechanisation to ensure the subsector measurably contributes to</i>

Policy name (official) Policy description	Responsible institution(s)	Main policy objective	Policy description
		increased productivity, incomes and food security	driving agriculture sector growth and development in Kenya
National Agricultural Research System Policy 2021 (Draft)	Ministry of Agriculture and Livestock Development	The policy seeks to develop a vibrant, coordinated, innovative and modern agricultural research system framework that will contribute to food and nutrition security and socio-economic development.	The policy focuses on an enabling environment for a vibrant agricultural research system, information and communication technology, knowledge management, outreach and technology dissemination and targeted partnership development framework.
National Agriculture Investment Plan (NAIP) - 2019-2024	Ministry of Agriculture and Livestock Development	The Plan is aimed at helping the country to realise the potential in agriculture to achieve food security, improve farmer and local community incomes, lower the cost of food, and increase employment.	Policy provides environment for increases in small-scale farmer incomes, increases in agricultural GDP and value addition, reduction in food-insecure population and a reduction in the cost of food, investment prioritisation
National Climate Change Framework Policy	Ministry of Environment and Forestry	The goal of this framework Policy is to enhance adaptive capacity and resilience to climate change and promote low carbon development for the sustainable development of Kenya.	National Climate Change Framework Policy designed to provide a framework to guide the development and implementation of specific, detailed and costed climate change interventions through regular and periodic Climate Change Action Plans
National Energy Policy	Ministry of Energy and Petroleum	The overall objective of this Energy Policy is to ensure affordable, competitive, sustainable, and reliable supply of energy at the lowest cost to achieve the national and county development needs, while protecting and conserving the environment for inter-generational benefits	The policy outlines structures that ensure affordable, efficient, competitive, sustainable, and reliable supply of energy; research, development and dissemination of efficient technologies; a capacity building enabling environment for investment in energy sector
National Environment Policy, 2013	Ministry of Environment and Forestry	Provide a framework for an integrated approach to planning and sustainable management of Kenya's environment and natural resources. Strengthen the legal and institutional framework for good governance, effective coordination and management of the environment and natural resources	The policy gives the framework to guide the country's efforts in addressing the ever-growing environmental issues and challenges such as environmental governance, loss of biodiversity, valuation of environmental and natural resources, rehabilitation and restoration of environmentally degraded areas, urbanisation, waste management and pollution and climate change, among others
National Food and Nutrition Security Policy, 2011	Ministry of Agriculture and Livestock Development	The Policy focuses on agricultural production and productivity, food and nutrition security, building resilience, disaster risk management, food safety and quality	The new Food and Nutrition Security Policy (FNSP) provides an overarching framework covering the multiple dimensions of food security and nutrition improvement. It has been purposefully developed to add value and create synergy to existing sectoral and other initiatives of government and its partners.
National Gender Policy	Ministry of Public Service, Gender and Affirmative Action	This Policy aims at achieving equality of opportunity and outcomes with respect to access to and control of national and county resources and services; and equality of treatment that meets the specific and distinct needs of different categories of women and men.	The policy focuses on mainstreaming of gender issues in planning, promoting equity and equality, capacity building, research and information generation with regards to gender issues
National Land Use Policy	Ministry of Land, Public Works, Housing and Urban Development	The overall goal of the Policy is to provide a legal, administrative, institutional and technological framework for optimal utilisation and productivity of land related resources in a sustainable and desirable manner at national, county and community levels	The policy covers land use planning and management, land use information management systems, equitable utilisation of resources, coordination and institutional linkages and collaborations
National Policy for Disaster Management in Kenya.	Ministry of Environment and Forestry	The Policy aims at the establishment and strengthening of disaster management institutions, partnerships, networking and mainstreaming disaster risk reduction in the development process in Kenya; to strengthen the resilience of vulnerable groups to cope with potential disasters	The policy focuses on the enhancement of DRM planning, stakeholder engagement and partnerships, mainstreaming DRM and climate change in development planning and coordination

