THE REPUBLIC OF UGANDA

NATIONAL FOOD SECURITY ASSEMENT

JANUARY 2017




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ACRONYMS AND ABBREVIATIONS

CSA	Climate Smart Agriculture
DPO	District Production Officer
GoU	Government of Uganda
MAAIF	Ministry of Agriculture, Animal Industries and Fisheries
TWG	IPC Technical Working Group
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic Household Survey
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council of Science and Technology
UNDP	United Nations Development Programme
UNMA	Uganda National Meteorological Authority
USAID	United States Agency for International Development
USD	United States Dollar
WB	World Bank

FOREWORD

Drought is one of the most frequent types of disasters our country faces from time to time. Despite having the necessary conditions for food security, namely fertile soils and favorable climate for agriculture, a large population of our people fall victim to drought regularly. As part of my mandate and effort to solve the persistent food insecurity, a comprehensive five-year food insecurity eradication strategic plan is being developed that will reduce over reliance on rain-fed production. Government is embarking on small, medium and large scale irrigation schemes as well as enhancement of mechanized production.

This report provides an updated assessment of how many people in Uganda are affected by food insecurity, where these people are located, and how their social-economic status affects their ability to cope with the evolving acute food insecurity situation. The 2015/16 El Niño event seriously impacted several regions of the country, causing massive crop failures leading to little or no harvest, as well as substantial loss of cattle.

In order to help steer the country in its path to achieving vision 2040 and intermediate goal of becoming a middle income country by 2020, recommendations for urgent interventions as well as policy recommendations for the mid- and long-term food security strategy are specified in this report.

Dr. Ruhakana Rugunda

PRIME MINISTER

ACKNOWLEDGEMENT

The process to carry out this emergency food security assessment in Uganda started in December 2016 to January 2017. It was concluded with the production of the Uganda Emergency Food Security Assessment report. The Government of Uganda gratefully acknowledges the financial and technical support provided by The World Bank. In particular, our thanks to Diarietou Gaye, Uganda Country Director; Christina Malmberg-Calvo, Country Manager; Dina Umali-Deininger, Agriculture Global Practice Manager; Kevin Crockford, Lead Agricultural Expert, and Damalie Evalyne Nyanja. Francis Muraya, Senior DRM expert, and Luis Corrales, Senior Consultant, provided valuable advice during the assessment process and preparation of this report.

The Food Security Assessment process benefited from the political and technical guidance of Hon. Hilary Onek, Minister for Disaster Preparedness and Refugees, Hon. Musa Ecweru, Minister of State Disaster Preparedness and Refugees and Christine Guwatudde Kintu, Permanent Secretary in the Office of the Prime Minister. Data compilation and analysis was coordinated by a team from the Office of the Prime Minister led by Martin Owor, Rose Nakabugo, and Catherine Ahimbisibwe. The team enormously facilitated the assessment process until the end of report writing.

This report greatly benefited from invaluable contributions made by the Government Ministries, Departments, Agencies as well as development and humanitarian agencies, including The World Bank, WFP, UNDP, FAO, UNICEF and FEWSNET. The commitment demonstrated by District Production Officers and District Agricultural Officers to provide key information during the assessment and analysis cannot go without being mentioned. They kindly offered their time, and insight of the food security situation in the communities.

The technical guidance provided by Ministry of Agriculture, Animal-Industry and Fisheries through Hakuza Annuciata is appreciated. Critical guidance during the review and comments on this draft were provided by Brian Musaga and Stella Sengendo. The report also benefited from peer reviews of the IPC TWG members.

Further gratitude for continued support, suggestions, and insights is extended to some Government Ministries and agencies during the assessment, namely; Ministry of Health, National Planning Authority, and Uganda Bureau of Statistics.

EXECUTIVE SUMMARY

The 2015/16 El Niño event seriously impacted the Eastern, Central, and Western regions of Uganda. The region of Karamoja, including Teso, Lango, Acholi, Bukedi, West Nile, as well as parts of the districts along the Cattle Corridor reported massive crop failure, leading to little or no harvest, resulting in an evolving food crisis. The Government's food security Early Warning system initially indicated that about 25 percent of the Ugandan population was experiencing severe shortage of food as a result of delayed and short lived rainfall; signaling a potential further deterioration of the affected regions' food security situation.

By mid-November, the Cabinet sent out seven high level teams on a fact-finding and awareness-raising campaign to inform the public of the evolving food security situation. The team advised communities and local authorities about the need to implement sustainable preventive measures to optimize the use of food stocks and protect livelihoods, particularly those of households involved in agricultural activities. The Cabinet's fact-finding mission evidenced the need for carrying out a more systematic food security assessment and demanded that a report on the evolving food security situation be prepared and presented to the Cabinet. The Office of the Prime Minister took the lead in the preparation of the assessment.

In early December, 2016, the OPM's Permanent Secretary convened a meeting with specialized technical agencies and concerned international humanitarian and development partners, who met at the World Bank Offices, and included senior representatives of the World Bank, DFID, USAID, WFP, FAO, FEWSNET, and MAAIF. During the meeting, the parties agreed on a joint food security assessment under the coordination of OPM's Relief, Disaster Preparedness, and Management Department.

As requested by the Cabinet, the report provides an assessment of how many people in Uganda are currently affected by food insecurity, where these people are located, and how their socio-economic status affects their ability to cope with the evolving acute food insecurity situation. This report incorporates the findings of the latest Integrated Food Security Phase Classification (IPC) Acute Food Insecurity classification.

The IPC protocols have been adopted by the Government of Uganda as the main tool for informing and reporting on the status of chronic and acute food insecurity situations in the country. Accordingly, the consensus built around the IPC recommendations, the government and concerned partners will coordinate the emergency response and mitigation interventions. The IPC protocols consider key dimensions of food security: (i) availability, (ii) access and (iii) utilization of food evaluated at the present time.

The information collected, when combined with e.g. weather forecasts also allows to make projections under different scenarios on the stability of the core dimensions through time (see Box 1). Due to time and resource availability constraints to carry out a food security assessment at the household level, the joint assessment team agreed on a two-step assessment of acute food insecurity situation at the region level, based on data collected at the district level by the District Production Officers.

The main objective of the exercise was to update the Acute IPC food security classification for Uganda for the period January to March 2017. The IPC analysis was preceded by a nation-wide food security assessment coordinated by OPM's Department of Relief, Disaster Preparedness and Management. During the first step of the analysis the District Production Officers (DPOs) were provided with electronic templates and instructions on the type of information that would allow the creation of a reliable picture of the food security situation within their districts, as well as the time-frame for delivering the requested information. Eighty-four (84) out of 116 districts responded to the assessment exercise. The next step of the IPC analysis was conducted at a workshop held at Ridar Hotel, Mukono from 16th – 20th, January, 2017; and it was attended by participants from the IPC TWG, OPM, MAAIF, UN agencies and District Local Government representatives. The workshop was facilitated by the IPC TWG, MAAIF and OPM and funded by the World Bank.

The workshop successfully completed the preparation of an updated IPC food insecurity classification for the whole country at the region level. In addition, the background data and information collected as part of the IPC process provided insights on the underlying causes of food insecurity at the district level, as well as on the main coping strategies used by the affected populations throughout the country.

This report presents the findings of the joint assessment of food security in Uganda along with forecasts of food insecurity trends to March 2017, based on the best available information provided by relevant national and district level government agencies, including UBOS, MAAIF, UNMA, and the support of concerned international development and humanitarian agencies. The report delivers evidence-based recommendations for urgent interventions.

Based on the consensus built around the IPC findings, the assessment team developed the set of recommendations presented in this report. In addition, the report provides recommendations on key areas for policy intervention which can be leveraged in the medium- and long- term to accelerate the transformational process needed for achieving the country's goals on poverty reduction, emphasizing the critical role of sustained growth of the agricultural sector on food security outcomes.

The government and concerned partners have demonstrated their commitment to coordinate the emergency response and mitigation interventions, taking into consideration the improved understanding of the current acute food insecurity situation affecting the country, as summarized in this report.

By mid-November, the Cabinet sent out seven high level teams on a fact-finding and awareness-raising campaign to inform the public of the evolving food security situation

KEY FINDINGS AND RECOMMENDATIONS

- According to the latest IPC report prepared in January 2017, an estimated 10.9 million people in Uganda are experiencing an Acute Food Insecurity situation[1], of which 1.6 million are in a crisis situation (Table ES.1; Figure ES.1). Projections based on meteorological forecasts for the next several months, along with observed trends in market prices of key staples, indicate that the number of people at risk of becoming food insecure may reach 11.4 million by March 2017; of which 1.4 million may fall into Phase 3 (crisis situation) (Table ES.2).

- The IPC analysis estimated 69 percent of the total population in the country is minimally food insecure (IPC Phase 1). This population's food security situation is stable and has access to a variety of adequate food both from household stocks and the market. These households still have food stocks from the second harvest that are expected to last for the next 2-3 months and it is unlikely to be any food shortages for those that depend on market purchase. This proportion of the population has adequate income to purchase food from the markets. However, livestock production for this population is average due to declining pasture and water conditions as dry conditions persist. The population currently in IPC Phase 1 is expected to remain in the same phase though stress may increase just before the rains start.

- In addition, the analysis estimated that 26 percent of the total population in the country is facing stressed food insecurity (IPC Phase 2). This population has minimum adequate food consumption, employing insurance strategies and is unable to afford some essential non-food expenditures. All regions in the country have a stressed population with East Central having the highest population (at 1.88 million) followed by South Western (1.24 million), Teso (1.1 million) and West Nile (1.04 million).

- The prolonged dry spell due to the La Niña event coupled with increasing incidences of crop and livestock pests and diseases such as Cassava Brown Streak, Cassava Mosaic, Maize stalk borer, striga and Banana Bacterial Wilt considerably affected production reducing the availability and accessibility of food for this population. The low crop and livestock production negatively impacted household food stocks leading to increased reliance on markets for food. Increasing demand from external markets has induced food price increases, making it difficult for poor households to access food from the market.

- Deteriorating water and pasture conditions mainly in the cattle corridor have resulted in migrations of livestock keepers, reduction in livestock production and increased spread of livestock diseases. Livestock keepers have been reported to migrate from Karamoja to Lango, Acholi, Teso and Elgon competing for pasture and water.

- The overwhelming influx of refugees from South Sudan has increased demand for food and services in West Nile region.

- Moreover, 5 percent of the total population in the country was found to be in Crisis (IPC Phase 3) (Figure ES.2). This population has widening food consumption gaps with deteriorating dietary diversity and high malnutrition rates. They are found in Central 1 (0.58 million), Karamoja (0.12 million), Teso (0.2 million),

1. The IPC protocol classifies areas with Acute Food Insecurity into five phases: Minimal, Stressed, Crisis, Emergency and Famine. Each of these Phases has different implications for response objectives. Phase 1 areas are those with more than four in five households able to meet essential food and non-food needs without engaging in atypical, unsustainable strategies to access food and income, including any reliance on humanitarian assistance.

