Info Note

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

Catherine Mungai, Dorothy Amwata, Maren Radeny, Casim Umba Tolo and Dawit Solomon

AUGUST 2020

Key messages

- Uganda's decentralization policy seeks to strengthen local governance by devolving service delivery, promoting participation and empowering local people, and provides opportunities for the integration of climate change into District-level Development Plans, including agriculture, food and nutrition security.
- Food and nutrition security are not extensively explored in Uganda, as evidenced by the few projects under implementation. There is great potential to explore the nexus between climate variability and change and agriculture, food and nutrition security.
- More funding should be channeled to the National Agricultural Research Organization (NARO) to strengthen its capacity to develop new technologies and practices for building resilience and climate change adaptation in agriculture, including dissemination and scaling up of climate-smart technologies and practices to communities.
- International research centers, and regional and national research networks can play a vital role in providing training to farming communities, agricultural extension service providers and to the private sector, especially on climate-smart agriculture (CSA) and associated improved agronomic practices and climate information systems to inform on-farm decision making.

Introduction

Uganda has a warm tropical climate, except for the mountainous areas which are much cooler. Although changes have been observed in recent years, the mean annual temperatures range from a minimum of 10°C-22°C to a maximum of 22°C-33°C. The average altitude for most of the country ranges from 800 to 1,500 m above sea level. Annual rainfall ranges from 1,000 to 1,500 mm for most of the country, with the Lake Victoria region and highland areas receiving over 2,000 mm. Rainfall amounts have decreased more recently, often becoming unpredictable and less evenly distributed. Agricultural production in Uganda is largely rainfed, thus variability in rainfall due to climate change has caused food shortages in several parts of the country.

A wide range of crops are cultivated and these include cereals such as maize, millet and sorghum; root crops such as cassava, sweet potatoes and Irish potatoes, bananas and pulses including beans and peas (UFNP 2003). Livestock production is also important and includes dairy and beef cattle, poultry, sheep, goats and pigs. The inland freshwater bodies also provide opportunity for fishery. Hence, the available foodstuffs from the diverse crops and livestock sources potentially offer opportunity for a balanced diet to Uganda's population.

Subsistence farmers using low-input and often unsustainable faming systems produce most of the food in Uganda (UFNP 2003), and the country still faces problems of malnutrition. There are also reports that indicate the existence of pockets of famine and hunger. For instance, nearly half of all households (46%) in Karamoja were food insecure in 2016 (Makerere University College of Health Sciences and WFP 2016). In addition, stunting for children under five years is still prevalent at 34% (IFPRI 2016). Efforts have been made to reduce micronutrient deficiencies, especially vitamin A, iron deficiency and anemia particularly among pregnant women (IFPRI 2016).

Uganda is facing climate variability and change more frequently than ever. This is observed through changing

temperature patterns—often linked to more frequent and longer periods of drought spells that lead to significant loss of livestock and food and nutrition insecurity. Floods, landslides, droughts and other extreme weather events are also increasing in frequency and intensity, posing additional risks to agriculture, food and nutrition security, livelihoods and resilience of rural farming communities.

Uganda's economy is particularly vulnerable to climate change given its heavy reliance on natural resources, with rainfed agriculture as the backbone of the economy. Prolonged and frequent droughts in many parts of the country, mainly the arid areas of the Northeast, have led to a significant decline in agricultural productivity and heavy reliance on food aid, and substantially affected the country's water resources and hydro-electric power production (NAPA 2007, AMCEN 2011, Uganda National Climate Change Policy 2015).

Crop failures and other negative impacts of climate change on agriculture affect food availability, accessibility and utilization, as well as the stability of food systems. Vulnerable populations (i.e. poor and marginalized, children, women and people with disabilities) are particularly poorly equipped to cope with the adverse impacts of climate change, due to low resilience and adaptive capacity (GOU 2015). Despite this, there is limited proactive national and sub-national response towards supporting demand-driven, participatory integrated community resilience building and climate change adaptation measures at scale (Zake and Sekate 2015). National and sub-national responses often tend to be less coordinated and reactive, when weather extremes and disasters such as floods, famine and drought occur, as in the case of Isingiro in 2016/2017, as well as during periodic pest outbreaks, such as army worm that frequently affects maize. At the national level, programs of action for climate change adaptation were developed in 2006 and approved in 2007, but implementation both at the national and grassroots level is still very slow.