Policy name (official) Policy description	Responsible institution(s)	Main policy objective	Policy description
<i>National Policy on Climate Finance</i>	<i>Ministry of Environment and Forestry</i>	<i>The finance strategy will focus on enhancing the role of key financiers involved in both large- and small-scale financing, including commercial and development aspects</i>	<i>It establishes policy and an institutional framework for climate finance and sustainable development, facilitates climate actions and responses, as well as resource mobilisation</i>
<i>National Water Master Plan 2030</i>	<i>Ministry of Water, Sanitation, and Irrigation</i>	<i>The Plan identifies and makes planning and management projections for six water use categories, namely domestic, industrial, irrigation, livestock, wildlife, and inland fisheries.</i>	<i>The policy focuses on sustainable water resource management, ecological conservation, scaling water resource management and development technologies, research and knowledge on water resources, irrigation development, disaster risk management, research, capacity development, partnerships and collaborations on environmental management,</i>
<i>Science, Technology and Innovation Policy and Strategy 2018-2022</i>	<i>Ministry of Information, Communication, and the Digital Economy</i>	<i>The Policy objectives are improving agricultural research policy frameworks, harmonising, and providing direction to national research for sustainable growth</i>	<i>The National STI Strategy aims to facilitate the transformation of the economy from factor-based to knowledge-based</i>
<i>Strategic Plan for Agricultural and Rural Statistics (SPARS-Kenya) 2016</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>The Plan is a national cross-sectoral plan with the objective of the establishment of an integrated system for quality agricultural and rural statistics.</i>	<i>The policy reviews the legal frameworks for research, to develop and improve physical, statistical, and modern ICT infrastructure, strengthen human capacity and enhance statistical operations across the agricultural and rural statistics system, address agricultural statistics, data gaps and resource mobilisation for research</i>
<i>The Livestock Policy, 2020</i>	<i>Ministry of Agriculture and Livestock Development</i>	<i>To utilise livestock resources for food and nutrition security and improved livelihoods, while safeguarding the environment.</i>	<i>The Policy is a review of Livestock Policy 2008 to align with the constitution of Kenya (2010) on the devolved system of government. It aims at transforming livestock production from subsistence to commercialised undertakings by applying modern technologies acquired through research and innovations.</i>
<i>Youth Agribusiness Strategy</i>	<i>Ministry of Youth Affairs, Sports, and the Arts</i>	<i>To transform the mindset and perceptions of the youth towards agribusiness; equip youth with appropriate agribusiness skills, knowledge, and information; enhance access to affordable and youth-friendly financial services for agripreneurship; enhance access and sustainable use of land for the youth</i>	<i>Policy provides framework for equipping the youth with agribusiness skills and knowledge, improving financial access for agribusiness, sustainable use and access to land, sustainable agriculture and value addition, and inclusive green jobs</i>

5. Policy Development and Formulation Process

Public policymaking processes in Kenya start with identification and definition of a policy problem or question. The identification of the policy problem can be done by the Ministries, Departments or Agencies (MDAs), the presidency, Cabinet, Parliament, academia, think tanks, citizens, or civil society organisations.

The second stage involves setting the agenda, where the problem and its solutions is brought to the attention of the government. The problems and solutions are filtered out to ensure only pertinent issues come to the attention of the government officials. Once the agenda is set, drafting of the policy begins.

The third stage involves designing of the policy through the development of an effective course of action to reach policy goals through specific projects, programmes, or activities. Policy analysis is conducted to identify the causes of the problem, policy choices that makes sense, and ways the government can act. Planning is also done at this stage through setting of goals, developing strategies, outlining implementation arrangement and allocation of resources to achieve goals. The draft policy is shared widely to ensure there is public participation with stakeholders. Once stakeholders' input is incorporated, MDAs concerned prepare a policy document.

The fourth step of the policy formulation is the review and approval by the Cabinet, or the County Executive. Review of the final policy document is done to ensure proper policy analysis has been conducted, to ensure different approaches have been identified, and the best options to address the situation is available. The fifth stage involves parliamentary or the county assembly approval. The policy document is published and tabled in the house and subjected to the relevant house committee for scrutiny and consideration, and it may be approved with or without amendments. The

house committee may seek the views of the executive or further clarifications. After the approval by the parliament or the county assembly, the bill is submitted to the president or the county governor by the speakers of the house for formal endorsements through signature and affixation of the national seal or county seal respectively. If the policy is signed, it is published as white paper and circulated by the executive to keep the public informed of the effects of the policy. If it is determined that a new law is necessary to achieve the objectives of the policy, the concerned MDAs will draft the bill, which will be tabled in the house as a legislative proposal.

6. Key Issues around the country's Agricultural Policies

Agricultural Policies are formulated to achieve key issues which include improving agricultural productivity and incomes of small-scale farmers amidst declining agricultural performance, encouraging diversification and value addition with the main aim of reducing vulnerability, and encouraging transition from subsistence farming to commercial farming. Most of the policies are also aimed at enhancing food and nutrition security and therefore reducing the rates of malnutrition and the number of those suffering from hunger. With the onset of climate change that is now threatening the performance of agricultural sector, agricultural policies have also been tailored to ensure there is environmental sustainability in all agricultural operations. Several agricultural policies developed pre-2010 have now been reviewed to ensure they align with the provisions of the Constitution of Kenya of 2010 on devolutions of certain functions to the county governments.