East Central (0.38 million) and South Western (0.31 million) regions. The affected population includes the poorest households with reduced food consumption score, low meal frequencies of up to one meal a day and low dietary diversity of less than three food groups. They have poor purchasing power as their incomes are low and no food stocks at household level. They are mainly coping through food assistance, remittances from relatives, begging, stealing food, wild food gathering and irreversible sale of productive assets to buy food. This population currently needs assistance to bridge the widening food consumption gaps and avert worsening malnutrition.

- Food security across the country is deteriorating. The current food insecurity situation, when compared with the last two IPC assessments of November 2015 and July 2016, respectively, shows an increase in the percentages of the country's population that are in Phase 2 (stress level of food insecurity) and Phase 3 (crisis level) (Figure ES.3).

- Food markets are still functioning, generally signaling adequate food availability, however a potential change of this situation is becoming a concern as several regions indicate food availability as a major limiting factor. Increases in food prices are causing distress in several regions, as food access by lower income households is being reduced due in part to higher prices (Table ES.4).

- Table ES.3 shows the projected IPC Phase Level trends within each region's populations; indicating whether food insecurity is improving, the same, or deteriorating from the baseline of January 2017.

Table ES.1 shows the number and percentage of each country regions' residents falling under the respective IPC Food Insecurity Phase Level.

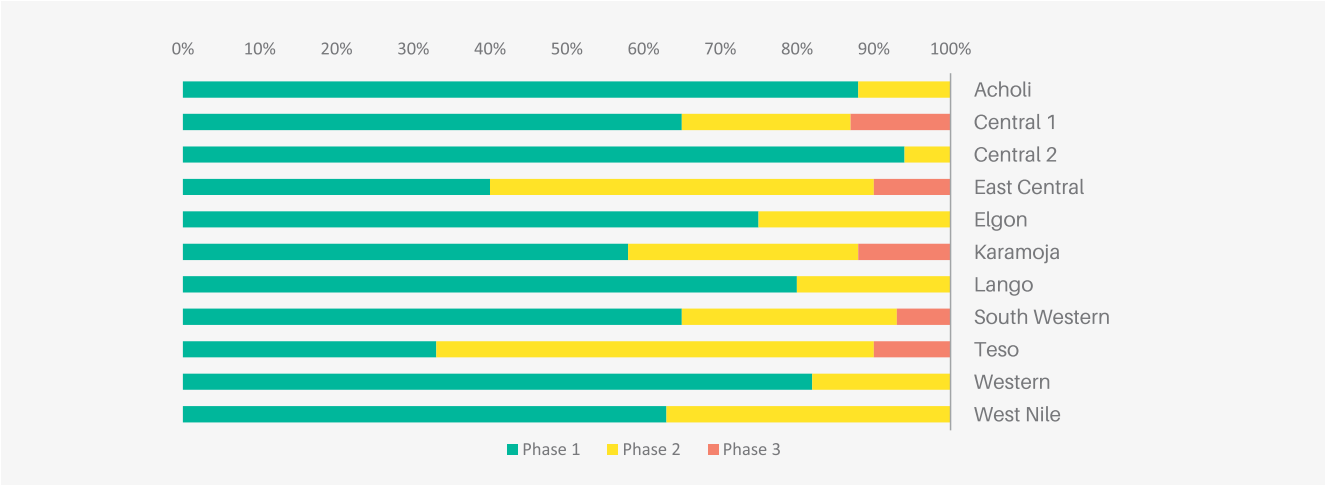
Table ES.1 Current Regions' Population in IPC Phases 1- 3 (as of January 2017)

Name of Region	UBOS pop_2016	Phase_ 1%	Phase _1 Minimal	Phase_ 2%	Phase2 Stressed	Phase 3%	Phase_3 Crisis
Acholi	1,580,300	88	1,390,664	12	189,636	0	0
Central 1	4,486,300	65	2,916,095	22	986,986	13	583,219
Central 2	4,052,300	94	3,809,162	6	243,138	0	0
E. Central	3,767,400	40	1,506,960	50	1,883,700	10	376,740
Elgon	3,850,700	75	2,888,025	25	962,675	0	0
Karamoja	1,025,800	58	594,964	30	307,740	12	123,096
Lango	2,174,600	80	1,739,680	20	434,920	0	0
S. Western	4,421,700	65	2,874,105	28	1,238,076	7	309,519
Teso	1,936,100	33	638,913	57	1,103,577	10	193,610
Western	4,926,500	82	4,039,730	18	886,770	0	0
West Nile	2,814,000	63	1,772,820	37	1,041,180	0	0
Total	**35,035,700**	**69**	**24,171,118**	**26**	9,278,398	**5**	1,586,184

Source: *TWG data analysis, January 2017*

Figure ES.1 shows the percentages of residents in each region according to their levels of Acute Food Insecurity as determined by the January 2017's IPC Analysis for Uganda.

Figure ES.1 Percentage of Regions Population in IPC Phases 1- 3 (as of Jan. 2017)



Source: *TWG data analysis, January 2017*

Figure ES.2 Percentage of Uganda's Population in IPC Phases 1- 3 (as of Jan. 2017)

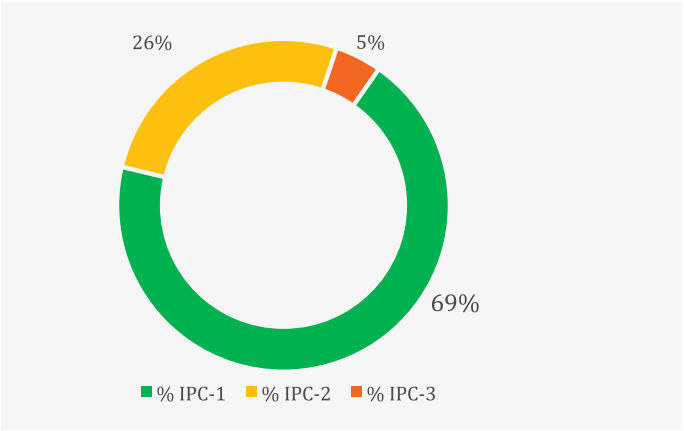


Figure ES.2 shows the percentage of the population according to the levels of Acute Food Insecurity as determined by the January 2017's IPC Analysis for Uganda.

Figure ES.3 shows the last two IPC assessment results, carried out during November 2015 and July 2016, respectively; along the latest assessment of January 2017; showing a deteriorating trend in the percentages of the Ugandan population falling under Phase 2 and 3.

Source: *TWG data analysis, January 2017*

Figure ES.3 Uganda's IPC Results for Nov. 2015; Jul. 2016; and Jan. 2017

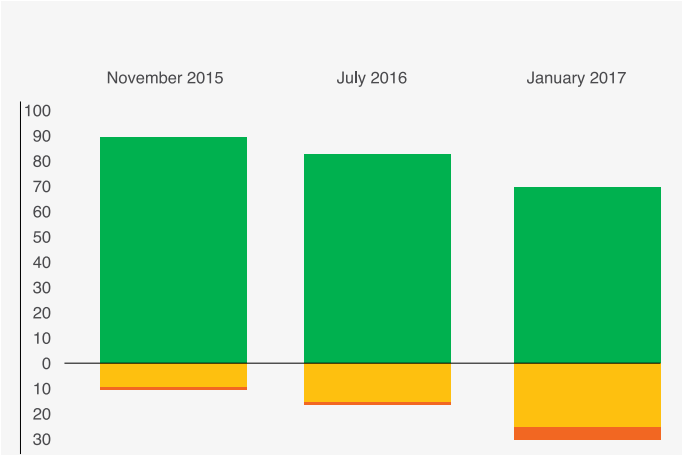


Table ES.2 shows the projected number and percentage of each country regions' residents falling under the respective IPC Food Insecurity Phase classification, according to the latest meteorological forecasts and analysis of food price trends across the country.

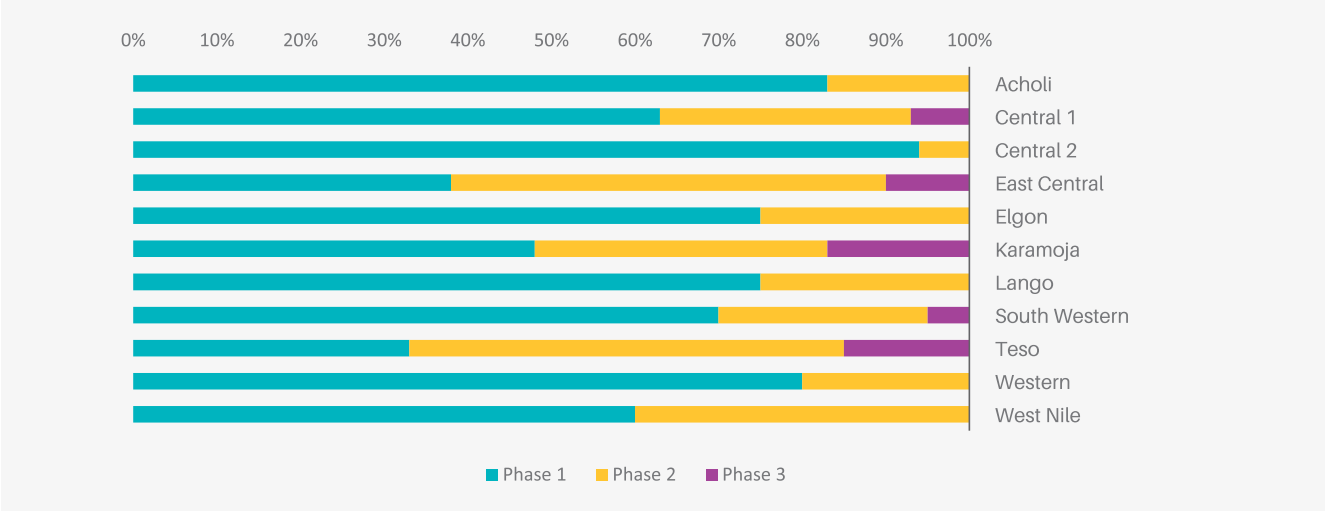
Table ES.2. Projected Regions' Population in IPC Phases 1- 3 (to March 2017)

Region	Population	Phase 1		Phase 2		Phase 3	
	UBOS2015	% IPC-1	Phase 1	% IPC-2	Phase 2	% IPC-3	Phase 3
Acholi	1,580,300	83.0	1,311,649	17.0	268,651	0	0
Central 1	4,486,300	63.0	2,826,369	30.0	1,345,890	7.0	314,041
Central 2	4,052,300	94.0	3,809,162	6.0	243,138	0	0
E. Central	3,767,400	38.0	1,431,612	52.0	1,959,048	10.0	376,740
Elgon	3,850,700	75.0	2,888,025	25.0	962,675	0	0
Karamoja	1,025,800	48.0	492,384	35.0	359,030	17.0	174,386
Lango	2,174,600	75.0	1,630,950	25.0	543,650	0.	0
S. Western	4,421,700	70.0	3,095,190	25.0	1,105,425	5.0	221,085
Teso	1,936,100	33.0	638,913	52.0	1,006,772	15.0	290,415
Western	4,926,500	80.0	3,941,200	20.0	985,300	0.	0
West Nile	2,814,000	60.0	1,688,400	40.0	1,125,600	0	0
Total Pop	**35,035,700**	**68**	**23,753,854**	**28**	**9,905,179**	**4**	**1,376,667**

Source: *TWG data analysis, January 2017*

Figure ES.4 shows the projected percentages of residents in each region according to their levels of Acute Food Insecurity as determined by the January 2017's IPC Analysis for Uganda.