Methods

The review used three complementary approaches: (i) desk review of relevant literature, publications, policy documents and frameworks on climate change, agriculture, food and nutrition security; (ii) stakeholder consultations, where 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 (iii) 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 and 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%).

About 25 policies and frameworks on climate change, agriculture, food and nutrition security were reviewed in Uganda, including establishing the extent of their integration. The policies and frameworks reviewed included the Second National Development Plan (NDP II) (2015/16–2019/20), National Agriculture Policy (2013), National Agricultural Extension Policy (2016), Agriculture Sector Strategic Plan, Agricultural Education and Skills Improvement Framework (AESIF) (2015–2025), Uganda National Climate Change Policy (2015), Uganda Food and Nutrition Policy (2003), and Food Nutrition Strategy among others.

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

Uganda has made great progress to integrate climate change adaptation and mitigation into agriculture, food and nutrition security policies and frameworks. Table 1 shows the weighted relevance ranges from 20% to 86%. Of the eight frameworks reviewed for agriculture, food and nutrition security, for example, about 43% had a high weighted relevance score (≥75%), while another 36% had a medium weighted relevance score (>49% to ≤74%). Similar to other countries in the region, adaptation actions are prioritized as compared to mitigation. The crosscutting frameworks such as the Constitution of the Republic

of Uganda, had a weighted score of 43% while NDP II had the highest weighted score of 87%.

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	
Agriculture Sector Strategic Plan	4.0	3.5	75
National Agricultural Extension Policy (2016)	4.0	3.5	75
Agriculture Sector Strategic Plan	4.0	3.5	75
National Agriculture Policy (2013)	2.5	3.0	55
Animal Breeding Act (2001)	4	0.0	40
Agricultural Education and Skills Improvement Framework (AESIF) (2015-2025)	1.5	1.5	30
Food and Nutrition Strategy	3	0.0	30
Uganda Food and Nutrition Policy (2003)	2	0.0	20
Average score			**50**

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 security. The weighted scores were relatively high ranging from 45% to 78% with an average of 67% (Table 2). Uganda has integrated agricultural productivity (90%) in its climate change policies, followed by food availability (76%) and access (67%) while utilization was the least integrated (47%).

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. Therefore, there is a need to develop monitoring and evaluation tools to measure progress on the integration of climate change, agriculture, food and nutrition security policies, strategies, and frameworks across scales.

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 18 projects and programs evaluated, none had a high weighted score of ≥ 75%. The majority (72%) had a low weighted score of ≤49% while only 28% had a weighted score of >49% to ≤74% (Table 3).

Climate change projects on the contrary had scores that indicate a much higher level of integration.

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				
	Productivity	Availability	Access	Utilization	Weighted score (%)
National Policy for Disaster Preparedness and Management (2010)	3.5	4.5	4.0	3.5	78
Uganda National Climate Change Policy (2015)	4.8	4.3	4.0	2.0	76
National Adaptation Programmes of Action	4.5	3.5	3.0	2.5	68
National Strategy and Action Plan to strengthen human resources and skills to advance green, low-emission and climate-resilient development in Uganda (2013-2022)	4.8	3.5	3.0	2.0	67
Uganda's Intended Nationally Determined Contribution (2015)	4.5	2.0	1.5	1.0	45
Average					**67**

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

Climate change adaptation and mitigation is increasingly being undertaken by several institutions across scales in Uganda. Some of the global and regional initiatives on climate change and agriculture relevant to Uganda include the United Nations Framework Convention on Climate Change (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 Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the Ministry of Finance, Planning and Economic Development and the Ministry of Water and Environment (Table 4). At the decentralized level in the districts, implementation of policies, legislation and strategies related to climate change is vested within the Natural Resources Department of the District Local Government. However, it is also important to stress that all departments are expected to ensure that climate change issues in their sectors are integrated into the District Development Plans.

Uganda has set up two committees on climate change, namely: i) the National Climate Change Policy Committee, chaired by the Prime Minister, to coordinate policy implementation and ensure information flow on resource allocation for the implementation of the policy, as well as bring together ministers from various government ministries at the national level; and ii) the National Climate Change Advisory Committee, chaired by the Minister of Water and Environment, which brings together technical representatives from various government departments at the national level, including representatives from the private sector, civil society, academia and district authorities.

This review illustrates 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 district level. The review also shows significant institutional overlap in the focus areas of interventions, with limited mechanisms for monitoring progress.

