

Info Note

Review of policies and frameworks on climate change, agriculture, food and nutrition security in Kenya

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Key messages

- To strengthen national actions on climate change adaptation and mitigation, the government developed a National Climate Change Response Strategy (2010), and a National Climate Change Action Plan (2013).
- Kenya is making great efforts in integrating climate change adaptation and mitigation into agriculture, food and nutrition security policies and frameworks.
- In particular, a Climate-Smart Agriculture (CSA) Strategy (2017–2026) and CSA Implementation Framework (2018–2027) have been developed to promote climate-resilient and low-carbon sustainable agriculture and effectively ensure food and nutrition security.
- The devolved system of government through the County Integrated Development Plans (CIDP) provides a mechanism to integrate climate change, agriculture, food and nutrition security policy and legislative instruments at local scale.
- International, regional and national research organizations need to work closely with national governments to support mainstreaming of climate change into agriculture, food security and nutrition policies and frameworks.

Introduction

In Kenya, agriculture is a key driver of economic growth and social development. The agriculture sector directly contributes about 28% of Kenya's gross domestic product (GDP), and accounts for 65% of the total export earnings. The crop and livestock sub-sectors contribute approximately 78% and 20% to the agricultural GDP, respectively (CIAT 2015). Agriculture employs over 70% of the rural population and supports the livelihoods of more than 80% of the Kenyan population through employment, income, and food security needs (GoK

2010). The sector is large and complex, with diverse stakeholders made up of public, non-governmental and private actors.

Kenya's agriculture and environment face challenges that include ecosystem degradation, low levels of investments, and limited access to factors of production (inputs, credit, technologies), including markets that are fundamental for inclusive growth. The challenges are compounded by high input prices, weak human and institutional capacity such as poor infrastructure, difficulty in harnessing existing potential, traditional unsustainable production methods, regional instability, limited integration of value addition—hindering Kenya in reaching its full potential in achieving food self-sufficiency. Climate variability and change, including frequent and severe extreme weather events, pose additional risks and uncertainties to the country's agricultural production. Climate projections for Kenya show a rise of between 1°C and 4°C in average annual temperature for the period between late 2020s and 2100. This projected increase in temperature is expected to further affect agricultural production - increasing the vulnerability of the farming systems and weakening coping strategies and resilience of the resource poor smallholder farming communities of the country (GoK 2018). The economic cost of inaction to address the impacts of extreme weather events is projected to be about 3% of GDP per annum by 2030 rising to 5% by 2050 (GoK 2018).

The emerging challenges as a result of climate variability and change are expected to significantly affect agriculture-based livelihoods, and pose grave threats to food and nutrition security, resilience and adaptive capacity of Kenya's agricultural community and the country in general - bringing more uncertainty and enhancing vulnerability of the farmers through: i) direct and indirect negative impacts on yields, quality and price

of agricultural produce (both crop and livestock) along the value chains; ii) negative effects on the agroecosystem including increased run-off, soil erosion, loss of soil fertility and land degradation from frequent intense rains and associated floods; and iii) partial or total crop loss, including significant yield reduction from emerging crop pests, diseases and weeds, and from the frequent climate-induced non-traditional wildlife migrations (GoK 2012b).

Agriculture is not only impacted by climate change; it is also one of the main sources of greenhouse gas (GHG) emissions contributing to climate change. In Kenya, for example, the agricultural sector is the largest source of GHG emissions, accounting for 62.8% of the total national GHG emissions. Within agriculture, the livestock sub-sector accounts for about 92% of the sectors emissions (CIAT 2015, USAID 2017). Therefore, agriculture remains central to creating synergies in food and nutrition security, and adaptation and mitigation as well as poverty reduction in a changing climate. As a result, Kenya has been assessing a range of CSA practices and technological options such as soil, crop, water and livestock management and agroforestry, with an objective to mitigate about 4.2 MtCO_{2e} by 2030 (GoK 2017), while offering climate resilience and adaptation benefits of improved soil quality and water retention, and reduced erosion.

Kenya's agricultural systems need to build resilience and adapt to these emerging challenges to meet the increasing demand for food for the country's growing population while increasing production of export crops to generate foreign exchange, and where possible reducing GHG emissions from the sector. Climate-informed policies and institutional frameworks governing agriculture, food and nutrition security play a vital role in providing an enabling environment for building farmers resilience and adaptive capacity within the context of climate variability and change. This review aims to understand the current state of policies and frameworks related to climate change, agriculture, food and nutrition security, including their level of integration. Specific objectives include: i) evaluating the extent to which agriculture, food and nutrition security policies and frameworks integrate climate change adaptation and mitigation, and vice versa; ii) identifying strengths and gaps in each of the sectoral and national policies and strategies relevant to climate change, agriculture, food and nutrition security; and iii) identifying potential entry points for different actors including international, regional and national research organizations to strengthen their engagement at national and county levels to inform policy development and implementation for enhanced resilience in agriculture, and improved food and nutrition security.

Methods

The review used three complimentary approaches: desk review of relevant literature, publications, policy documents and frameworks on climate change, agriculture, food and nutrition security; stakeholder consultations, where 17 experts from relevant government ministries and agencies, and research organizations were interviewed based on their engagement and contribution to relevant policies and frameworks on climate change, agriculture, food and nutrition security; and relevance scoring of national and sector-specific policies, frameworks and programs regarding the extent to which they are designed to address climate change adaptation and mitigation, agriculture, food and nutrition security, with five weighted groups (on a scale of 1-5):

- Very high relevance (5) – climate change or agriculture, food and nutrition security are the primary objective;
- High relevance (4) – climate change or agriculture, food and nutrition security are a significant, but not primary objective;
- Moderate relevance (3) – climate change or agriculture, food and nutrition security objectives are not explicitly stated, but the activities promote climate change adaptation and mitigation actions, or agriculture, food and nutrition security;
- Little relevance (2) – climate change or agriculture, food and nutrition security are not the target objective, but activities have indirect adaptation and mitigation, or agriculture, food and nutrition security benefits;
- Very little relevance (1) – climate change or agriculture, food and nutrition security are not the target objective at all, but activities have minimal indirect links to climate actions, or agriculture, food and nutrition security.

The relevance scores were established for the different components of climate change (adaptation and mitigation), agriculture (productivity), food and nutrition security (availability, access and utilization). The weights were then aggregated to percentiles and grouped into three categories of relevance: high (>75%), medium (50–74%) and low (less than 49%).

A total of 40 policies and frameworks on climate change, agriculture, food and nutrition security were reviewed, including establishing the extent of their integration. The policies and frameworks reviewed included the Green Economy and Strategy Implementation Plan (2016–2020), National Communications submitted to the United Nations Framework Convention on Climate Change (UNFCCC), Nationally Determined Contributions (NDCs), National Climate Change Response Strategy (2012),

National Climate Change Action Plan (2012), National Adaptation Plan (2015–2030), Agriculture Sector Development Strategy (2010–2020), National Climate Change Policy (2016), and the Food and Nutrition Policy (2011) among others. Other cross-cutting policies and frameworks were also reviewed, focusing on the extent to which they integrate climate change, agriculture, food and nutrition security as per the set criteria. These included the Kenya Vision 2030, which had the highest weighted relevance score (74%), followed by the Threshold 21 (T21) (66.7%), Economic Recovery Strategy for Wealth and Employment Creation (2004) (62%), Land Policy (2008) (53%) and Environmental Management and Coordination Act (1999) (39%) in descending order.

Integration of climate change into agriculture, food and nutrition security policies and frameworks

Kenya has made great efforts in mainstreaming climate change adaptation and mitigation into agriculture, food and nutrition security policies and frameworks. Table 1 shows the policies and frameworks on agriculture, food and nutrition security reviewed, including the extent to which they integrate climate change adaptation and mitigation.

Table 1. Integration of climate change into agriculture, food and nutrition security policies and frameworks

Agriculture, food and nutrition security policies and frameworks	Climate change			Weighted score (%)
	Adaptation	Mitigation		
Kenya Climate Smart Agriculture Implementation Framework (2018–2027)	5.0	4.5		95
Kenya Climate Smart Agriculture Strategy (2017–2026)	5.0	4.2		92
National Livestock Policy (2015)	4.3	3.6		79
Agriculture, Livestock and Food Authority Bill (2012)	4.3	1.8		61
Agriculture Sector Development Strategy (2010-2020)	3.2	2.1		53
National Agricultural Sector Extension Policy (2012)	2.3	0.0		46
National Food and Nutrition Policy (2011)	3.4	0.0		34
Strategy for Revitalizing Agriculture (2004-2014)	3.1	0.0		31
National Agricultural Research System Policy (2012)	3.1	0.0		31
National Oceans and Fisheries Policy (2008)	3.1	0.0		31
Average score				55.3

The average weighted relevance score ranged from 31% to 95%. The Kenya Climate-Smart Agriculture Implementation Framework (KCSAIF) and Kenya Climate-Smart Agriculture Strategy (KCSAS) had the highest weighted scores, implying a very high level of integration of climate change adaptation and mitigation. However, the Strategy for Revitalizing Agriculture (SRA), National Agricultural Research System Policy (2012) and National Oceans and Fisheries Policy (2008) had the lowest weighted relevance scores, with no integration of mitigation. For many African countries, mitigation is often considered as an adaptation co-benefit given that adaptation is the priority and its actions that have mitigation benefits are highly prioritized.

Integration of agriculture, food and nutrition security into climate change policies and frameworks

The review also examined the extent to which national climate change policies and frameworks integrate agriculture, food and nutrition. The weighted scores were relatively high, ranging from 66% for the Kenya National Climate Change Response Strategy (2012) to 77% for the Climate Change Act (2016) (Table 2). Kenya has prioritized agricultural productivity and food availability in its climate change frameworks. Similar to a number of countries in Sub-Saharan Africa, agricultural productivity was the most integrated, followed by food availability, access and utilization in descending order.

Table 2. Integration of agriculture, food and nutrition security into climate change policies and frameworks

Climate change policies and frameworks	Agriculture, food and nutrition security					Weighted score (%)
	Productivity	Availability	Access	Utilization		
Climate Change Act (2016)	5.0	3.3	3.9	3.2		77.0
National Climate Change Framework Policy (2016)	4.0	3.7	3.2	3.1		70.0
National Climate Change Action Plan (2012)	3.9	3.3	3.1	3.3		68.0
National Adaptation Plan (2016)	4.4	2.9	2.9	3.1		67.0
Kenya National Climate Change Response Strategy (2012)	3.8	3.4	3.4	2.6		66.0
Average score						69.3

With the absence of harmonized or standardized tools to measure the extent of integration, the level of integration of the policies and frameworks are based on the opinion of the interviewer and respondents and may be subject to bias. Therefore, there is a need to develop a monitoring and evaluation tool to measure progress on integration of

climate change, agriculture, food and nutrition security policies, strategies, and frameworks across scales. In particular, the devolved governments through the CIDP provide a mechanism to integrate climate change, agriculture, food and nutrition security policy and legislative instruments at local scales. Already, some counties in Kenya are in the process of cascading national climate change, agriculture and food nutrition security policies and frameworks into their development plans and budgeting. Examples include Makueni, Wajir and Kitui counties that have put in place legislation to integrate climate change into their development plans and budgeting.

In addition, the review examined the extent to which projects and programs on agriculture, food and nutrition security integrate climate change adaptation and mitigation, and vice versa. Of the 30 projects and programs evaluated, 20% had a high weighted score (>75%), with the majority (70%) having a medium weighted score and 10% having a low weighted score (Table 3).

Institutional landscape for climate change, agriculture, food and nutrition security

Climate change adaptation and mitigation is increasingly being undertaken by several institutions across scales (global, regional, national and meso-levels). Some of the global and regional initiatives on climate change and agriculture relevant to Kenya include the UNFCCC and the Comprehensive African Agriculture Development Programme (CAADP) 2003. At the national level, several institutions cut across climate change adaptation and mitigation and agriculture, food and nutrition security. These include the National Environment Management Authority (NEMA) and the Ministry of Finance, Planning and Development. At the national level, Kenya has established a Climate Change Directorate (within the Ministry of Environment and Forestry) as the lead government agency on national climate change plans and actions and serves as the national knowledge and information management center for collating, verifying, refining, and disseminating knowledge and information on climate change. This includes climate change focal points for the different sectors to integrate and coordinate climate change issues. The review shows that most of the national institutions are focused on enhancing agricultural productivity, food and nutrition security and promoting climate change adaptation, with limited focus on mitigation (adaptation co-benefits). It is anticipated that similar structures will be replicated at the county level. The review shows institutional overlaps on the focal areas of interventions, with limited mechanisms for monitoring and evaluation frameworks to monitor progress.

Table 3. Integration of climate change into agriculture and food security programs and projects and vice versa

Programs and projects	Weighted score (%)
Njaa marufuku Kenya	
Kenya Cereal Enhancement Programme - Climate Resilient Agricultural Livelihood (2017)	
Agriculture sector support development programme, Resilience and Economic Growth in Arid Lands - Improving Resilience	High (>75%)
Economic Stimulus Programme (ESP) in Agriculture Sector	
Dairy Heifer Project	
Increasing Smallholder Productivity and Profitability Project (ISPP)	
Kenya Agricultural Biotechnology Support Programme	
Kenya Climate Smart Agriculture Project	
National Accelerated Agriculture Inputs Programme	
Kenya Agro-dealer Strengthening Programme,	
Low Emission and Climate Resilient Development	
Technical assistance for Kenya Small-Scale Irrigation and Value Addition Project	
Finance for Innovation and Climate Change Fund	
National Farmers Information Service	
National Accelerated Agricultural inputs access programme	Medium (50-74%)
Enhancing Agricultural Productivity Project	
Integration Smallholder Dairy Specialization Programme (SDSP)	
Information on Nutrition, Food Security and Resilience for Decision making	
Improved food security and resilience for vulnerable communities in Kenya	
Strengthening Adaptation and Resilience to Climate Change in Kenya Plus (StARCK+)	
Kenya Adaptation to Climate Change in Arid and Semi-Arid Lands	
Kenya Agricultural Productivity and Agribusiness Project	
Promoting nutrition sensitive agricultural diversification to fight malnutrition and enhance youth employment opportunities in Eastern Africa	
Kenya Venture Facility	Low (<50%)
Youth Empowerment in Sustainable Agriculture	

Conclusions and opportunities for strengthening integration

The review demonstrates increasing efforts and awareness at the national level to strengthen the enabling environment for addressing climate change, and improving agricultural productivity, food and nutrition security through policies, strategies and implementation frameworks in a climate-smart manner. Despite the efforts, limited progress has been made in integrating these policies and strategies in planning, budgeting, implementation and monitoring processes. Similarly, there is a need for

deliberate and proactive integration of the existing frameworks and policies for climate change, agriculture, food and nutrition security. In addition, most of the policies and frameworks on agriculture, food and nutrition security focus more on agricultural productivity, food access and nutrition; but with less clarity on specific interventions on climate change adaptation and mitigation. Coupled with inadequate mechanisms for linkages and coordination between climate change and agriculture, food and nutrition stakeholders - this has resulted in overlaps and inefficiency in the implementation of programs and projects.

Strengthening institutional arrangements and coordination, therefore, may help consolidate and promote partnerships among the diverse independent efforts by the different government ministries and departments. Establishing effective multi-stakeholder platforms, a digital database and an information management system can help in the generation of baseline data for the development of indicators for monitoring and evaluating the integration of policies, frameworks and programs on climate change, agriculture, food and nutrition security.

There is opportunity for relevant national, regional and international research and knowledge generation organizations, including implementation agencies, to play a central role as anchor and/or supporting institution to coordinate the development of guidelines, tools and models for monitoring and evaluating the progress of integration of climate change, agriculture and food security. This is a major area where organizations such as CGIAR in general and CCAFS in particular, can capitalize on by establishing effective partnerships with the relevant national stakeholders and institutions and provide evidence and tools.

Further reading

- GoK (2010). The National Climate Change Response Strategy. Ministry of Environment, Water and Natural Resources, Nairobi, Kenya.
- GoK (2013). The National Climate Change Action Plan (NCCAP), 2013-2017. Ministry of Environment, Water and Natural Resources, Nairobi, Kenya.

- GoK (2015). Second National Communication to the UNFCCC, Ministry of Environment and Natural Resources, Nairobi Kenya.
- GoK (2016). Green Economy Strategy and Implementation Plan 2016 – 2030. Ministry of Environment, Water and Natural Resources, Nairobi, Kenya
- GoK (2017) Kenya Climate Smart Agriculture Strategy-2017-2026. Ministry of Agriculture, Livestock and Fisheries, Nairobi, Kenya
- CIAT. 2015. Climate-Smart Agriculture in Kenya. CSA Country Profiles for Africa, Asia, and Latin America and the Caribbean Series. Washington D.C.: The World Bank Group.
- USAID (2017). GHG Emissions Factsheet for Kenya, Nairobi.

The Info Note is part of a series of studies carried out to review policies and frameworks on climate change, agriculture, food and nutrition security across East Africa.

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