Figure ES.4 Projected Percentage Regions Population in IPC Phases 1- 3 to March-17



Source: *TWG data analysis, January 2017*

Table ES.3 shows the projected trends on future food security for each region and Phase Level category. The trends are calculated by comparing the projected population in the respective Phase level with the population estimate from the January 2017's IPC Analysis[2].

2 The legend "down" indicates a reduction of the projected number of people in the respective Phase level; "Up" means that the population under that level is increasing; "Same" means the projected population remains the same as the current IPC estimate for that Phase Level and region. The color code indicates whether the projected trend is favorable or negative to the food security situation of the population in the respective region. A red cell means a deterioration of the situation; green means an improvement of the situation; white means the number of people in that Phase level remains the same in that region. For instance, a reduction on the number of people in Phase 1 shall be interpreted as a deterioration of the situation ("down"; red), meanwhile, a similar decrease in Phase 2 or 3 would indicate an improvement from the baseline ("Down", green).

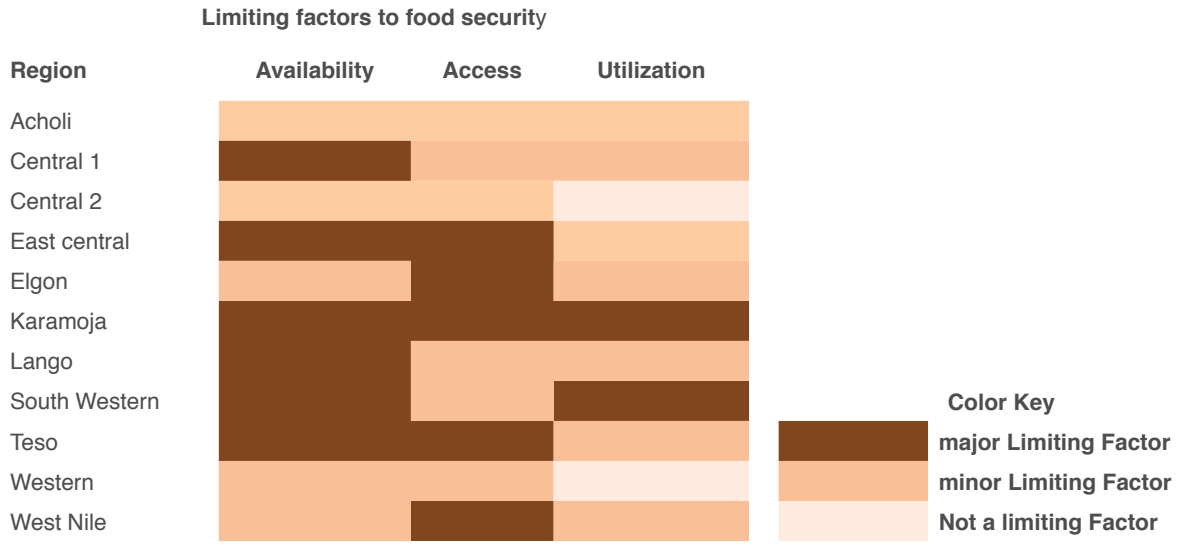
Table ES.3 Projected IPC Phase Population Trends by Region (to March 2017)

#	Region	IPC Trend to March 2017		
		Phase 1	Phase 2	Phase 3
1	Acholi	Down	Up	No Change
2	Central 1	Down	Up	Down
3	Central 2	No Change	No Change	No Change
4	East central	Down	Up	No Change
5	Elgon	No Change	No Change	No Change
6	Karamoja	Down	Up	Up
7	Lango	Down	Up	No Change
8	South Western	Up	Down	Down
9	Teso	No Change	Down	Up
10	Western	Down	Up	No Change
11	West Nile	Down	Up	No Change
Total Population		Down	Up	Down

Source: *TWG data analysis, January 2017*

Table ES.4 shows the IPC assessment findings on Limiting Factors to Food Security (i.e. availability; access; and utilization of food) for each region.

Table ES.4. Limiting Factors to Food Security



Source: *TWG data analysis, January 2017*

Food insecurity contributing factors:

- **Food Availability**: Poor crop harvests and low food stocks at household level due to the effects of prolonged dry spells and crop and livestock diseases.
- **Food Access**: High food prices coupled with low household incomes are reducing purchasing power thus limiting access to food.
- **Food Utilization**: Poor food preparation practices, food preferences based on culture and poor hygiene practices are constraining physical and biological utilization.

RECOMMENDATIONS

Short-term recommendations -**Timeframe for implementation**: Immediately

Table ES.5 describes key main immediate triggering factors, identified by the workshop as contributing to the current acute food insecurity situation, as well as immediate response interventions needed to mitigate their impact on vulnerable populations in the respective regions.

Table ES.5. List of Immediate response interventions at the Region levelSource

Phase	Regions	Immediate causes	Immediate response interventions
Overall Phase 2 - with population in phase 3	Karamoja Teso	• Prolonged dry spells • Low agricultural production • Reduced purchasing power due to food price increases • Reduced water access for humans and livestock • Poor hygiene and sanitation • Limited diversification of livelihoods	• Food assistance (in kind/ cash transfers) for population in crisis • Facilitate access to planting materials and seed for next planting season • Construct water infrastructure and rehabilitate water sources. • Promote water conservation and irrigation • Scale-up ongoing nutritional initiatives • Promote livelihood diversification programs • Promote risk transferring mechanisms • Food security and nutrition surveillance
	East Central South western Central 1	• Prolonged dry spells • Low agricultural production • Reduced purchasing power due to food price increases • Pest and disease resurgence especially of striga, BBW • Preference for land use for sugar-cane growing • Reduced pasture and water for livestock • Declining soil fertility	• Food assistance (in kind/ cash transfers) for population in crisis • Facilitate access to planting materials and seed for next planting season • Construct water infrastructure and rehabilitate water sources. • Promote water conservation and irrigation • Promote drought and disease tolerant high yielding crop varieties • Timely issuance of early warning for cropping seasons • Food security and nutrition surveillance
Phase 2 - without populations in phase 3	West Nile	• Prolonged dry spells • Low agricultural production • Refugee influx constraining access to food and services • Human disease esp. malaria • Reduced purchasing power due to food price increases • Water shortage	• Facilitate access to planting materials and seed for next planting season • Construct water infrastructure and rehabilitate water sources. • Promote water conservation and irrigation • Promote drought and disease tolerant high yielding crop varieties • Food security, nutrition and disease surveillance • Safety nets to include host communities • Continuous monitoring of vulnerable populations
	Elgon Lango	• Prolonged dry spells • Crop and livestock pests and disease • Human disease esp. malaria and cholera • Influx of pastoralists searching for water and pasture • Increasing food prices are reducing purchasing power • Inadequate water and pasture for livestock	• Facilitate access to planting materials and seed for next planting season • Construct water infrastructure and rehabilitate water sources. • Promote water conservation and irrigation • Promote drought and disease tolerant high yielding crop varieties • Food security, nutrition and disease surveillance • Promote alternative sources of income

Phase	Regions	Immediate causes	Immediate response interventions
Phase 1	Acholi Western Central 2	• Erratic/ insufficient rains and prolonged dry spells • Crop and livestock Pests and diseases • Lack of inputs and tools • Inadequate extension services • Reduced soil fertility • High food prices • Excessive sale of food	• Facilitate access to planting materials and seed for next planting season • Construct water infrastructure and rehabilitate water sources. • Initiate community by laws to compel households store sufficient food

- The population under crisis-level acute food insecurity requires immediate assistance to cope with the evolving emergency. As food stocks become depleted, the risk of more people falling from stress-level to crisis-level acute food insecurity is expected to increase.
- Given the need to fulfill food shortages in the affected regions, there is a potential risk that, if effective measures are not put in place to prevent adverse changes in local availability and access, those regions currently not in a crisis-level acute food insecurity situation may become adversely affected by a spike in intra-region food prices, due to the lure of better profits in areas currently experiencing food shortages, which in turn could trigger a reduction in the purchasing power of vulnerable groups across all regions.
- Access to agricultural inputs, particularly seeds, was highlighted as an urgent need. Failure to provide adequate support to households engaged in agriculture-related livelihoods will exacerbate food insecurity, with potentially irreversible impacts on agriculture-based livelihoods.
- There is also need to ensure that the population involved in agriculture-related livelihoods can get greater income stability through e.g. access to affordable credit; agricultural insurance schemes; market access and progressive social measures such as the implementation of well-targeted safety nets.

Timeframe for implementation: **Start date:** Mid-February 2017

- Adopt and begin implementation, in consultation with key stakeholders, of the Uganda National Food Security Strategic Action Plan 2017-2020, taking into consideration the recommendations emanated from the January 2017 IPC report, as well as key findings of the National Food Security Awareness Campaign Report of November 13 -26, 2016.

Mid-term Recommendations

Timeframe for implementation: **Start date:** July 2017

- Operationalize the implementation of the MAAIF's Agriculture Sector Strategic Plan (ASSP) 2015/16-2019/20.

Timeframe for implementation: **Start date:** July 2017

- Adopt and begin implementation of the Uganda Climate Smart Agriculture Programme 2015-2025, developed by the MAAIF and Ministry of Water and Environment.

Long-term recommendations

The following thematic areas are closely aligned with MAAIF's Agriculture Sector Strategic Plan 2015/16-2019/20 and the Uganda Climate Smart Agriculture Programme 2015-2025. These thematic areas address key issues that are expected to contribute to the reduction of the country's high level of food insecurity, as well as to address other social, economic, and environmental risks that compound to perpetuate the vulnerability of the Ugandan population. Main policy recommendations for eradicating food insecurity in Uganda are provided at the end of this report.

Timeframe for implementation: **Start date:** by 2017 End

Thematic Area 1: Mainstream Climate Change considerations into the country's investment planning processes

- Strengthening national capacity for climate change adaptation planning & implementation
- Ensure future investments and economic plans are climate resilient
- Increase financing tools to protect Uganda from climate change impacts
- Inform and mobilize stakeholders at multiple levels in support of climate change adaptation

Thematic Area 2: Improve climate resilient & healthy human settlements

- Improve planning to include climate change considerations in human settlements
- Ensure adequate quality and quantity of water for settlements
- Combat climate change related health impacts in settlements
- Increase awareness on vulnerabilities and climate change adaptation of settlements

Thematic Area 3: Mitigate climate variability and change impacts on food security

- Ensure ability of vulnerable groups to meet food production and nutrition demand
- Ensure adequate water is available for agriculture
- Reduce food security related socio-economic impacts
- Improve awareness and mobilize communities for climate change adaptation
- Increase irrigated farming

Thematic Area 4: Improve access to water, health & nutrition

- Improve access to safe drinking water
- Strengthen and improve access to health facilities and nutrition

Thematic Area 5: Build climate resilience of key productive sectors

- Minimize impacts of climate change on critical infrastructures
- Minimize impacts of climate change on agricultural sector
- Assist key industries in coping with the impacts of climate change
- Raise awareness about climate vulnerability in key economic sectors

Thematic Area 6: Protect the natural environments and the ecosystem services they provide from climate change impacts

- Ensure quality and quantity of water for wellbeing of humans and ecosystem services
- Enhance climate change resilience of terrestrial ecosystem and their services
- Enhance the resilience of wetlands and associated vulnerable natural species of flora and fauna

Thematic Area 7: Strengthen data & information management systems for better decision-making

- Ensure timely availability of data and information for evidence based planning and early recovery
- Improve monitoring of drought, long term dry spells, hazards, and food insecurity through systematic information management system
- Develop an enabling environment for data & information management, including improving skills and capacities human resource & physical resources at all levels for data & information management

Part 1.
INTRODUCTION

COUNTRY CONTEXT

Recurrent threats to food security in Uganda are influenced by several factors including unpredictable climatic conditions, insecurity, outbreaks of crop and livestock diseases; exacerbated by low social and economic capital, among other factors. Uganda experienced a prolonged dry spell from March to August 2016, following an El Niño event, which resulted in insufficient rain leading to crop failure and suppressed harvests in most parts of the country. The El Niño event was followed by a weak La Niña phase, which contributed to exacerbating the already fragile food security situation of millions in Uganda.

A three-week delay of the onset of the 2016's first season rains in the northern region of Uganda caused major crop failure as seeds failed to germinate. Households who had planted crops according to the usual first season calendar of March were confronted with major losses. Much of the crops planted later, after the rains arrived, were also destroyed by the sun due to below average rainfall.

The 2015/16 El Niño event seriously impacted the Eastern, Central, and Western regions of Uganda. The region of Karamoja, including Teso, Lango, Acholi, Bukedi, West Nile, as well as parts of the districts along the Cattle Corridor reported massive crop failure, leading to little or no harvest, resulting in an evolving food crisis. Analyses of remote sensing data show several other parts of the country that may be also experiencing severe shortages, highlighting the need for data to confirm the extent and severity of the food security situation on the ground.

The Government's food security early warning system, initially indicated that about 25 % of the Ugandan population was experiencing severe shortage of food as a result of delayed and short lived rainfall; signaling a potential further deterioration of the affected regions' food security situation. Given the potential risk of other areas of the country also becoming adversely impacted. In response to the emergency, in mid-November, the Cabinet sent out seven high level teams, each headed by at least two Cabinet Ministers, on a fact finding and awareness raising campaign to inform the population of the evolving food security situation and advise communities and local authorities on the need to implement sustainable preventive measures to optimize the use of food stocks and protect livelihoods, particularly those of households involved in agricultural activities.

The Cabinet's fact-finding mission evidenced the need of carrying out a more systematic food security assessment and demanded that a report on the evolving food security situation be prepared and presented to the Cabinet as soon as possible. The Office of the Prime Minister was tasked with leading the preparation of said assessment, with the technical support of the Government's specialized technical agencies; as well as technical and financial support from concerned international development and humanitarian partners, including specialized agencies of the UN, USAID, DFID, and the World Bank Group. Following the Cabinet's request, in early December, 2016, the OPM's Permanent Secretary convened a meeting with representatives of the World Bank, DFID, USAID, WFP, FAO, FEWSNET,

and MAAIF at the World Bank Offices and parties agreed on a joint food security assessment, under the coordination of OPM's Relief, Disaster Preparedness, and Management Department.

The Government of Uganda's authorities and development and humanitarian partners agreed on the assessment's main objectives: (i) understand the evolution of the ongoing food insecurity situation; (ii) identify where food insecure and vulnerable households are located; (iii) improve understanding of the underlying causes of food insecurity risk that threatens households and communities across the country, including the effects of changes in seasonal climate patterns and market conditions on food security outcomes; and (iv) identify the main coping mechanisms employed by the affected communities and households, with a particular focus on identifying unsustainable ones. The assessment should provide recommendations that contribute to building resilience to external shocks, particularly those caused by extreme climate and weather events, as well as contribute to reduce or mitigate the risk of food insecurity.

Improving food security requires a deep understanding of the social and economic context and trends. When domestic agriculture and food production are well developed, competitive, and able to sustain sudden shocks, food insecurity will likely manifest itself mildly. When the conditions for adequate food production are not in place, unexpected shocks could cause severe difficulties and suffering. However, challenges to food security can only be successfully addressed through a policy mix encompassing, among others, economic and social policy, access to and control of productive assets, access to credit, healthcare and infrastructure development.

In the case of Uganda, important knowledge gaps remain that need to be bridged to better understand the underlying factors, as well as the temporal and spatial dimensions of food insecurity. Development partners and related concerned agencies operating in Uganda are increasingly improving coordination, and collaboration with the government agencies responsible for promoting food security; creating synergies that measurably contribute to improving understanding of the underlying causes of food insecurity in the country.

The adoption by the GoU of the "Integrated Food Security Phase Classification"[3] (IPC) protocol as the main tool for determining and reporting on the country's food security situation has facilitated coordination among humanitarian and development partners, NGOs, and CSOs operating in Uganda. The IPC methodology provides protocols an tools for consolidating, in a systematic manner, key dimensions of the multi-sectoral approach needed to build an adequate understanding of the underlying causes of chronic and accurate food security situations, and triggering factors at all levels of government administration. The IPC provides insights on key characteristics of Uganda's food insecure populations, in terms of their number, geographical location, social conditions and severity of food insecurity. Combined with other data collected by government agencies (e.g. the National Bureau of Statistics, UBOS; the Uganda National Meteorological Authority, UNMA, key line ministries responsible for agriculture, livestock; land and water management, including provision of safe drinking water and sanitation; and health services), the IPC food security ranking contributes to inform policy formulation and to improve the effectiveness and efficiency of a coordinated response.

"Despite progress, poverty and vulnerability remain in the Northern and Eastern regions, which account for 84% of those living beneath the national poverty line. For every three Ugandans who get out of poverty, two fall back in, demonstrating the fragile gains in the country's poverty success."

3.IPC Global Partners. 2012. Integrated Food Security Phase Classification Technical Manual Version 2.0. Evidence and Standards for Better Food Security Decisions. FAO. Rome.

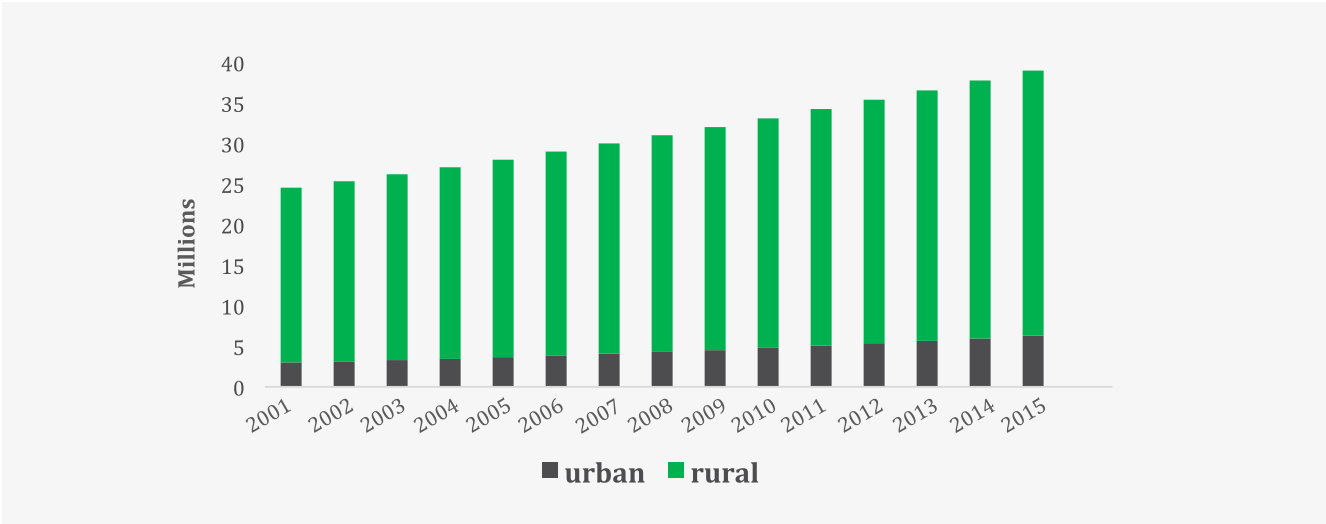
This report outlines key characteristics of food security in Uganda. The report incorporates the findings of the latest IPC report; which provides an assessment of how many people in Uganda are currently affected by food insecurity, where these people are located, how their social-economic status affect their ability to cope with protracted and acute food insecurity situations.

The report seeks to deliver evidence-based recommendations for urgent policy formulation and improved cross-sectoral coordination, recognizing the limitations resulting from the report's strong reliance on secondary data, provided by knowledgeable local government authorities, technical experts, and community informants; as well as data gaps that were not resolved within the timeframe allocated for the completion of this report.

Demographic and socio economic statistics

Although the fertility rate has dropped to 5.7 birth per woman for the 2014-2015 period[4], from 6.6 births in 2005, it is still high. According to the 2014 Uganda NPHC census Uganda's population reached 34.6 million people; annual population growth rate between 2002 and 2014 was 3.3 %. In addition, the country has one of the world's youngest populations, 48 % under the age of 15 years; well above Sub-Saharan Africa's average of 43.2 % and the world average of 26.8%[5] ; creating a high dependency ratio that poses significant challenges to the government's poverty reduction efforts.

Figure 1 Uganda's rural and urban population from 2001 to 2015



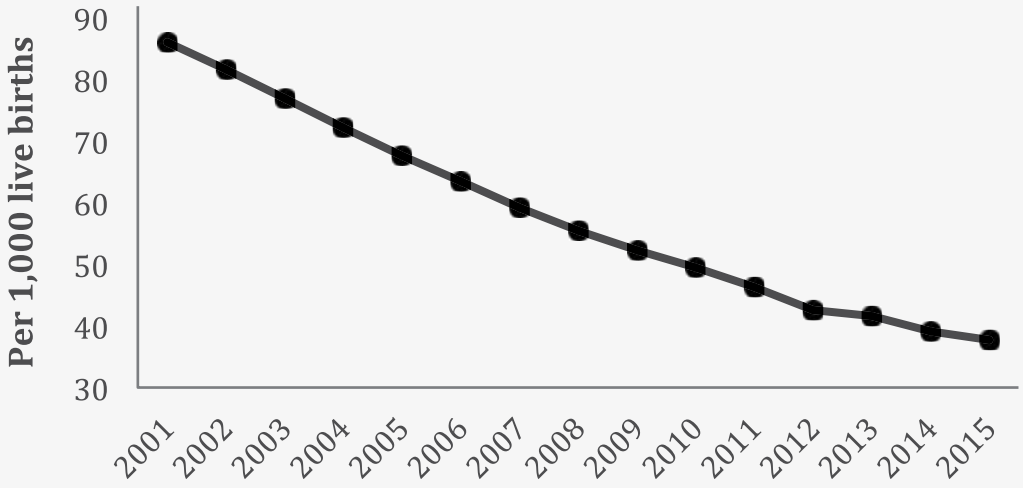
Source: *The World Bank website. Uganda's country data[6].*

Uganda's population is primarily rural. World Bank's population growth projections for Uganda estimated the population in 2015 to be 39.0 million, of which 32.7 million (i.e. 83.9 % of the country's population) was living in rural areas, and 6.3 million (i.e. 16.1 %) in urban locations.

4. Demographic and Health Survey (DHS) Program. Uganda. Quickstats. http://www.dhsprogram.com/Where-We-Work/Country-Main.cfm?ctry_id=44&c=Uganda
5. The Uganda Poverty Assessment Report 2016. Farms, cities and good fortunes: assessing poverty reduction in Uganda from 2006-20013. Report No. ACS18391. The World Bank. 2016
6. See the World Bank website, http://data.worldbank.org/country/uganda, as well as Annexxes for additional information on data sources, methodologies used and disclaimers.

Uganda has taken important steps towards reducing infant mortality. Infant mortality rate (IMR) has substantially decreased. World Bank's estimates show a significant declining trend from 37.7 deaths per 1,000 live births in 2015 from 86 deaths per 1,000 live births in 2001.

Figure 2 Infant Mortality rate between 2001 and 2015 (per 1,000 live births)



Source: *The World Bank. Uganda's country data*

Poverty eradication is one of the Government of Uganda's key development objectives. The GoU has explicitly recognized poverty as one of the binding constraints to growth and development. According to the UBOS 2012/13 survey data, 19.7 % of Uganda's population, i.e. 6.7 million people, was poor. The incidence of poverty remained higher in rural areas than in urban ones, with 22.8 % of the rural population being poor, while 9.3 % of urban residents were considered poor. While rural residents represented about 77 % of the total population, they accounted for 89 % of the poor. On the other hand, the urban areas, representing 22.6 % of the population, account for 11 % of national poverty[7].

Uganda's urban and rural poverty headcount ratio (i.e. percentage of individuals living under the national poverty lines) shows a decline in both the urban and rural poor for the period of 2002 to 2012[8]. Less than 20 % of the total population lives below the poverty line, down from 56 % at the turn of the century.

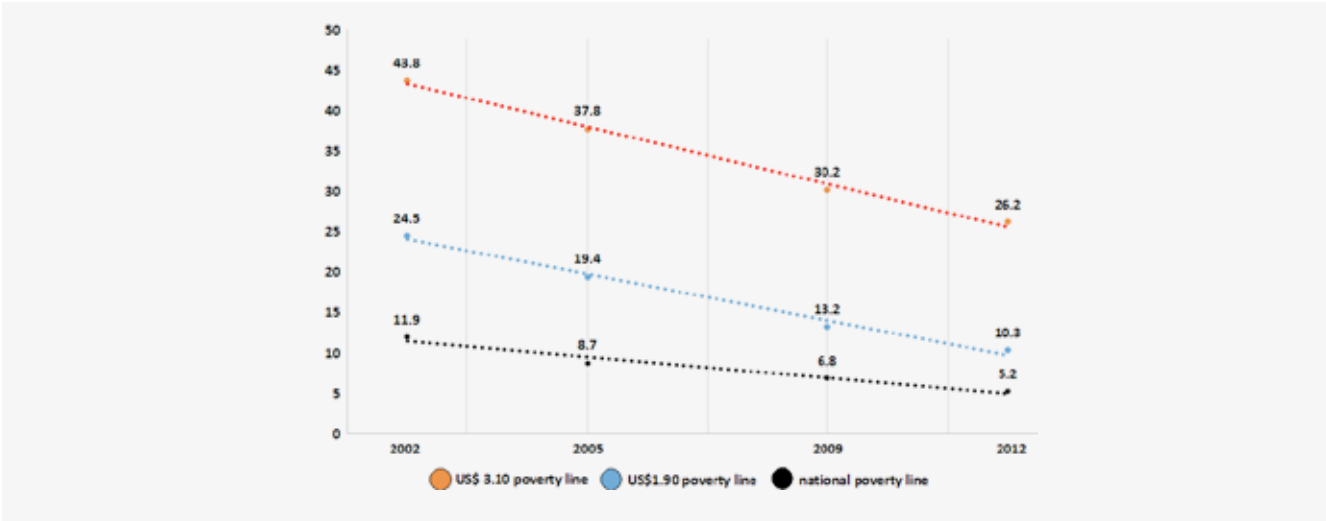
Agriculture supports the livelihoods of 73 % of households, provides employment for about 33.8 % of the economically active population, and over 80 % of the poorest of the population. The proportional contribution of the agricultural sector to the country's GDP currently stands at about 20.9 %. The sector greater contribution to the economy was a major driver of growth and poverty alleviation. Consequently, promoting the sustainability of the sector gains is critical to ensure food security. (Agriculture Policy, 2013).

7.Uganda Bureau of Statistics (UBOS). 2014 Statistical Abstract. Page 28.

8. The poverty headcount ratio counts all the people below a poverty line, in a given population, and considers them equally poor. See annex XX for further explanation.

The Poverty Gap Index is a better indicator of poverty as it measures the mean shortfall from the poverty lines (counting the non-poor as having zero shortfall) as a percentage of the poverty lines. The Poverty gap at several poverty lines (i.e. US$3.10; US$1.90; and national) has been steadily decreasing. While the poverty headcount ratio simply counts all the people below a poverty line in a given population, and considers them equally poor, the Poverty Gap Index estimates the depth of poverty by considering how far, on the average, the poor are from that poverty line as well as its incidence. Such metrics can be used to evaluate the impact of government poverty reduction measures, including the effectiveness of targeted interventions aimed at protecting households and communities from the risks of food insecurity, as well as protecting livelihoods.

Figure 4 Poverty Gap at poverty lines (% of population) (2002 to 2012)



Source: *The World Bank. Uganda's country data*

Current overall food security in uganda

The ability of Uganda's population to meet their food needs is influenced by social, economic, geographical, weather- and climate-related, environmental, and temporal factors. Even though the country has made important progress in reducing poverty, some communities and social groups remain vulnerable to food insecurity, resulting in a sizeable proportion of people who are not able to consume adequate quantities of quality food at all times, creating a serious humanitarian and social development challenge.

The gender of the household head, household size and source of income matter

Some household characteristics, including the gender of the head of household; household size; and main sources of income and livelihoods, have been found to explain differences in food insecurity and nutritional outcomes. Ugandan female-headed households are more likely to face food insecurity than male-headed households. As expected, smaller households were found to be less likely to face food consumption deficiencies than larger households. In terms of sources of income, households engaged in agriculture as well as agricultural workers suffer the highest food insecurity rates.

Domestic agricultural production and seasonal food prices remain volatile

Food availability in Uganda is not a major problem. However, the volatility of production poses a major challenge to food security. Uganda's food needs are largely being met by domestic production, with some imports filling the gap. Uganda's main exports are agricultural products (80 % of total exports), with

coffee being the most important export (22 % of total exports) followed by tea, cotton, copper, oil, and fish.

The country's main export partners are Sudan (15 %), Kenya (10 %), DR Congo, Netherlands, Germany, South Africa, and UAE[9]. Meanwhile, Uganda's main imports are oil (24 % of total imports) followed by pharmaceutical products and capital goods. Uganda's main import partners are: Kenya, United Arab Emirates, China and India.

Agricultural production has been impacted due to the extreme climate variability, mainly affecting subsistence and small agricultural producers' capacity to adhere to the seasonal calendars, which they used to determine the best time for planting seed and the harvest.

Rainfall seasonality has become increasingly erratic across the country

A very small percentage of Uganda's agricultural land is under some kind of irrigation. Households engaged in subsistence agriculture, as well as small producers heavily rely on formerly well-defined seasonal patterns. The long term mean of key rainfall parameters in Uganda are shifting toward new irregular-duration cycles of heavy precipitation, oftentimes followed by increasingly longer dry spells, including drought. The 2015/2016 El Niño event, and most recently the La Niña phase of ENSO, had a measurable exacerbating effect on this climatic trend, triggering the ongoing food insecurity situation. Drought in the northern region and along the cattle corridor, have a devastating impact on the livestock sector.

Although, it is recognized that the increasing frequency and intensity of extreme weather events, as discussed above, had and will continue to have a negative impact on Uganda's agriculture and livestock sectors; and with that on the country's capacity to reduce the risk of food insecurity; there are other contributing factors to food insecurity over which the government can intervene to mitigate or even eliminate their negative impacts.

Among these contributing factors, Uganda's

i. Limited access to irrigation,
ii. Slow uptake of modern agronomic practices and technologies, including use of improved, drought-resistant crop varieties, and the adoption of environmentally friendly farm mechanization and inputs;
iii. Inadequate terrestrial transport infrastructure that affects time to markets and transportation costs;
iv. Inadequate capacity and geographic coverage of storage facilities to protect surplus production of grains;
v. Non-existent or incomplete value chains for certain agricultural products;
vi. Inadequate portfolio of income stabilization tools, including agriculture and livestock insurance mechanisms; and
vii. Adequate agricultural extension services.

Access to food represents a major challenge for achieving greater food security

Rural households remain more vulnerable due to volatile incomes. Rural households that depend on agriculture-related jobs remain more vulnerable, mainly due to three factors: (i) seasonal food prices volatility; (ii) greater income volatility; and (iii) greater dependency on own-production of food. Above all, sudden income shocks because of weather related adverse events can significantly impact both the quantity and quality of food consumed in households that depend on agriculture-related jobs.

Economic context

Uganda's real gross domestic product (GDP) growth averaged 7.3% between 2000 and 2010, placing the country amongst the fastest growing economies in the world. Due to rapid population growth, however, the increase in per capita income was just above 3% per year. In the past decade, the country has witnessed more economic volatility, and GDP growth has slowed to an average of about 5%[10]. Economic

9. Trading Economics. "Uganda Exports." http://www.tradingeconomics.com/uganda/exports, and "Uganda Imports." http://www.tradingeconomics.com/uganda/imports, accessed: Jan. 2, 2017 accessed: Jan. 2, 2017
10. The World Bank Data. "Uganda." http://www.worldbank.org/en/country/uganda/overview. Accessed: January 2, 2017

growth is projected to accelerate to about 5.5% in FY17, and average 6-7% in FY18-20. In the short term, large public sector infrastructure projects will continue to be the main driver of economic activity. Main risks to Uganda's economic growth include a reduction of the pace of implementation of the planned public investment program. In addition, regional political instability especially in South Sudan and the Democratic Republic of Congo, as well as the materialization of climate- and weather-related shocks could adversely impact the country's growth projections.

Development challenges

Uganda surpassed the Millennium Development Goals (MDGs) target on halving poverty by 2015, and made significant progress in reducing the population that suffers from hunger. According to the Uganda Poverty Assessment, the proportion of the population living in extreme poverty ($1.90 a day) fell from 62.2% in 2002/03 to 33.2% in 2012/13, representing the second fastest reduction in poverty in Sub-Saharan Africa. Using the national poverty line ($1.25 a day), the incidence of poverty declined from 56.4% in 1993 to 19.7% in 2013. Poverty reduction was mainly driven by improvements in agriculture, urbanization, and education. Despite progress, poverty and vulnerability continue to affect people living in the Northern and Eastern regions, which account for 84% of Ugandans living beneath the national poverty line. For every three Ugandans who get out of poverty, two fall back in, demonstrating the fragile gains in the country's poverty success[11].

Uganda has one of the world's youngest populations, half of them under the age of 15 years. The fertility rate is estimated at 5.7 children per woman (2015), and with a 3.3% population growth the dependency ratio is high with significant consequences for national development. Feeding a fast growing population will require a substantial increase in agricultural productivity that cannot be accomplished under the current agricultural production model.

Purpose of the analysis

This report provides an analysis of the drivers of food insecurity in Uganda. It attempts to outline the specific characteristics of food insecurity found in Uganda and to identify the underlying causes. As such, this report seeks to inform sound public policy decision-making processes. While the understanding of 'food security' as a concept has evolved in Uganda over time, Government's policies have remained mostly focused on food availability as the primary attribute of food security. Considering the food security outcomes, the policy agenda needs to become broader. This report aims to enhance the overall understanding of the complex and multidimensional issue of food security in Uganda, and set the basis for a wider food security policy agenda.

This report complements the January 2017's Integrated Food Security Phase Classification (IPC) assessment, which looks at how many people are food insecure in Uganda, where these people live, who they are and why they face food security challenges. The IPC report aligns with international food security concepts and analytical framework based on the recognition of its four key dimensions: (i) the availability of food; (ii) access to food; (iii) utilization of food; and (iv) the stability of these three dimensions over time. The findings of the IPC report provide critical input to the policy recommendations proposed in this report.

The report is divided into two parts. The remainder of Part I outlines the methodology. Details of the IPC Analysis are included by reference to the January 2017 report itself. Part II of the report focuses on providing the technical background for the proposed policy recommendations, highlighting the need of transforming Uganda's agriculture from a subsistence livelihood activity practiced by millions into high-yield commercial operations that can contribute to accelerate the achievement of the Government's development goals, particularly eradicating food insecurity in the country. The

11. Ibid

policy recommendations are presented at the end of this report.

Methodological approach for the assessment

In order to carry out, as requested by the Cabinet, an assessment of the status of acute food security in Uganda, the assessment team engaged in the preparation of an Integrated Food Security Phase Classification (IPC) Analysis for the entire country. The IPC protocols allow the preparation of national and sub national level assessments. The geographic resolution of the assessment is mostly determined by time and financial resources available for carrying out data gathering from the field, which is always complemented with relevant government and non-government databases and other types of secondary data sources.

IPC Analysis reports have been adopted by the Government of Uganda as the main tool for informing and reporting on the status of chronic and acute food insecurity situations in the country. According to the IPC protocols, key dimensions of food security: (i) availability, (ii) access; and (iii) utilization of food are evaluated at the present time. The information collected, when combined with e.g. weather forecasts also allows to make projections under different scenarios on the stability of the core dimensions through time. This report complements the January 2017's IPC Analysis.

During the first step of the IPC Analysis, the DPOs were provided with electronic templates and instructions on the type of information that would allow the creation of a reliable picture of the food security situation within their districts, as well as the time-frame for delivering the requested information. Eighty-four (84) out of 116 districts responded to the assessment exercise.

As planned, after receiving the district level reports, a first workshop was organized in the town of Jinja. During the workshop a comprehensive data quality control process was carried out, in preparation for the next step in the process. The next step consisted of the consolidation of the district-level information into a region-level acute food insecurity assessment, which was carried out during a second workshop, held at Ridar Hotel, Mukono from 16th – 20th, January, 2017. This workshop, facilitated by IPC TWG, MAAIF and OPM, was attended by 50 participants: 30 from Districts representing all regions of Uganda, along with 20 members of the IPC Technical Working Group representing relevant NGOs, UN Agencies and Ministries that handle food security, water and sanitation, health and nutrition related activities.

The workshop successfully completed the preparation of the IPC Analysis for the whole country at the region level. In addition, the background data and information collected as part of the process for carrying out the IPC Analysis provided insights on the underlying causes of food insecurity at the district level, as well as on the main coping strategies used by the affected populations through the country.

Part 2.

THE ROLE OF AGRICULTURAL SECTOR DEVELOPMENT IN ACHIEVING UGANDA'S DEVELOPMENT VISION 2040

COUNTRY CONTEXT

Agriculture remains the backbone of Uganda's economy. In 2012/13, the sector accounted for 25.3 percent of the country's GDP from 24.7 percent in 2010/11. It employs about 72 percent of the total labor force (formal and informal), 77 percent of whom are women, and 63 percent are youth, mostly residing in the rural areas. Over the NDPI period, the sector registered sluggish growth from 1.0 percent in 2010/11, to 1.33 percent during 2013/14. Farming is still dominated by smallholder farmers engaged in food and cash crops, horticulture, fishing and livestock farming. The sector's strength is leveraged through, among others, the National Agricultural Policy 2013 which sets a solid framework to guide investment and delivery of agricultural services.

The Second National Development Plan (NDPII) prioritizes investment in five (5) areas with the greatest multiplier effect on the economy; which are: (i) Agriculture; (ii) Tourism; (iii) Minerals, oil and gas; (iv) Infrastructure development; and (v) Human capital development. The effective implementation of this Plan is expected to lead to an average growth rate of 6.3 per cent and per capita income of USD 1,039 by 2020.

Agricultural Development

As a major sector in the economy, the NDPII emphasizes commercialization of agriculture, to increase production and productivity along the value chains. It emphasizes agro-processing and marketing as a launch path to industrialization. Investment in value addition to agricultural products can expand the GDP size, while improving the Country's Balance of Payments Position. The agricultural development priorities are developed and articulated through the Agriculture Sector Strategic Plan (ASSP), which is a five-year strategy of the Ministry of Agriculture, Animal Industries and Fisheries for the period 2015/16-2019/20.

Uganda Vision 2040. "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years"

Agricultural transformation, a way out of poverty and food insecurity in Uganda

The International Food Policy Research Institute's 2014 report[12] on global food security warns that addressing the challenges of climate change, rising long-term food prices, and poor progress in improving food security will require increased food production without further damage to the environment. The report also highlights the need for accelerated investments in agricultural research and development as crucial to supporting food production growth.

According to the 2014 IFPRI report, the number of food-insecure people in developing countries could be substantially reduced through the adoption of alternative food production technologies, including: no-till; integrated soil fertility management (ISFM); nitrogen-use efficiency (NUE); and precision agriculture (PA). The adoption of such technologies would contribute to address important soil quality constraints that are particularly relevant in developing countries. It is expected that the future technology mix to be adopted at the local levels will have major impacts on agricultural production, food consumption, food security, trade, and environmental quality in developing countries, and consequently, such technologies would contribute to reduce the number of food insecure populations.

Future food production projections, carried out as background studies for the 2014 IFRI report, suggest that sustainably meeting the challenge of climate change while improving food security would require a three-pronged effort: increased crop productivity through enhanced investment in agricultural research, development and use of resource-conserving management, and increased investment in irrigation. The projections show that increased investment in cost-effective irrigation will serve to leverage other production technologies. In addition, the adoption of advanced irrigation technologies such as drip and sprinkler irrigation could save water in water-stressed locations while maintaining yield levels.

As a growing body of evidence shows, agricultural growth leads to non-agricultural growth, is tightly linked to downstream manufacturing, and significantly contributes to poverty reduction. In addition, agricultural productivity growth can have long term positive effects by enabling farm households to invest in human capital, leading to intergenerational diversification of income sources[13] and reduction of intergenerational transmission of poverty[14]. As shown in several countries in South Asia and Sub-Saharan Africa, which have achieved substantial progress in transforming subsistence farming into commercial enterprises, the resulting contribution to GDP growth is linked to progress in poverty reduction and food security indicators. Although improving agricultural productivity is critical for reducing food insecurity, transforming agriculture transcends productivity enhancement at the level of primary production, encompassing the agribusiness value chain.

Transforming agriculture from a livelihood activity into a profitable business provides the fastest options for feeding, employing, and lifting millions of people out of poverty[15] . Realizing such a transformation shall not be the sole responsibility of the government. The government, however, is the critical stakeholder that plays an essential role in developing the enabling environment for fostering private-sector participation

NDPII. Overall Goal: "To achieve middle income status by 2020 through strengthening the country's competitiveness for sustainable wealth creation, employment and inclusive growth"

12. Rosegrant, Mark et al. 2014. Food Security in a World of Natural Resource Scarcity. The Role of Agricultural Technologies. Food security in a world of natural resource scarcity: the role of agricultural technologies —Edition 1. International Food Policy Research Institute
13. Agriculture Rural Employment, and Inclusive Growth. Philippine Institute for Development Studies. www.pids.gov.ph
14. Chronic Poverty Research Center. Intergenerational transmission of poverty. http://www.chronicpoverty.org/page/igt
15. AfDB. Feed Africa. Strategy for Agricultural Transformation in Africa. 2016 -2015

in the agricultural transformation. The government's main role is to create policy and institutional frameworks that promote agricultural production and productivity, including by providing a comparative advantage based largely on the effective delivery of public goods and associated services such as agricultural R&D, irrigation, and critical infrastructure. In addition, the government can develop policies that promote access to affordable capital and markets that leverage private stakeholders' capacity to develop thriving agribusinesses.

The 2016 AfDB's Strategy for Agricultural Transformation report identifies three conditions that need to be present for achieving successful business-led transformation of agriculture: (i) a large-scale dissemination of productivity-increasing technology and inputs, plus input intensity and capital intensity; (ii) the development of input and output markets structures and incentives that allow for the full realization of the value of increased production; and, (iii) a well-functioning and vibrant private sector that can manage and allocate skill and capital to scale emergent success and drive long-term sustainable agribusiness growth.

Rapidly rising resource scarcity of water and increasingly diminishing availability of suitable agricultural land will further constrain food production growth around the world. This situation is particularly relevant in Uganda, where unsustainable agricultural practices have contributed to land degradation, which in turn have promoted the encroaching of landless farmers into the remaining natural areas. Land degradation in certain regions of the country, exacerbated by recurrent climate- and weather-related shocks, is already causing serious adverse impacts on soil productive capacity, including nutrient depletion; soil erosion; loss of vegetative cover of grasslands and agriculture-induced deforestation. Land expansion for agriculture would entail potential major environmental costs and damage to remaining forest areas and related ecosystem services.

Unless forward looking policies that encourage land-improvement investments and better management are put in place, land degradation will seriously threaten food production and rural livelihoods in Uganda, exacerbating the already fragile food security situation of millions.

In addition, Uganda's high potential for the growing nature-oriented tourism, --an industry that has proven to be extremely lucrative, and an increasingly important source of employment in rural areas in countries of Africa and Latin America--, can be threatened by uncoordinated sectoral development polices. Boosting agricultural production cannot be sustainable if it is not part of an integrated multi-sectoral development framework.

Protecting environmental services, such as clean water and pollinators of commercial crops, through the protection of the remaining natural areas, is vital to ensure the long-term sustainability of Uganda's agro-ecological systems and, with them, the sustainability of agricultural production and productivity improvements. IFPRI's note on strategies to reduce land degradation highlights the following policy recommendations that are applicable to Uganda's current situation.

- Improve information systems for land management
- Increase research and technology development for land improvement
- Promote investment in land improvement
- Modify property rights to encourage long-term land investments
- Develop more flexible and participatory planning systems for sustainable use
- Support local organizations to manage local resources
- Develop marketing infrastructure
- Correct distorted price incentives
- Encourage rural income growth and diversification
- Reduce discrimination against marginal regions in public investment

Addressing food insecurity through the lens of transforming the agricultural sector from subsistence

agriculture to high productivity enterprises has proven to work in countries across Asia, Latin America and South Saharan Africa.

The following areas for government interventions can contribute to mitigate some of the agricultural sector challenges that need to be addressed to steer the country in the path to eradicating food insecurity.

Risk management: While the agricultural sector continues to be increasingly affected by adverse events, the financial risk management tools in place are still insufficient to protect farmers from shocks, as well as hedging the Government from its contingent liabilities resulting from the cost of financing emergency response and rehabilitation. The lack of small-farmers' insurance and other livelihood income protection mechanisms as well as the low coverage of safety nets, compels the Government to intervene as insurer of last resort to preclude the collapse of agricultural production in the affected areas.

Uganda's agriculture sector would benefit from the design of a risk management framework that lays out the policy instruments that are most adequate in the country and sector context. As part of a comprehensive agricultural risk management strategy, farmers need access to crop insurance and other risk management tools that can protect them from crop failures as well as from price volatility during surplus production years. Without a predictable income for their harvest, farmers may be discouraged from investing in improving crop productivity and output.

National and local government authorities, with the support of concerned development and humanitarian partners have been able to work collaboratively to address evolving food insecurity crisis situations. Building the ***ex-ante*** capacity to address potential crisis situations, and in particular to address food insecurity crises, however, will require some important investments in risk preparedness. The direct economic benefits of building risk preparedness and improved response capacity are for the most part the avoided economic costs of such events. Indirect costs include impacts on the economy including interruption of economic processes, need for social assistance, and reduced agricultural output. Furthermore, improved preparedness for addressing food insecurity risk must take into consideration the loss of human capital.

The Government needs to implement the reforms and investments that encourage higher sector productivity, better market integration, and greater resilience in face of climate and market risks. This would reduce the country's vulnerabilities to external shocks, which negatively impact farmers and consumers, and trigger episodes of food insecurity. The institutional framework on food security, requires clarity of focus on policy objectives, and substantially improved coordination. There is a need to undergo a paradigm shift from response to preparedness.

Revising the current policy framework. While the volatility of agriculture and its vulnerability to shocks have been high in recent years, risk management policies continue to be reactive, and focused on emergency response, rather than on prevention and mitigation. This reactive approach generates uncertainty for the affected farmers, and results in delays in the delivery of aid and rehabilitation interventions, as well as not being conducive to effective targeting of public expenditure. Agricultural sector risks (e.g. weather-related, market-related, plant and animal diseases and pest outbreaks), need to be managed strategically, via an integrated framework. Effective management of agricultural risks requires the embracing of new technologies by farmers, which will require a substantial improvement in the provision of agricultural advisory services.

Policy instruments aimed at helping farmers cope with weather-related risks may need to be developed or updated to reflect evolving sector needs. Several investment-type subsidies have been developed and tested in other countries aimed to encourage adoption of on-farm risk management practices, such as grants for purchase of irrigation equipment, and protected-field crop production. In addition,

there are programs that provide subsidy aimed at promoting adoption of insurance in agriculture by subsidizing insurance premiums for small farmers and pastoralists. In addition, a social assistance program – properly integrated into the country's social policy framework – would allow for better targeting and a more efficient delivery of public support in times of crisis situations.

Provision of Climate and Weather Services to Farmers. The provision of critical climate and weather information and agricultural services requires adequate monitoring and forecasting capabilities. However, collecting good meteorological information is not enough, weather & climate information should be translated into useful products with actionable recommendations, customized to specific target audiences and agro-ecological regions. Critical meteorological information should be made readily available to all stakeholders as a public good.

Training and agricultural advisory services. Farmers need training in practically all aspects of farm management. Changing climate and weather conditions have adversely impacted farmers' ability to predict when to sow their crop seeds. Farmlands are becoming less and less productive due to soil degradation, exacerbated by recurrent dry spells and drought episodes in some regions, while others are experiencing damaging extreme rainfall episodes before the harvest, that also intensify soil erosion.

Training in the adoption of agricultural best practices and new technologies; access to quality inputs (including seed, and on the efficient and safe use of fertilizers and pesticides), access to credit, and technology to increase their productivity in a sustainable way; is also needed. Farmers who can get the tools to maximize the use of their lands are better prepared to raise their own living standards as well as reduce their households' risk of falling into a situation of food insecurity.

Training farmers in the adoption of sustainable practices, new production technologies, and proper use of agricultural inputs will be needed to help overcome the immediate food insecurity situation as well as to prepare farmers for the next agricultural cycles.

Protecting farmers' agricultural land rights and livelihoods. There are well-tested strategies for protecting farmers' access to and protection of their agricultural land and livelihoods. Resolving rural property rights issues would allow farmers to own their land and pledge it as collateral for access to credit aimed to increase farm productivity.

Fostering adoption of new technologies. The 2016 AfDB's Strategy for Agricultural Transformation in Africa report identified large-scale dissemination of productivity-increasing technology and inputs, plus input intensity and capital intensity as a key requirement for achieving successful business-led transformation of agriculture. The adoption of improved farming techniques and practices, use of climate-resistant seed / breed varieties; along with access to affordable agricultural credit and risk transfer instruments, will increase productivity and output.

New agricultural production technologies are being tested and promoted by research institutions around the world as key for increasing agricultural productivity and successfully addressing food insecurity issues. Alternative food production technologies, such as no-till; integrated soil fertility management (ISFM); nitrogen-use efficiency (NUE); and precision agriculture (PA) are foreseen as important for boosting productivity at the farm level, substantially contributing to reduce food insecurity. Improved plant varieties, such as drought resistant crops, and input optimization technologies will help farmers improve yields while reducing waste and environmental impact.

Government investments in agricultural research & development, as well as improved extension services and the promotion of new technologies and sustainable agricultural practices, would encourage private sector participation.

Fostering collaboration among the public and private sectors. A major theme of this report is the recognition that addressing food insecurity in Uganda requires transforming agriculture from subsistence livelihood into a profitable business; as such transformation would be a major driver for lifting millions of people out of poverty. It is also recognized that achieving such goal will require strong collaboration among government institutions, civil society organizations, academia and private investors to identify the best interventions in the short, medium and long-term horizons. The government is the critical stakeholder that plays an essential role in developing the enabling environment for fostering private-sector participation in the agricultural transformation.

Improving investments in critical infrastructure. The agricultural sector needs to be modernized in almost every aspect of the food production chain. Adequate infrastructure is needed for transportation, distribution, and energy distribution, all of which support the food value chain. Government investment in increasing the land area under irrigation is key for achieving the levels of productivity that will make the agricultural transformation possible. Irrigation addresses the second most important constraint to high-yield agriculture, water; second only to soil quality.

POLICY RECOMMENDATIONS

Building national capacity to realize the Government's vision of a transformed society from a peasant economy to a modern and prosperous country by 2040 will require creating an enabling policy environment that allows the implementation of key structural changes.

The high volatility of crop yields in Uganda reflects the country's underdeveloped weather-related risk mitigation capabilities. A large share of Uganda's agriculture is rain-fed, low input subsistence, agriculture. Mechanization is very limited. Only a small fraction of agricultural lands is under some kind of irrigation. The country's crop production suffers from (i) limited access to irrigation; (ii) low rates of adoption of modern agricultural practices and technologies (such as drought- and pest-resistant varieties and new production technologies); (iii) lack of innovative insurance schemes for agriculture (such as index-based weather insurance); and (iv) lack of timely meteorological information and agricultural advisory services for effective preparedness and response to extreme events. On the market side, the key challenge is to bridge the existing gaps on the production chain. Agricultural infrastructure is limited, particularly irrigation schemes and food storage facilities.

The Second National Development Plan (NDPII) explicitly identifies the medium term goal of attaining middle income status by 2020, and along with it the achievement of the levels of economic and human development gains expected of such a level.

Although the country has achieved important progress in some social and economic areas, it is still lagging behind in other key economic and human development indicators. Uganda is struggling to tackle these fundamental economic and human development challenges within the existing policy and institutional frameworks. Unfortunately, the country is not getting the rate of progress in key development indicators that is needed to keep the country on its path towards achieving its medium term goal, seriously challenging the prospects of reaching the vision of a prosperous and more equitable society, long into the future.

Today, living, or falling, into poverty, threatens millions of people in Uganda, with hundreds of thousands of households suffering from chronic food insecurity, while thousands more, as this report evidences, being constantly reminded of their risk of experiencing a situation of acute food insecurity.

Addressing poverty and the risk of food insecurity is an unavoidable moral and development imperative that requires a concerted effort of all sectors of society.

Some government interventions that contribute to alleviating urgent humanitarian needs, as well as promoting further growth in certain sectors, can be implemented within the existing legal and institutional frameworks. However, there is a growing recognition that, to achieve the transformational impact needed to eradicate the underlying causes of poverty, food insecurity, and promote sustainable economic growth in the country, fundamental structural changes are needed.

The following recommendations seek to provide guidance on key areas for strategic interventions which can be leveraged in the medium term to accelerate the transformational process needed for achieving the country's goals on poverty reduction, food security, and sustainable economic growth.

There is need to develop and adopt a comprehensive food insecurity reduction strategy in view of the recurrence of this type of social, economic, and humanitarian crisis, exacerbated by environmental degradation and extreme weather events. Food insecurity hits hardest the poorest segments of Uganda's population, and within this socioeconomic group, children, the elderly, and women of reproductive age are the most vulnerable to the long-term impacts of malnutrition. Children

exposed to malnutrition during their first years of life, including babies born to mothers exposed to malnutrition, have a higher risk of suffering from physical and/or learning disabilities that hinder their chances of developing their full productive and social potential; consequently, compounding to perpetuate trans-generational poverty.

The multi-dimensional nature of food security requires effective coordination, collaboration, and coherence among multiple economic and social sectors, as well as the engagement of key non-government stakeholders, at all levels of administration, from the national to the community level.

Due to the complex nature of food security, effective coordination is critical for achieving policy targets. Presently, several line ministries and specialized agencies are involved in the formulation and implementation of policy areas falling under the broad concept of food security. However, coordination among the various stakeholders is limited, unless a food insecurity situation becomes a crisis.

Limited understanding of the cross-sectoral and multi-dimensional nature of food security (linking e.g. water resources management; health; safe drinking water & sanitation; education; transport --and its impact on farm-to-market and terms-of-trade conditions--; as well as geography-related factors, such as bio-ecological characteristics and socio-cultural norms and production practices predominating in each region), along with the constellation of government and non-government agencies worsen the coordination challenge.

The Uganda National Food Security Strategic Action Plan 2017-2021 identifies key interventions needed to clarify current government agencies' roles and responsibilities regarding food security in the country as well as setting the stage for building the enabling environment for the implementation of the MAAIF' Agriculture Sector Strategic Plan (ASSP) 2015/16-2019/20, and Uganda Climate Smart Agriculture Programme 2015-2025.

These policy instruments and programs will contribute to bring the levels of coordination and focus needed for an integrated approach for eradicating food insecurity in Uganda. Consolidating the leadership and management structure of the government cluster responsible for food security will enhance coordination, coherence, and complementarity of all concerned stakeholders' interventions; effectively mitigating the risk of duplication, interference, and waste of limited resources.

Agricultural transformation: The agricultural sector is in urgent need of a major transformation to bring marginal productivity to substantially higher levels and boost its GDP contribution as to lift millions of citizens out of poverty. The agriculture sector plays and will continue to play an important role in ensuring food security in the country, both as the main source of domestically produced and consumed staples, as well as the main source of income for a large share of the rural population.

The agricultural sector needs to be modernized in almost every aspect of the food production chain (i.e. farm production, processing, distribution, and commercialization) through e.g. adoption of improved farming techniques and practices, use of climate-resistant seed / breed varieties, as well as access to affordable agricultural credit and risk transfer instruments (such as agricultural insurance schemes), all of which would increase productivity and output.

Addressing the challenges and opportunities for increased agricultural productivity in a changing climate: Climate change is expected to exacerbate the impact of extreme weather events and, with that, increased yield volatility. Major climate-driven problems affecting agricultural productivity in

Uganda were highlighted during the preparation of this report, including: drought, increased variability of rainfall patterns, and environmental degradation. Furthermore, the already inadequate water storage and control capacity of reservoirs and dams has been negatively affected across most areas due to external factors, particularly recurrent dry-spells and changing rainfall patterns; compounded by siltation and lack of maintenance of water points and dams.

The Government could improve the production and dissemination of local-context agricultural advisory services as well as promote farm level interventions to boost productivity (e.g. on-farm water efficiency, adoption of new or more climate-resilient seed varieties, post-harvest handling and storage, and agricultural diversification), while developing national adaptation and mitigation measures, including investments in the improvement and maintenance of water reservoirs, dams, irrigation schemes.

Adoption of key concepts of the Climate Smart Agriculture (CSA) framework as part of the agricultural sector investment planning processes could substantially increase agricultural productivity, while promoting the protection of the natural environment and ecosystem services needed to ensure the sustainability of agricultural output. The proposed Uganda Climate Smart Agriculture Programme 2015-2025, jointly implemented by the MAAIF and Ministry of Water and Environment, shall be adopted and implemented to accelerate agricultural transformation without creating new, potentially irreversible environmental and social challenges. The CSA Program's Result Areas, (i.e. (i) improved productivity and incomes; (ii) building resilience and associated mitigation co-benefits; (iii) value chain integration; (iv) research for development and innovations; (v) improving and sustaining agricultural advisory services; and (vi) improved institutional coordination), directly address key challenges and risks related to transforming agriculture. The adoption and implementation of the CSA Programme will ensure that agricultural improvements are carry out in an environmentally sustainable manner.

Enhance Social Protection: For large segments of the country's population, and particularly the rural poor, food security is strongly correlated to income stability. A drop in income, triggered by external shocks such as adverse weather events, leading to crop failure or loss of livestock, could bring greater food insecurity. The Government should invest in broadening social protection by e.g. improving the country's poverty-targeted safety net programs, building on the lessons learned during implementation of projects such as NUSAF3 in Uganda, as well as similar experiences in other African countries.

Public financial transfers that supplement the incomes of those most in need would reduce the number of households suffering chronic food insecurity as well as protect vulnerable households from suddenly experiencing acute food insecurity as a result of external shocks. Food provision in schools, especially in food insecure areas, contributes to protect children from suffering from malnutrition as well as reduce school absenteeism.

Building the Government's financial capacity to deal with climate and weather-related risks: Uganda is becoming increasingly exposed to climate- and weather-related shocks. The 2015/2016 El Niño event exacerbated the already fragile food security situation of millions of Ugandans and caused considerable damages and losses to farmers and pastoralists. Although the financial impact of the El Niño event has not yet been estimated, it is expected that the government will be compelled to assume its explicit and implicit contingent liabilities, including its role of serving as insurer of last resort of the poorest, who, without the immediate support of the government or humanitarian partners, will not be able to rebuild their livelihoods or the social and economic fabric of the affected communities.

As demonstrated by the ongoing food insecurity situation, key productive and social sectors in Uganda are vulnerable to climate variability and change, particularly the agricultural, water resource management, energy, and health sectors. This vulnerability is worsened by the social and

economic conditions that put a severe strain on the already limited and fragile natural resources and ecosystems, increasing the risks of environmental degradation; all of which compound to keep millions at risk of food insecurity.

Considering that most of the country's productive infrastructures have not been developed to cope with extreme weather events, and that farm production continues to be mostly rain-fed, there is an increasing risk to the sustainability of the country's social and development gains.

Despite high levels of fiscal exposure, the financial capacity of the Government of Uganda to deal with external shocks remains extremely limited. The Government relies heavily on financial support from international development and humanitarian partners as well as on budget reallocations that disrupt ongoing development and social programs.

In order to mitigate its implicit and explicit liabilities, the Government should engage in developing a National Strategy for Catastrophic Risk Financing that sets out the principles and financing mechanisms guiding the management and response to external shocks, including those caused by adverse climate and weather-related shocks. Having access to liquidity when it is most needed is critical for improving the efficiency, timeliness, and effectiveness of the response to potential or materialized crises, such as the ongoing acute food insecurity situation.

A comprehensive catastrophic risk financing strategy should complement and promote the following policies and respective implementation strategies: (a) climate change policy; (b) irrigation policy; (c) environment & wetland conservation policies; (d) water management policy; (e) food insecurity eradication policy; (f) national physical planning policy;(g) National data management policy; (h) national disaster risk insurance policy. In addition, the Government should:

- Establish the institutional framework and budget allocations for systematically monitoring the country's food security situation, taking into consideration the multi-dimensional nature of food security.
- Said monitoring system could be designed in a manner that facilitates the incorporation of physical, environmental, and production parameters (sharing data from e.g. UBOS, UNMA, MAAIF), as well as crop-yield forecasts; which in turn could be used to improve the targeting of government transfers along with the provision of agricultural extension services to farmers and pastoralists.
- Strengthen the capacity to scale up social safety nets in response to external shocks, such as extreme weather events that could trigger acute food insecurity crises (such as direct money transfers; provision of agricultural inputs) are not implemented in a timely manner.
- Develop affordable agricultural insurance schemes that complement similarly affordable credit for small and medium producers.

Box 1. Food insecurity and its core dimensions

"Food security exists when all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."

(i)**Physical availability of food**: addresses the supply side of food security and is determined by the level of food production, stock levels and net trade. Since it has become increasingly obvious that an adequate supply of food at the national or international level does not in itself guarantee household level food security, food access has been recognized as a key determinant of food security.

(ii)**Economic and physical access to food**: is influenced by market factors and the price of food as well as individual's purchasing power, which is related to employment and livelihood opportunities. The access dimension thus brings food security close to the poverty reduction agenda.

(iii)**Food utilization**: is commonly understood as the way the body makes the most of various nutrients in the food. Sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. Combined with good biological utilization of food consumed, this determines the nutritional status of individuals.

(iv)**Stability of the above three dimensions over time:** emphasizes the importance of reducing the risks of adverse effects of various factors (of natural, social, economic and/or political nature) on the other three dimensions: food availability, food access and food utilization.

Food security exists when all four dimensions are achieved concurrently.

Source: FAO (2008) An Introduction to the Basic Concepts of Food Security

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