The issues that are recurring at a country level in relation to agriculture are: The appropriateness of the policies to respond to emerging agricultural issues such as increased variability in weather patterns and effects of climate change; Implementation of the already existing policies; Strategies to address food insecurity including adaptation of GMOs; Change in government regimes and continuity of policy focus and implementation as well as funding for the agriculture sector.

7. Implication for Policy

This paper recommends some policy considerations that could help transform agricultural sector in Kenya. Kenya mainly relies on rain-fed agriculture, which has proved unreliable amidst the climate change occurrences. The country could explore ways and means of tapping on innovations such as water harvesting and dam construction to harvest water for domestic use and for irrigation. To help improve farmers' incomes, there should be a clear policy that aims at supporting farmers to add value to their produce. Currently most small-scale farmers have low incomes due to the low prices their raw agricultural produce fetch at the markets. To access the lucrative export market, the government needs to consider training of farmers on the standard requirements and how to meet requirements for their produce to qualify for exports. Climate change has become a threat to traditional ways of farming, therefore, farmers should be trained and supported to adopt smart water management technologies. Farmers' organisations have also been found to be a very effective way of technology transfer through farmer-to-farmer learning. The government can support the formation of strong farmers' organisations to aid in technology transfer. With climate change, most of the crops are now performing poorly in terms of yield. To cope with this, agricultural research institutions should be well funded to ensure they conduct research on and develop climate resilient and heat tolerant varieties of crops.

8. References

- AFDB. (2022, July 5). *Kenya: African Development Bank approves €89 million loan to bolster economic recovery*. Retrieved from African Development Bank: <https://www.afdb.org/en/news-and-events/press-releases/kenya-african-development-bank-approves-eu89-million-loan-bolster-economic-recovery-53045#:~:text=Growth%20in%20gross%20domestic%20product,5.7%25%20in%202022%2D2023>.
- Bobojonov, I., Aw-Hassan, A., & Sommer, R. (2013). Index-based insurance for climate risk management and rural development in Syria. *Climate Development*, 6, 166–178.
- FEWS NET. (2022a). *Food Security Outlook: Widespread Crisis (IPC Phase 3) outcomes following third consecutive below-average season*. Nairobi: Famine Early Warning System Network.
- FEWS NET. (2022b). *Kenya Food Security Outlook June 2022- January 2023*. Nairobi: Famine Early Warning System Network.
- GOK. (2018). *National Climate Change Action Plan 2018-2022*. Nairobi: Ministry of Environment and Forestry.
- KIPPRA. (Undated). *Public Policy Formulation Process in Kenya*. KIPPRA.
- KNBS. (2019). *2019 Kenya Population and Housing Census Reports*. Nairobi: Kenya National Bureau of Statistics.
- KNBS. (2022). *Kenya Economic Survey 2022*. Nairobi: KNBS.
- Mazza, F., Balm, A., & Caenegem, H. V. (2021, March 26). *The Landscape of Climate Finance in Kenya*. Retrieved from Climate Policy Initiative: [https://www.climatepolicyinitiative.org/publication/the-landscape-of-climate-finance-in-kenya/#:~:text=Kenya%20is%20highly%20vulnerable%20to,product%20\(GDP\)%20every%20year](https://www.climatepolicyinitiative.org/publication/the-landscape-of-climate-finance-in-kenya/#:~:text=Kenya%20is%20highly%20vulnerable%20to,product%20(GDP)%20every%20year).
- Mier, M., T, G. C., Giraldo, O. F., Aldasoro, M., Morales, H., & Ferguson, G. B. (2018). Bringing agroecology to scale: key drivers and emblematic cases. *Agroecol. Sustain. Food Syst.*, 42, 637–665.
- Ministry of Lands and Physical Planning. (2017). *Sessional Paper No. 1 of 2017 on National Land Use Policy*. Nairobi: Ministry of Lands and Physical Planning.
- National Treasury and Planning. (2022). *Budget Statement Financial Year 2022/2023*. Nairobi: National Treasury and Planning.
- NDMA. (2022). *IPC Acute Food Insecurity Analysis March- June 2022*. Nairobi: National Disaster Management Authority.
- Schut, M., Klerkx, L., Bastiaans, L., Rodenberg, J., Kayeke, J., Hinnou, L. C., . . . Ast, A. V. (2014). Rapid Appraisal of Agricultural Innovation Systems (part I). A diagnostic tool for integrated analysis of complex problems and innovation capacity. *Agric. Syst*, 132, 1–11.