Table 3. Integration of climate change, agriculture, food and nutrition security into programs and projects

Programs and projects	Weighted score (%)
Drought Adaptation Project	
Agricultural Technology and Agribusiness Advisory Services Program	Medium (50-74%)
USAID agriculture programs	
Land Degradation Management Project	
Water for Production Project	
Agricultural Value Chain Development Programme (AVCP)	
Uganda Multi-Sectoral Food Security and Nutrition Project	
Agriculture Cluster Development Project (ACDP)	
Vector, Pests and Disease Control Project	
National Agricultural Advisory Services (NAADS)	
Indigenous Knowledge and Natural Resources Management Project	Low ≤49%
Agricultural Credit Facility (ACF)	
Community Agricultural Infrastructure Improvement Programme (CAIIP)	
Strengthening Meteorological Services Project	
Climate Change and Development Planning Project	
Strengthening Meteorological Services Project	
Climate Change and Development Planning Project	

Table 4. Institutions supporting implementation of climate change, agriculture and food security policies and frameworks in Uganda

National institutions	Action areas
Ministry of Energy and Minerals	Finance, climate change adaptation and mitigation, agriculture and capacity building
Ministry of Planning and Economic Development	Climate change adaptation and mitigation across sectors, including agriculture and financing
Ministry of Agriculture, Animal Industry and Fisheries	Climate change adaptation and mitigation, agriculture, food and nutrition security
Uganda Food and Nutrition Council	Adaptation, agriculture and capacity building
Ministry of Water and Environment	Mitigation, adaptation, capacity building and agriculture
Forestry Resource Research Institute	Adaptation, mitigation and agroforestry

Conclusions and opportunities for strengthening integration

Climate change, agriculture and food and nutrition security are key challenges to economic development in Uganda, as outlined in its Vision 2040. Several policies, strategies and frameworks on climate change, agriculture and food and nutrition security exist at the national level. However, their implementation and full operationalization both at national and sub-national levels remain a key challenge, with heavy reliance on donor funding for implementation, raising critical questions on sustainability.

Therefore, there is need to allocate resources to stimulate policy implementation during public budgeting processes at the national and district levels. In addition, there is a need to increase funding for research institutions such as NARO to strengthen their capacity to generate new technologies to support climate change adaptation in agriculture, food and nutrition security, including dissemination of technologies to user communities and support for policy implementation.

The integration of adaptation co-benefits into the efforts of most national institutions focused on increasing agricultural productivity, food and nutrition security and promoting climate change adaptation could enhance synergy with the country's efforts to develop sustainable and low-emissions agriculture and augment Uganda's climate change mitigation endeavor.

Climate change, agriculture and food security are interlinked, and therefore require deliberate efforts in coordination across scales. There is also a need for capacity building of leaders and communities to address climate change as an interdisciplinary issue at the national level.

Government, development partners and research organizations such as the CGIAR need to work together to empower communities in food and nutrition security in the context of a changing climate using community-based approaches. This includes enhancing capacity at the district level (local government) for greater participation in development and implementation.

Further reading

- GOU. 2003. The Republic of Uganda The Uganda Food and Nutrition Policy. Uganda.
- GOU. 2005. The Uganda National Food and Nutrition Strategy. Uganda.
- GOU. 2007. Uganda National Adaptation Plan for Action.
- GOU. 2015. Uganda National Climate Change Policy. The Republic of Uganda, Ministry of Water and Environment.
- International Food Policy Research Institute. 2016. Global nutrition report 2016: From promise to impact: Ending malnutrition by 2030.
- Zake J, Sekate M. 2015. Innovations and Climate Change Adaptation and Mitigation in Uganda; Policy and Practice Recommendations. PROLINOVA, Uganda.

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.

***Dorothy A. Amwata** (damwata@gmail.com) is a Senior Lecturer, Department of Agricultural Sciences, South Eastern Kenya University.*

***Catherine Mungai** (c.mungai@cgiar.org) is the Partnership and Policy Specialist of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa.*

***Casim Umba Tolo** (tolocas@must.ac.ug) is a Senior Lecturer, Department of Biology, Mbarara University of Science & Technology.*

***Maren Radeny** (m.radeny@cgiar.org) is the Science Officer of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa.*

***Dawit Solomon** (d.solomon@cgiar.org) is the Regional Program Leader of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa.*

About CCAFS Info Notes

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) brings together some of the world's best researchers in agricultural science, development research, climate science and Earth system science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. Visit us online at **https://ccafs.cgiar.org**.

CCAFS is led by the International Center for Tropical Agriculture (CIAT) and supported by: