
UGANDA ECONOMIC UPDATE [12TH EDITION]

DEVELOPING
THE AGRI-FOOD SYSTEM
FOR INCLUSIVE ECONOMIC GROWTH

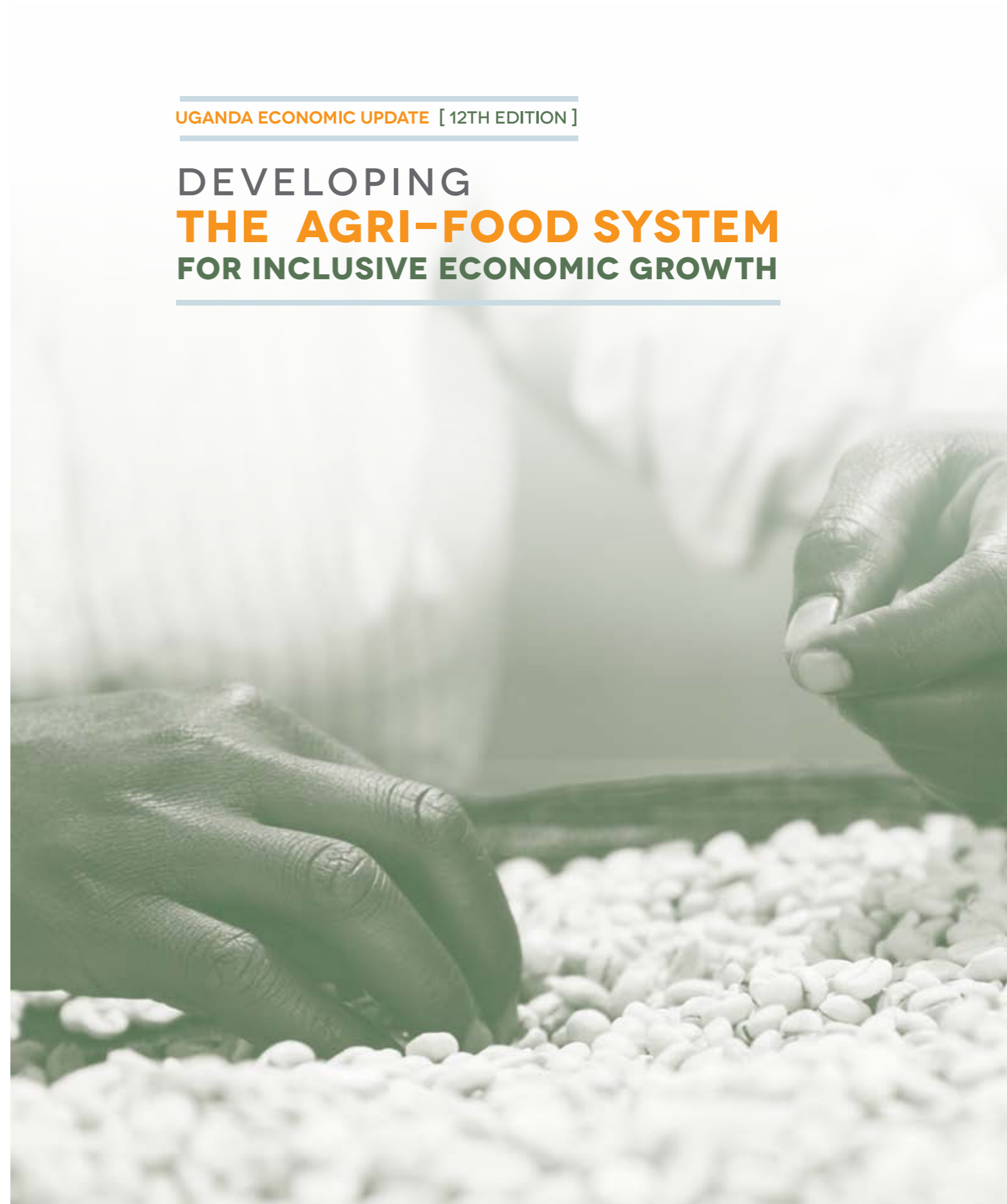
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Washington DC 20433
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Internet: www.worldbank.org

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FOREWORD

Uganda's agriculture sector plays a critical role in the economy. It accounts for 70 percent of employment, provides more than half of all exports and about one-quarter of GDP. The government has defined agriculture as a key economic sector in Uganda's transition into a middle-income country and, in this regard, has emphasized the importance of value addition, commercialization, and building resilience to climate change. Uganda's broader agri-food system also has the potential to provide significant employment opportunities for the country's predominantly young population.

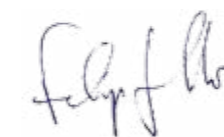
To realize agriculture's potential, however, the country will need to overcome a range of challenges in relation to agriculture productivity and vulnerability to sector-related risks. National agricultural output has grown at only about 2 percent per annum over the last five years, which is well below the population growth rate and below the 3-5 percent growth rates in other East African countries. Achieving agriculture productivity growth and resilience will require better technology, tenure security and sound land management practices, as well as the dissemination of knowledge on sustainable input use through effective extension services.

To boost the transformation of Uganda's agri-food system towards higher-value addition and job creation, policy implementation and regulation will need to be strengthened; institutional coordination improved; and private sector participation encouraged. The organization of producers and their integration into sustainable agri-food value chains should be supported to increase farmers' access to finance and markets, and for the competitiveness of the sector more broadly.

It's against this backdrop that I'm pleased to introduce the Twelfth Uganda Economic Update, which assesses the potential of Uganda's agri-food system to drive inclusive economic growth.

Harnessing growth opportunities in agriculture and enhancing private sector development are two of the five major thematic areas contained in the FY19/20 Budget Strategy. Due to its insights and policy recommendations in both these areas, this report comes at a critical time not only to inform budget decisions for the next year, but also to advance public discourse and policy decisions more broadly.

In line with the structure of earlier editions of the Uganda Economic Update series, this report reviews recent economic developments, provides an outlook for the macro-economy, and then delves into the special topic of Uganda's agri-food system.



Carlos Felipe Jaramillo
Country Director
Eritrea, Kenya, Rwanda and Uganda
Africa Region

ABBREVIATIONS

ACF	Agricultural Credit Facility	NEO	Net Errors and Omissions
AGRA	Alliance for a Green Revolution in Africa	NPL	Non-Performing Loans
BoU	Bank of Uganda	NUCAFE	National Union of Coffee Agribusiness and Farm Enterprises
CA	Current Account	OECD	Organization for Economic Co-operation and Development
CDD	Community-Driven Development	OPEC	Organization of the Petroleum Exporting Countries
CCAFS	Climate Change, Agriculture and Food Security	PARM	Platform for Agricultural Risk Management
CPI	Consumer Price Index	PFM	Public Financial Management
CSA	Climate Smart Agriculture	PIM	Public Investment Management
DAES	Directorate of Agricultural Extension Services	PIP	Public Investment Plan
DDA	Dairy Development Authority	PPP	Purchasing Power Parity
DRC	Democratic Republic of Congo	ReHoPE	Refugee and Host Population Empowerment
EAC	East African Community	SACCO	Savings and Credit Cooperative Organizations
EFU	Energy, Fuel, and Utilities	SDG	Sustainable Development Goals
EWS	Early Warning Systems	SLAAC	Systematic Land Adjudication and Certification
FAO	Food and Agricultural Organization	SMEs	Small and Medium Enterprises
FDI	Foreign Direct Investment	SSA	Sub Saharan Africa
FTE	Full-Time Labor Equivalent	TEGF	Tax Expenditure Governance Framework
FY	Financial Year	TFP	Total Factor Productivity
GDP	Gross Domestic Product	UAE	United Arab Emirates
IC	Information and Communication	UAIS	Uganda Agriculture Insurance Scheme
ICT	Information Communication and Technology	UBOS	Uganda Bureau of Statistics
IMF	International Monetary Fund	UCCCU	Uganda Crane Cooperative Creameries Union
ITC	International Trade Center	UCDA	Uganda Coffee Development Authority
LIS	Land Information System	UN	United Nations
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries	Ush	Uganda Shilling
MoFPED	Ministry of Finance, Planning, and Economic Development	US	United States
NAADS	National Agricultural Advisory Services	US\$	United States Dollars
NAEP	National Agricultural Extension Policy	VAT	Value Added Tax
NARO	National Agricultural Research Organization	WFP	World Food Program
NARS	National Agricultural Research System	WRS	Warehouse Receipts Systems
ND-GAIN	Notre Dame Global Adaptation Initiative	YLP	Youth Livelihood Program
NDP	National Development Plan	Y/Y	Year-on-Year

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Finally, we would like to thank the Permanent Secretary of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Mr. Pius Wakabi Kasajja, and his staff for their continuous commitment and close collaboration.

KEY MESSAGES

To enhance the productivity of primary production, access to and the adoption of high-quality agricultural inputs is essential.

State of the economy

Real GDP growth rebounded strongly to 6.1 percent in FY17/18, from 3.9 percent the previous year. The rebound was largely driven by a pick-up in investments and exports, and on the back of strengthened credit to the private sector and good weather. Consequently, services, particularly information and communications, sustained strong growth, and food crop production recovered. In per capita terms, however, this rebound translates into a 3.1 percent growth rate, because of the rapidly growing population. Moreover, the heavy reliance on rain-fed and subsistence agriculture drives the volatility in economic growth at the margin, with spillover effects on export earnings, and a considerable impact on the poor's income.

Despite the rebound in economic growth in FY17/18, fiscal revenues stagnated, while the expenditure mix deteriorated further, with excessive current spending and under-execution in capital spending. Current spending exceeded last year's outcome by a striking 1.4 percent of GDP and was above the budgeted amount by 32 percent. At the same time, the larger current spending was not used to finance investments in human capital. Therefore, one of the government's priorities should be to rein in current spending and thereby keep public debt under control. Meanwhile, capital spending was 0.6 percent of GDP lower compared to the year before and fell short of the budgeted amount by 60 percent. Compared to peers, capital spending in Uganda stood at 4.4 percent of GDP in FY17/18, which is less than half the size of Rwanda's capital outlays at 10.3 percent of GDP, and only 60 percent of Kenya's at 7 percent of GDP. Combined with deficiencies in the 'quality at entry' of projects, cost escalations, and poor quality of some completed projects, this under-spending is constraining Uganda's ambitions for rapid growth and socio-economic transformation. Therefore, concerted efforts are required to improve public investment management.

The widening of the fiscal deficit to 4.8 percent of GDP in FY17/18, from 3.9 percent in the previous year, has kept public debt on a steep upward trajectory. Public debt has risen to 41 percent of GDP, and new external borrowing so far in FY18/19 is largely on

commercial terms. The latter increases principal and interest payments over the short and medium term and makes debt more vulnerable to external shocks. Larger interest payments also reduce the space for productive fiscal spending. Budget revenues will need to pick up considerably to enable government co-financing of capital expenditures. Thus, reforms to enhance domestic revenue mobilization need to remain a priority, including a reduction in tax exemptions, and where borrowing is required, concessional financing should be sought.

While the growth outlook for Uganda looks positive, risks are tilted to the downside. Real GDP growth is projected at around 6 percent, driven by an anticipated increase in investments, especially to support developments in the oil sector. However, the positive economic expectations could dissipate if political tensions were to escalate. Continued reliance on rain-fed and subsistence agriculture remains a downside risk, while failing to rein in current spending could jeopardize Uganda's macroeconomic stability and worsen debt vulnerabilities. The latter could be further aggravated if Uganda's export performance were to be negatively impacted by continued volatility in key export markets such as the Democratic Republic of Congo (DRC) and South Sudan.

Developing the Agri-Food system for inclusive Economic Growth

Uganda's agriculture sector plays a critical role in the economy and has the potential to make an even greater contribution in the future. It accounts for 70 percent of employment, provides more than half of all exports and about one-quarter of GDP. Both domestic and regional demand for agriculture commodities is on a rapid rise, and an increasing number of urban dwellers demand more processed food and protein-rich diets. It is projected that by 2050, about 102 million people will live in Uganda. These projections provide massive opportunities for Uganda's agriculture sector and wider agri-food system. All steps along the value chain – food production, input provision, processing, handling, marketing, transport and

retail – require labor, both skilled and unskilled, and can contribute to inclusive economic growth. Uganda's agri-food system has the potential to enhance employment opportunities for the country's predominantly young population, the majority of whom live in rural areas. Diverse agribusinesses, particularly along the dairy, maize and coffee value chains, have developed in recent years, linking farmers to inputs, markets and finance, and improving rural livelihoods. Yet to harness fully the sector's unique opportunities, Ugandan agriculture needs to spur this nascent agribusiness dynamism and continue its shift from low-value smallholder farming towards a higher value-added agri-food sector.

The government has defined agriculture as a key economic sector towards Uganda's transition into a middle-income country and emphasizes the importance of value addition and commercialization. However, to realize agriculture's potential, the country will need to overcome a range of challenges to agriculture productivity growth. National agricultural output has grown at only 2 percent per annum over the last five years, which is well below the population growth rate and below the 3-5 percent growth rates in other East African countries. To address this, the government has undertaken a series of policy and regulatory measures, ranging from new policies on irrigation and seeds to the setup of new agricultural finance mechanisms. These measures have, however, been insufficient, and sometimes even counterproductive. A range of structural and institutional challenges still need to be overcome and can be grouped along the following themes: (i) agriculture productivity and resilience of agricultural systems and rural livelihoods to weather and climatic shocks; (ii) producer arrangements and value chain competitiveness; and (iii) regulatory and institutional environment.

To boost the transformation of Uganda's agri-food sector, critical policy weaknesses need to be addressed and institutional coordination improved. To enhance the productivity of primary production, access to and the adoption of high-quality agricultural inputs is essential. This requires a strengthening of regulatory measures,



land tenure security, enhanced input quality controls, and fully implementing ongoing extension reforms to increase focus on knowledge transfer. Given increasing climate variability and pest outbreaks in Uganda, it is vital to increase the resilience of agricultural systems and rural livelihoods. To this end, farmers should be equipped with climate-smart land, water and livestock management practices, irrigation infrastructure, and access to climate and disaster-risk information. Producer arrangements and integration into agri-food value chains should be supported to increase farmers' access to finance and markets and the competitiveness of the sector more broadly. Reaping the full benefit of observed sector trends will, finally, require strengthening institutional processes and stakeholder coordination, as well as steering public agriculture investments towards the provision of public goods such as research, extension, and infrastructure.



PART ①

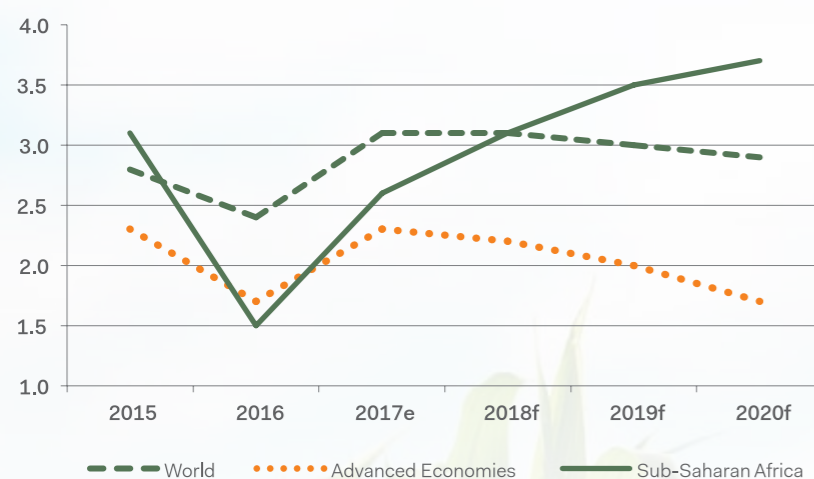
STATE OF
THE ECONOMY

01 Recent Economic Developments

1.1 The current global growth cycle is likely to have reached its peak¹

Global economic growth has plateaued and is expected to moderate to 3 percent in 2018 from 3.1 percent in 2017 (Figure 1). Global growth remains robust, but has softened in recent months, as manufacturing activity and trade have shown signs of moderation. The latter could, among others, be due to the trade-related uncertainty triggered by the tariff war between the United States (U.S.) and China. In addition, continued tightening of monetary policy in the U.S. has led to an appreciation of the U.S. dollar, which, in turn, has increased debt service payments for companies and led to a redirection of portfolio flows to the U.S. The European Central Bank has also continued to reduce the size of its asset purchase program, which had stimulated private credit growth and, in turn, supported growth in domestic demand. Oil prices are, meanwhile, higher than previously expected, and global inflation is gradually trending up from its recent lows. Overall, growth in advanced economies is expected to decelerate to about 2.5 percent over the next two to three years, driven largely by the gradual tightening of monetary policy in major advanced economies, the negative impact on disposable income and consumption from higher energy prices, and the waning effect of the U.S. fiscal expansion.

Figure 1: Global output growth has strengthened



Source: Global Economic Prospect, World Bank, June 2018
Aggregate growth rates calculated using constant 2010 U.S. dollar GDP weights.

Global growth remains robust, but has softened in recent months, as manufacturing activity and trade have shown signs of moderation.

1. This section is based on the World Bank, *Global Economic Prospects, June 2018*; World Bank, *Africa Pulse October 2018*, and International Monetary Fund, *World Economic Outlook, July 2018*.

2. World Bank, *Commodities Price Data Sheet, October 2018*.

3. This section is based on World Bank, *Global Economic Prospects, June 2018*; World Bank, *Africa Pulse October 2018*, and International Monetary Fund, *World Economic Outlook, July 2018*.



Commodity prices increased in 2017 and are expected to stabilize in 2018. Crude oil prices averaged US\$53 per barrel (bbl) in 2017, a 23 percent increase over their 2016 levels, and are currently averaging at around US\$70/bbl in 2018.² An agreement between most Organization of the Petroleum Exporting Countries (OPEC) members, and some non-OPEC oil producers, to maintain output cuts until the end of 2018 helped boost prices in late 2017 and early 2018. Agricultural commodity prices, meanwhile, rose moderately in the first quarter of 2018, following three years of price stability. Higher prices mainly reflected fears of drought supply disruptions in South America.

1.2 Growth in Sub-Saharan Africa is recovering³

Growth in Sub-Saharan Africa (SSA) is projected to pick up to 2.7 percent in 2018, from 2.3 percent in 2017. This upswing reflects favorable external conditions such as higher commodity prices that encouraged rising oil and metals production, good weather that translated into improved agriculture production, and increased domestic demand. Output growth in SSA is expected to firm to an average of 3.5 percent over 2019–20, as the tepid recovery strengthens in Angola, Nigeria, and South Africa

– the region's largest economies. Nevertheless, overall SSA growth will remain below its long-term average. Higher global interest rates and weaker-than-expected commodity prices are the main external downside risks. Domestic risks include heightened conflicts, delayed fiscal adjustment, and weak implementation of structural reforms.

In East Africa, economic growth is broadly expected to increase in 2018. Kenya, Uganda's main trading partner, suffered a dent in its growth trajectory in 2017 (4.9 percent) caused by poor rains that lowered agriculture output and curtailed hydropower generation, political uncertainty, and slower credit growth. In 2018, economic growth is expected to rebound to 5.7 percent supported by stronger manufacturing output, favorable weather and agricultural production, and a rebound in remittances. In Rwanda, increased agriculture production and higher infrastructure investment is expected to push growth from 6.1 percent in 2017 to over 7 percent in 2018. In Tanzania, meanwhile, growth is projected to decelerate to 6.6 percent in 2018. Unfortunately, although president Salva Kiir and his former deputy Riek Machar signed a power-sharing deal in September 2018 – under strong international pressure – South Sudan's growth outlook over the next year remains dire and real GDP is projected to further contract.

1.3 Economic growth rebounds in Uganda

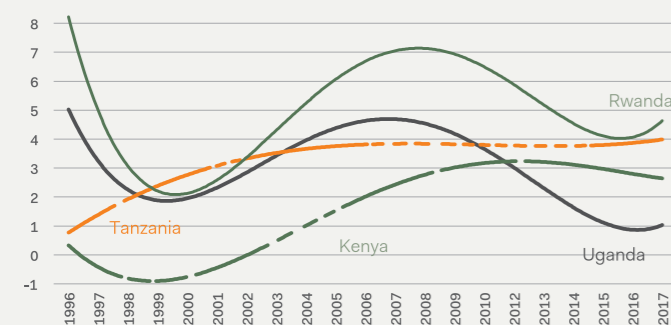
After growing at 3.9 percent in FY16/17, real GDP growth accelerated to 6.1 percent in FY17/18. This is a stronger recovery than the 5.5 percent that was projected in the previous Uganda Economic Update, released in May 2018, and follows a stronger than expected rebound in food crop production, and an unexpected and sudden pick-up in private sector credit in the second half of FY17/18.⁴ Once population growth is accounted for, however, the economy's per capita growth rate is only about 3.1 percent in FY17/18 (see Box 1).⁵

Box 1: Uganda's mounting demographic pressures

A comparison of per capita growth rates across East African countries indicates the acute demographic pressures Uganda is exposed to. Uganda's real per capita GDP in Purchasing Power Parity (PPP) terms – a measure that adjusts for the purchasing power across countries – shows a significant per capita growth slowdown since 2010 when contrasted with developments in Kenya, Rwanda, and Tanzania (Figure B1).

In other words, while in absolute terms real GDP per capita (in PPP terms) has more than doubled since 1992 to US\$1698, Uganda is nevertheless falling behind Kenya (US\$2993) and Tanzania (US\$2683) and has recently been overtaken by Rwanda (US\$1854) in 2017. Uganda has one of the world's highest population growth rates, with almost half of its people under the age of 15.

Figure B1: Real per capita GDP (PPP) growth rate, in percent (smoothened)



Source: World Development Indicators, World Bank staff calculations

The population increased from 24 to 35 million between 2002 and 2014, and, despite a reduction in fertility from an estimated 6.7 children per woman in 2010 to 5.7 in 2015, the population is expected to be above 80 million in 2040. Uganda's fertility rate remains higher than in most SSA countries and is declining at a slower pace.⁶

The rebound in real GDP has largely been driven by growth in Information and Communication (IC) services, food crop production and the construction sector (Table 1). The provision of IC services rose 14 percent per annum over the past two years, accelerating in FY17/18 to 15.2 percent, making this sector the biggest contributor to total GDP growth. Communication output continues to grow horizontally, as the consumer base widens, and vertically, as spending on a variety of services expands. With favorable weather conditions, food crop production has accelerated to 5.3 percent – a pace not seen over the past eight years. The construction sector grew strongly again in FY17/18 at a rate of 6.9 percent,

which is the third highest contribution to overall growth and reflects the continuing benefits provided by the public investment program.

4. World Bank, *Uganda Economic Update, 11th Edition, Financing Growth and Development: Options for raising more domestic revenues*, May 2018

5. Based on UBOS data.

6. The population in Uganda grew on average 3.4 percent over the past ten years, compared to 2.6 percent in Kenya and Rwanda, and 3.1 percent in Tanzania (World Development Indicators).

Table 1: FY17/18 Real GDP (percent change unless otherwise indicated, selected sub-sectors)

	GROWTH	SHARE OF GDP	CONTR. TO GROWTH
AGRICULTURE, FORESTRY & FISHING	3.8	22.8	0.8
Cash Crops	4.6	1.9	0.1
Food Crops	5.3	12.0	0.6
Livestock	2.0	4.0	0.1
Forestry	2.5	3.8	0.1
Fishing	-2.1	1.1	0.0
INDUSTRY	6.1	20.1	1.1
Mining & Quarrying	26.1	1.9	0.4
Manufacturing	1.7	7.9	0.1
Construction	6.9	7.2	0.5
SERVICES	7.7	57.1	4.0
Trade & Repairs	2.2	11.5	0.2
Transportation & Storage	5.6	3.1	0.2
Accommodation & Food Service Activities	1.2	2.5	0.0
Information & Communication	15.2	11.4	1.5
Financial & Insurance	8.3	3.2	0.2
Real Estate Activities	6.5	5.9	0.4
Education	6.7	6.4	0.4

Source: UBOS

The bumper harvest lifted agriculture growth to 3.8 percent in FY17/18 from 1.6 percent in FY16/17 (Figure 2). Food crop production grew at about 4.5 percent in 2017, and major crops continue to include maize, cassava and beans.⁷ Sweet and Irish potatoes had a particularly good season and constituted about 25 percent of the value of food crop production in 2017 from 11 percent in 2013. Cash crop production decelerated to 4.6 percent in FY17/18 from 7.7 percent last year, and 7.9 percent the year before, despite the favourable weather conditions. Coffee output, which accounts for half of the cash crops, remained largely at last year's level, growing at 1.5 percent in real terms, compared to an acceleration of 17 percent the prior year. Cotton and sugar cane production, representing one-third of production, are now the second and third largest cash crops. Cotton production grew at 25 percent in FY17/18 – the fourth straight year of strong growth – which mirrored the 26 percent rise in the global

cotton price over the same period.⁸ Meanwhile, sugar cane production turned the corner and grew positively, after two years of decline. Tobacco production, on the other hand, fell more than 50 percent, which continued its precipitous decline over the last four years and could be partly attributed to the decline in global tobacco prices since 2014.⁹ Beyond crop production, the 2.1 percent decline in fishing was offset by a rebound in forestry and livestock, which grew by 2.5 and 2 percent, respectively, compared to a year ago.

Cash crop production decelerated to 4.6 percent in FY17/18 from 7.7 percent last year, and 7.9 percent the year before, despite the favourable weather conditions.

7. Disaggregated food crop information is currently only available by calendar year.

8. World Bank Commodities Price Forecast, April 2018.

9. World Bank Commodities Price Forecast, April 2018.

Figure 2: Agriculture – food crop production driving rebound (sectoral growth rate, contribution to sectoral growth)

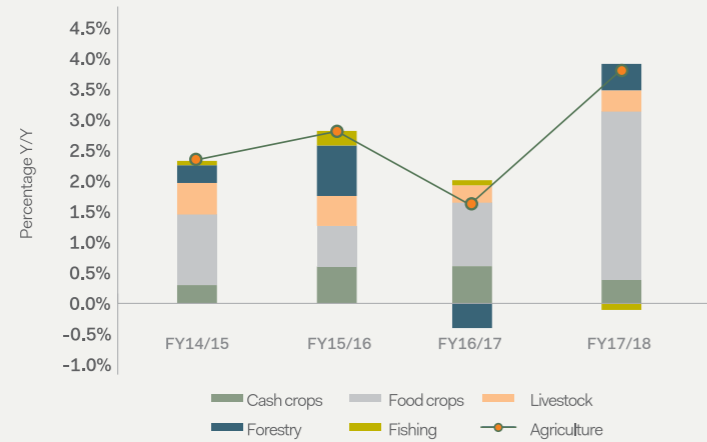


Figure 3: Services – IC services continue to dominate (sectoral growth rate, contribution to sectoral growth)

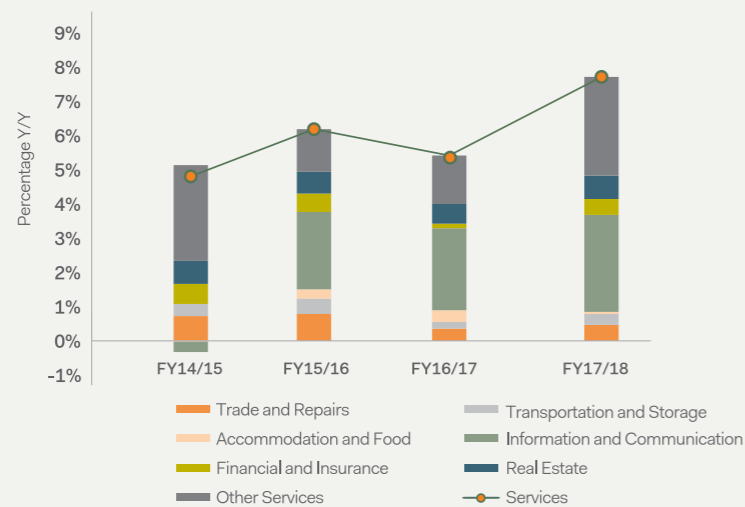
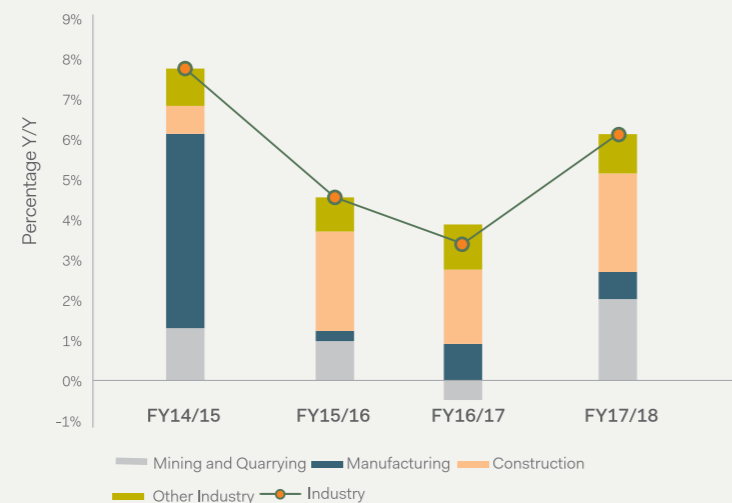


Figure 4: Industry – a rebound in mining led to a turnaround (sectoral growth rate, contribution to sectoral growth)



Source for Figures 2-4: UBOS

Although the agriculture sector accounted for only 0.8 percent of the overall growth rate of 6.1 percent in FY17/18 (Table 1), the sector's economic contribution extends well beyond just the primary sector and into the wider food system. The sector employs about 70 percent of the country's labor force and is, thus, critical for household income growth and consumption, which then stimulates growth in other sectors. Agriculture-based products (i.e. both primary and processed products) account for more than 50 percent of all exports, and the wider farm-to-table food production and consumption chain supports growth in the manufacturing, trade (wholesale and retail), financial, and transport and storage sub-sectors. Furthermore, with Uganda's burgeoning population, greater demands will be placed on a food system that can ensure a nutritious and affordable diet, delivered in a climate-smart and sustainable way.¹⁰ This is discussed further in Section 3.

Agriculture, which remains mostly rain-fed, also determines the livelihoods of most Ugandan households. Uganda remains a predominantly rural country, with three quarters of the population still residing in rural areas. Thus, the performance of the agriculture sector, and corresponding environmental shocks, has been closely linked to household income growth, and subsequently, to poverty reduction (Hill and Mejia, 2016).¹¹ In fact, the drought and pest infestations in 2016 and 2017 largely explained the increase in poverty incidence between FY12/13 and FY16/17 from 19.7 to 21.4 percent (under the national poverty line), as households engaged in agriculture accounted for most of the increase.¹² This confirms that most households in Uganda remain highly vulnerable to adverse environmental shocks.

Barring severe shocks, the recovery in agriculture in FY17/18 will help Uganda return to its poverty reducing path. The 3.8 percent growth of the agricultural sector in FY17/18 is anticipated to enhance the incomes of Ugandan households, particularly those in rural areas and at the bottom of the income distribution. Thus, poverty is expected to start returning to at least its 2012/13 levels. However, returning to a sustained path of poverty reduction will require a considerable effort to increase resilience to adverse environmental shocks, modernize agriculture production and practices, develop the agro-processing/business value chain, and improve the level

and allocation of public funding to the agriculture sector (see Box 2). In addition, accelerating poverty reduction will also require larger human capital investments, such as in the education and health sectors, and the expansion of social protection programs. This is discussed further in Section 3.

The services sector has continued to expand strongly, supported by robust growth in IC services, financial/ insurance services and real estate activities (Figure 3). IC services accounted for more than one-third of growth in the services sector, which has been driven primarily by sustained growth in data usage and investments to upgrade infrastructure to support both 3G connectivity country-wide and the initial roll-out of 4G services. Financial and insurance services rebounded with growth of 8.3 percent in FY17/18 after a deceleration the year before, when an increase in non-performing loans (NPLs) led to more cautious behavior by commercial banks. Growth in real estate activities and education services also remained robust, with growth rates of 6.5 and 6.7 percent, respectively.

Driven by construction and mining, industrial production grew at 6.1 percent in FY17/18 from 3.4 percent last year (Figure 4). Construction grew at around 6.9 percent, and together with mining (26 percent growth rate) accounted for three quarters of the growth recorded in industrial production. The government's public investment program continues to support robust growth in the construction sector. Manufacturing, meanwhile, continued its tepid growth of the last three years and only expanded by 1.7 percent, while electricity production grew at 6.3 percent in FY17/18, building on the positive results achieved in FY16/17, when growth in electricity production doubled to 8.6 percent. Unfortunately, the manufacturing sector is still feeling the effects of the crisis in South Sudan, which has led to a fall in demand from that market.

10. *Enabling the business of agriculture*, World Bank (2017)

11. *Thus, factors that positively contribute to the development of the agricultural sector (such as enhanced access to markets and regional trade integration) also contribute to the reduction of poverty.*

12. *Preliminary finding from the forthcoming World Bank, Uganda Poverty Note (2018)*

Box 2: Improving the level and allocation of public funding to the agriculture sector¹³

The share of public expenditure in support of the agriculture sector (PEAS) within overall final public expenditure averaged 4 percent between FY13/14 and FY17/18.¹⁴ This is well below the advisable minimum of 10 percent to which African Union member states committed in the Maputo and Malabo declarations. Of this, the National Agricultural Advisory Services (NAADS) was the biggest stand-alone expenditure item and received on average about 30 percent of total final PEAS between FY13/14 and FY17/18. This was followed by rural development-related ministries, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and the National Agricultural Research Organization (NARO) that received about 22, 19, and 8 percent, respectively.¹⁵ During this period there was, unfortunately, a sharp decline in per capita PEAS with, for example, a fall of per capita spending in the Northern Region from over Ush 8,000 in FY13/14 to less than Ush 3,000 in FY16/17.

Alongside strong growth in spending on processing and marketing, PEAS has increasingly focused on the provision of input subsidies. As shown in Figure B2, the share of PEAS going to these subsidies has increased from about 19 percent in FY13/14 to about 25 percent in FY17/18 (with a high of 33 percent in FY15/16). This has largely been at the expense of extension and advisory services, whose share has declined from about 37 percent in FY13/14 to 10 percent in FY17/18. Furthermore, the 'other' category includes important items such as inspection and quality control, feeder roads, and storage – whose combined share of total PEAS is only about 4 percent. Spending on research was starting to increase, but this was cut from 17 to 11 percent of the total budget in FY17/18. The share of public spending on processing and marketing continues to grow (about 21 percent in FY17/18), and the irrigation budget more than doubled in FY17/18 to about 12 percent of the total.

Figure B2: Relative share of agriculture sub-functions in final PEAS



Source: Preliminary findings from the forthcoming World Bank, Agriculture Sector Expenditure Review (2018). Budget expenditures were used for FY17/18, not actuals.

Of the final PEAS (about 20 percent) that explicitly targets agricultural sub-sectors¹⁶, there has been an increasing emphasis on cash crops – particularly coffee – and almost no targeting of food crops. In FY15/16 the share of final PEAS allocated to cash crops reached as much as 50 percent of funds targeting sub-sectors. Coffee has been the dominant commodity within the cash crops sub-sector. Budget allocations to the Uganda Coffee Development Authority (UCDA) almost quadrupled between 2014/15 and 2015/16. The shares of tea and other cash crops have remained close to zero over the period. Within the livestock sub-sector, the focus has been on beef and, to a lesser extent, dairy products. Other crops – particularly food crops – and fisheries received limited explicit attention from a budgetary perspective.

13. Preliminary findings from the forthcoming World Bank, Agriculture Sector Expenditure Review (2018)

14. Here PEAS includes all subsidies (input and capital), research, extension and advisory services, storage, infrastructure (feeder roads, irrigation etc.), inspection and quality control, training, and markets and marketing, that is provided through, for example, MAAIF, National Forestry Authority, Uganda Exports Promotion Board, and six semi-autonomous government agencies, including NAADS, NARO, Cotton Development Organisation (CDO), Uganda Coffee Development Authority

(UCDA), Dairy Development Authority (DDA), and National Animal Genetic Resource Centre and Data Bank.

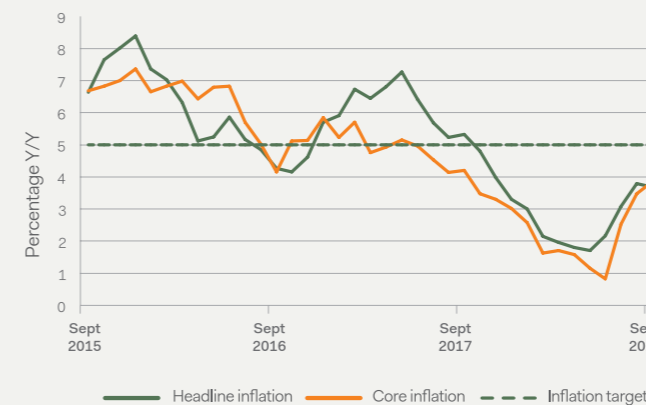
15. Rural development-related ministries include the Ministry of Local Government, the Ministry of Water and Environment, the Ministry of Trade, Industry and Cooperatives, and the National Forestry Authority.

16. The remainder benefits the agriculture or rural sector as a whole – i.e. most recurrent costs and spending on infrastructure and multipurpose projects.

1.4 Headline and core inflation remain below the monetary policy target of 5 percent

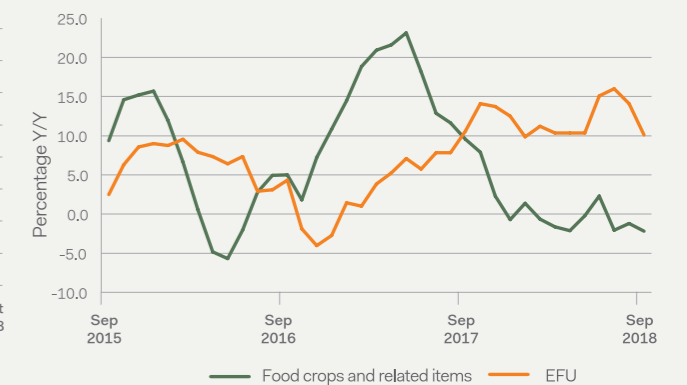
Recent abundant harvests translated into a long spell of disinflationary pressures, but with the output gap closing, core inflation rose, and inflation accelerated starting July 2018 (Figure 5). Core inflation, the consumer price index excluding volatile energy and food prices, shot up from 0.8 percent in June 2018 (y/y) to 3.9 percent in September 2018 (y/y). This was largely driven by an increase in communications prices following the impact of the Over-The-Top (OTT) tax. Food prices, however, continued to decline through September, offsetting the double-digit price increases in energy, fuel and utilities (Figure 6). Energy prices rose due to higher prices of liquid fuels, especially petrol and diesel. The acceleration in petrol and diesel prices was driven by rising global oil prices and amplified by domestic factors such as the increase in the excise tax on fuel and the sudden depreciation of the shilling (Figure 6).

Figure 5: Inflation decelerates



Source: Bank of Uganda

Figure 6: Food prices drop and Energy/Fuel/Utilities (EFU) rise



1.5 Private sector lending accelerates

Responding with a delay to the reduction in the monetary policy rate, private sector credit grew by 7.1 percent in FY17/18 (adjusted for inflation) compared to zero growth in FY16/17 (Figure 7). Since January 2016, the monetary policy rate has been reduced from 17 percent to a low of 9 percent in February 2018. However, private sector credit growth did not mirror this reduction in the policy rate. It was only after a year and a half of mostly negative monthly growth rates since July 2016 (y/y), that private sector credit growth, adjusted for inflation,

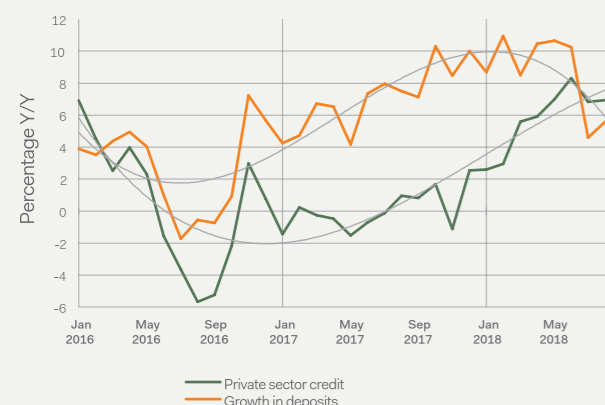
started picking up in December 2017 to 2.5 percent. It accelerated again in March 2018, reached close to 6 percent in April, and 8.3 percent in June. This pickup coincided with a rapid increase in deposits, a decline in NPLs from 7.2 percent in September 2017 to 4.4 percent in June 2018, and a decline in average domestic currency lending rates, in real terms, to 15.5 percent in June from 19 percent in February 2018.¹⁷ Similarly, the foreign currency lending rates declined from an average of over 10 percent in 2016 to below 8 percent in the first half of 2018.

17. As a percentage of total gross loans

The agriculture sector has seen a strong recovery in private sector credit growth (Figure 8). Starting in January 2017, credit to the agriculture sector has seen double digit growth, financing primarily farming production such as crops, livestock and poultry, as well as the food processing industry. Credit growth to agriculture had risen to almost 30 percent in December 2017 (y/y), in real terms, and has continued with the robust expansion averaging around 18 percent during the first half of 2018. This upsurge in agriculture credit growth was largely

due to an increased uptake of the Agricultural Credit Facility (ACF), whose marketing has been enhanced and terms adjusted to allow eligibility of more products along the agricultural value chain.¹⁸ However, given that ACF focuses mainly on commercialization and value addition, smallholders still struggle to access finance (see Section 3). Credit to manufacturing also grew significantly, especially since January 2018, after a long spell of negative lending growth rates to this sector since September 2016.

Figure 7: Private credit growth is rising (real terms)



Source: Bank of Uganda

Figure 8: Strong agriculture credit growth (real terms)



Commercial banks continue to have high net interest margins, which is attributed to high overhead costs, in addition to costly due diligence, and high costs associated with branch expansion into rural areas.¹⁹ The ratio of overhead costs to total assets appears to be the second highest in the East African Community (EAC) after Rwanda, and much higher than international levels. High salaries constitute the largest share of overhead costs in Uganda, due to the scarcity of qualified professionals, which also hampers financial innovation and development of the financial sector. Banks in Uganda also have a limited number of large customers, which means due diligence for Small and Medium Enterprises (SMEs) and consumers is costly. As a result, domestic credit to the private sector remains shallow, hovering at around 13–15 percent of GDP for the past six to seven years due to the lending challenges discussed and given a backdrop

of high yields on government securities. In fact, although there is liquidity in the banking system (see paragraph below), which indicates that government borrowing is not necessarily crowding out credit to the private sector, a history of government spending pressures, supplementary budgets and sudden domestic borrowing appears to encourage commercial banks to limit lending to the riskier private sector and to retain funds for government lending.

18. The Agricultural Credit Facility was set up by the government in partnership with commercial banks, the Uganda Development Bank, micro deposit taking institutions and credit institutions. The scheme's operations started in October 2009, with the aim of facilitating the provision of medium and long-term financing to projects engaged in agriculture and agro-processing, focusing mainly on commercialization and value addition.

19. See World Bank (2015) Uganda – Financial Sector Review, June

The banking sector continued to exhibit signs of a strong recovery. NPLs have decreased after the closure of Crane Bank and substantial NPL write-offs in the banking system. After peaking at 10.5 percent in December 2016, the ratio of NPLs to total gross loans was, as discussed, down to 4.4 percent in June 2018. However, the continuous build-up of loans in the “watch” credit risk category (12 percent of total loans) might be signaling a future increase in NPLs. The highest concentration of NPLs were in the agriculture, trade and commerce, and building and construction sectors. Meanwhile, the capital adequacy ratio continued to be above 20 percent, which is well above the regulatory requirement of 8 percent of risk-weighted assets. The banking sector also continued to exhibit plenty of liquidity in the system, with liquid assets to total deposits being close to 47 percent in June 2018. Return on assets and return on equity have also improved from a year ago: 2.8 percent and 16.7 percent respectively in June 2018, compared to 1.7 percent and 10.2 percent in June 2017.

1.6. The strong rebound in imports and slower remittances widened the current account deficit

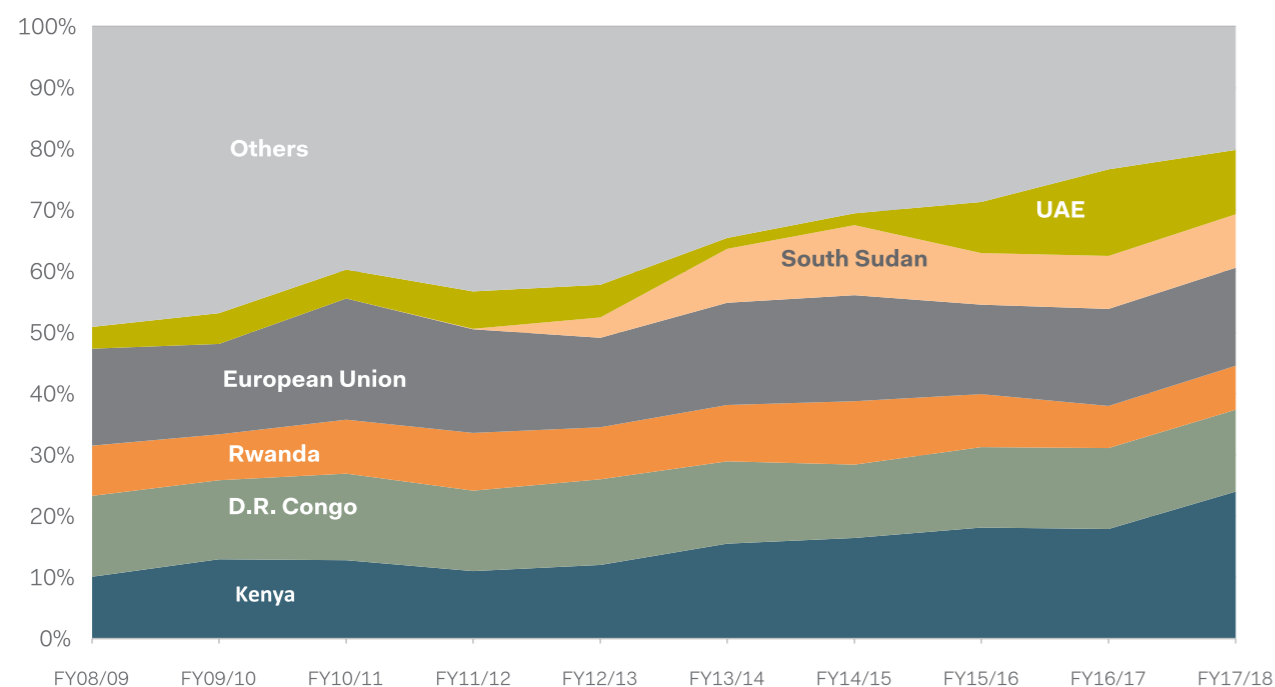
The rebound in growth led to an acceleration in import volumes, which widened the current account deficit to 5.8 percent of GDP in FY17/18, from 3.3 percent the year before (Table 2). Growth in import volumes outpaced higher exports, which expanded the merchandise trade shortfall from 5.9 percent of GDP in FY16/17 to 7.2 percent in FY17/18. During this period, the terms of trade improved 2.5 percent, as the rise in exports prices (5.5 percent) was almost twice as fast as that of import prices (2.5 percent). Oil imports grew 31 percent, reflecting primarily higher oil prices and larger volumes, while non-oil imports rose 16 percent, mainly driven by chemical products and investment goods such as machinery and vehicles. The deficit in services, meanwhile, expanded to 1.5 percent of GDP in FY17/18, an increase of 0.5 percentage points compared to last year. This was largely the consequence of stagnating travel and tourism receipts, and much stronger outflows in transport and other business services. Income and transfers net inflows fell short of expectations and amounted to only 2.9 percent of GDP, a sizable reduction from 3.6 percent of



GDP in FY16/17. Typically, income and transfers help offset 45 to 50 percent of the shortfalls in the merchandise and services accounts, but in FY17/18 it only helped offset roughly one-third of the shortfall.

Merchandise exports continued to perform well, supported by strong growth in tea and renewed exports of food crops, particularly maize and beans. Merchandise exports grew by 9.4 percent in FY17/18, following the 18.3 percent acceleration in FY16/17. Export growth during FY16/17 was driven largely by coffee exports, which increased 39 percent, as prices and volumes rose around 18 percent during that period. With prices falling by about 5 percent, the value of coffee exports has stagnated in FY17/18. The exports of other traditional cash crops picked up significantly, such as tea exports, which grew 35 percent. The performance of some non-traditional exports was also strong, with beans and maize increasing by 114 and 41 percent, respectively. In fact, in FY17/18 the share of exports of these two food crops far exceeded the share in exports of the traditional cash crops such as cotton, tea and tobacco. Unfortunately, Uganda's main export markets continued to narrow in FY17/18 (Figure 9), with only five countries (Kenya, DRC, Rwanda, United Arab Emirates (UAE) and South Sudan) accounting for about 65 percent of all exports.

Figure 9: Uganda's main export markets are narrowing (percent of total exports)



Source: UBOS

The surplus from the income account and transfers declined to 2.9 percent of GDP in FY17/18, from 3.6 percent in FY16/17. Remittances, a major foreign exchange source, declined to about US\$1.1 billion in FY17/18, from US\$1.3 billion in FY16/17. At the same time, the continuous rise in external public debt translated into higher interest payments, which at US\$93 million (about 0.3 percent of GDP) in FY17/18 was 20 percent larger than the year before.

The widening external current account deficit was largely financed by FDI inflows and external borrowing. Including capital transfers, the current account deficit decreases to 5.4 percent of GDP. This leaves the external borrowing requirement at 3.8 percent of GDP (or close to US\$1.1 billion) in FY17/18 after accounting for net errors and omissions (Table 2)²⁰. Therefore, the external borrowing requirement is US\$300 million (or 1.1 percent

of GDP) larger than in FY16/17. Non-debt creating FDI inflows, representing equity and reinvested earnings, amounted to over US\$500 million (Table 2), but was largely offset by capital outflow of portfolio investment of about US\$350 million, as banks were increasing their foreign assets. As a result of the larger external borrowing requirement and capital outflows, gross foreign exchange reserves dropped by US\$0.2 billion, and were equivalent to 4.5 months of imports of goods and services in June 2018.

The continuous rise in external public debt translated into higher interest payments, which at US\$93 million (about 0.3 percent of GDP) in FY17/18 was 20 percent larger than the year before

20. Net errors and omissions result from differences in the source data that arise when compiling the balance of payments accounts. In this case, they indicate that foreign exchange inflows were larger than outflows by US\$178 million (or 0.9 percent of GDP).

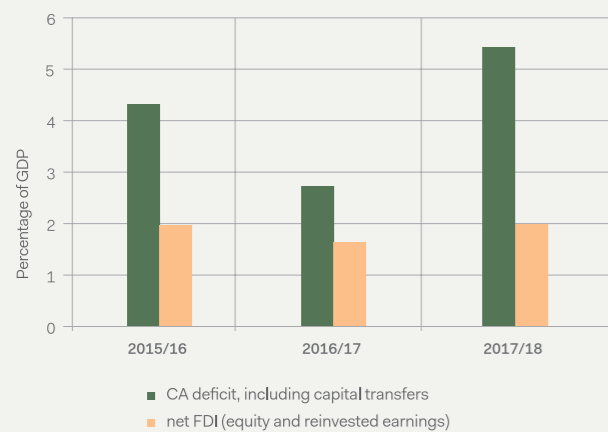
Table 2: The current account balance and financing

Current Account Balance (millions of dollars)	2015/16	2016/17	2017/18
Merchandise trade	-1887	-1536	-2009
(% GDP)	(-7.8)	(-5.9)	(-7.2)
Exports	2688	3180	3480
Imports	4574	4716	5489
Services	-216	-274	-424
(% GDP)	(-0.9)	(-1.1)	(-1.5)
Exports	1979	1656	1861
Imports	2195	1929	2286
(Travel earnings, net)	876	779	787
(Transport earnings, net)	-867	-896	-1086
Income and transfers	939	949	816
(% GDP)	(3.9)	(3.7)	(2.9)
(Personal transfers/remittances, gross)	954	1287	1084
(Government interest payments, gross)	47	77	93
Current account balance	-1163	-861	-1618
(% GDP)	(-4.8)	(-3.3)	(-5.8)
Current account balance, including capital transfers	-1043	-710	-1512
(% GDP)	(-4.3)	(-2.7)	(-5.4)
Financing	-1061	-1153	-852
o/w Net FDI inflows (equity and reinvested earnings)	-474	-427	-558
o/w Intercompany loans	-208	-222	-180
o/w Portfolio investment	146	185	347
o/w Other investment	-523	-689	-461
Net errors and omissions	84	-4	451
Foreign exchange reserves	99	436	-213
Memoranda:			
Total external debt stock, nominal (percent of GDP)	22	24	26
Foreign exchange reserves, stock (months of imports of G&S)	5.5	5.7	4.5
GDP, nominal (in millions of dollars)	24134	25985	27829

Source: Bank of Uganda
Note: o/w stands for "of which"

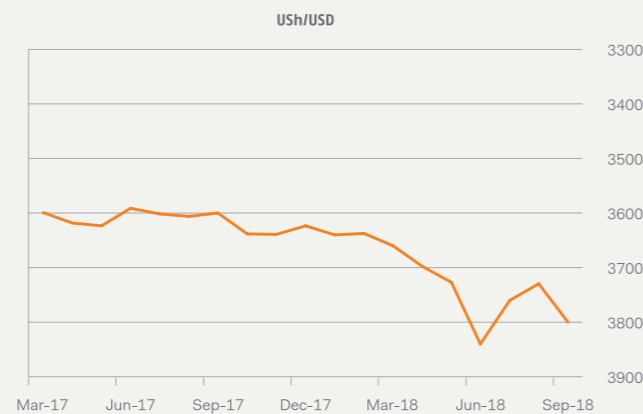
The shilling has depreciated sizably over the last year (Figure 11). The shilling traded in a narrow band from January 2017 to September 2017, ranging between Ush3,600 and Ush3,623 (based on the official monthly average midrate). Since then, the shilling depreciated by 5.6 percent to Ush3,800, driven by the deterioration in the current account (in particular the strong demand for dollars to finance imports) and the strengthening dollar.

Figure 10: Current Account Deficit and net FDI



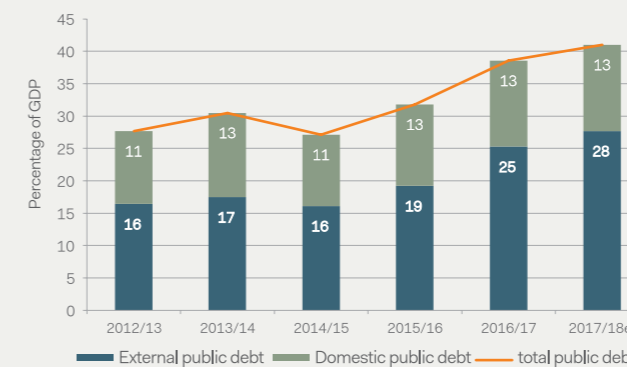
Source: UBOS

Figure 11: Nominal exchange rate movement



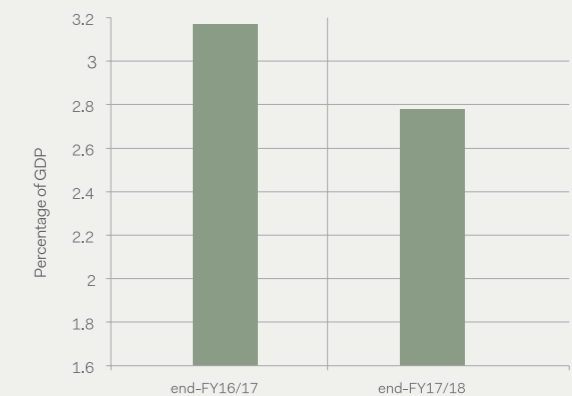
Source: Bank of Uganda

Figure 12: Evolution of total public debt



Source: Bank of Uganda

Figure 13: Stock of verified arrears



Source: MoFPED, Accountant General Office

1.7 The fiscal deficit expanded considerably

The fiscal deficit, including arrears repayments, widened to 4.8 percent of GDP in FY17/18 from 3.8 percent last year (Table 3). Current spending increased by 1.4 percent of GDP compared to the previous year and was in part offset by smaller capital spending (a 0.6 percent of GDP drop), especially on externally financed projects. Tax revenues represented 13.8 percent of GDP and were broadly in line with last year's tax collections. Due to the wider fiscal deficit, total public debt rose to 41 percent of GDP from 38.5 percent in FY16/17, and, thereby, continued the rapid accumulation of debt – totaling about 10 percent over the past three years alone.

At an estimated 15 percent of GDP in FY17/18, total revenue collections were weaker than last year and the year before (Table 3). Grants amounted to 0.8 percent of GDP, a 20 percent decline from last year's outcome, and

half the size of the budgeted amount. Tax revenues rose marginally, in GDP terms, as smaller revenues from taxes on income and profits were offset by higher revenues from the Value-Added Tax (VAT) and import duties. Such tax revenue gains stand in contrast to the government's objective of raising tax revenues by 0.50 percent of GDP per annum. Parliamentary decisions also impacted the lower tax revenue trajectory as some tax measures such as the base expansion of the infrastructure levy, were not approved. Overall, collected revenues are below the government budget that assumed total revenues of around 16.6 percent of GDP. In other words, tax revenues undershot government plans by 1.6 percent of GDP, or roughly Ush1.4 trillion (Box 3).

The expenditure mix has deteriorated further in FY17/18, with excessive current spending and sizable under-execution in capital spending (Box 3). Current spending in FY17/18 exceeded the budgeted amount by

32 percent (or by 3.6 percent of GDP). This overshooting is due to higher purchases of goods and services, transfers to government agencies, and other employee costs – mostly State House outlays. Reining in excessive current spending will, therefore, be pivotal in keeping public debt under control, while also allowing capital spending to be executed as planned. Excess current spending was offset by a fall in capital spending to an estimated 4.4 percent of GDP (or 0.6 percent of GDP less than last year). The decline in capital spending is driven by lower externally financed capital outlays, which are associated with land acquisition issues and a lack of government co-financing. Thus, raising tax revenues is a key structural issue that is not only consistent with prudent management of public debt, but it also raises capital spending with positive spillovers for growth.

The gross financing need in FY17/18 was largely met by foreign borrowing. External project financing, rather

than budget support, continues to be the primary source of foreign borrowing, which meets 72 percent of the total borrowing requirement. The latter also includes the rising external principal payments, which more than doubled in FY17/18 to US\$222 million. In the domestic market, the government's net financing was 1.3 percent of GDP, which is much more than last year. This is largely the outcome of financing the emergency supplementary budget in the fourth quarter of FY17/18. Consequently, the total public debt stock accelerated in recent years and reached 41 percent of GDP at end-FY17/18, of which 28 percent of GDP represented external public debt, while domestic public debt stabilized at 13 percent of GDP (Figure 12).

Table3: Government finances

Central Government Cash Balance (billions of Shillings)					
	Outcome			Budget	
	2015/16	2016/17	2017/18	2016/17	2017/18
Total revenues	12647	13897	15312	14459	16698
(% GDP)	(15.2)	(15.1)	(15.0)	(15.1)	(16.6)
Tax revenues	11181	12593	14076	12480	14686
(% GDP)	(13.5)	(13.7)	(13.8)	(13.0)	(14.6)
<i>o/w VAT</i>	3522	3904	4448		
(% GDP)	(4.2)	(4.2)	(4.4)		
<i>o/w Taxes on income and profit</i>	3810	4279	4641		
(% GDP)	(4.6)	(4.6)	(4.6)		
Non-tax revenues	319	354	462	434	376
(% GDP)	(0.4)	(0.4)	(0.5)	(0.5)	(0.4)
Grants	1147	950	774	1545	1636
(% GDP)	(1.4)	(1.0)	(0.8)	(1.6)	(1.6)
Expenditures and net lending	16727	17437	20203	20780	23250
(% GDP)	(20.1)	(18.9)	(19.8)	(21.7)	(23.1)
Current expenditures	13219	12858	15706	10524	11902
(% GDP)	(15.9)	(14.0)	(15.4)	(11.0)	(11.8)
<i>o/w Compensation of employees</i>	1970	2151	2412		
(% GDP)	(2.4)	(2.3)	(2.4)		
<i>o/w Purchases of goods and services</i>	3397	2560	3576		
(% GDP)	(4.1)	(2.8)	(3.5)		
<i>o/w transfers to other agencies</i>	940	944	1591		
(% GDP)	(1.1)	(1.0)	(1.6)		
<i>o/w Interest payments</i>	1682	2360	2280	2023	2675
(% GDP)	(2.0)	(2.6)	(2.2)	(2.1)	(2.7)
Capital expenditures	3508	4579	4497	10256	11348
(% GDP)	(4.2)	(5.0)	(4.4)	(10.7)	(11.3)
Overall balance, incl. arrears payments	-4080	-3541	-4891	-6321	-6552
(% GDP)	(-4.9)	(-3.8)	(-4.8)	(-6.6)	(-6.5)
Financing	-4080	-3541	-4891		
<i>o/w domestic</i>	-1899	-603	-1358		
<i>o/w external</i>	-2494	-2609	-3496		
<i>o/w errors and omissions</i>	313	-329	-37		
Memoranda:					
Arrears repayments	119	184	305		
(% GDP)	(0.1)	(0.2)	(0.3)		
Primary balance, incl. arrears payments	-2398	-1181	-2611	-4298	-3877
(% GDP)	(-2.9)	(-1.3)	(-2.6)	(-4.5)	(-3.9)
3-month T-bill yields, average (annualized)	17.8	13.2	9.1		
CPI (average)	6.5	5.7	3.4		
Public debt (% GDP)	31.8	38.5	41.0		
GDP, nominal (in billions of shillings)	83073	92142	101829	95772	100552

Source: Bank of Uganda
Note: o/w stands for "of which"

Box 3: Growth acceleration is undermined by low revenue outcomes and poor public investment management

Uganda's revenue collection has improved over recent years, with its tax-to-GDP ratio reaching an estimated 13.8 percent in FY17/18. This is lower than the revenue target of 16 percent of GDP established under National Development Plan (NDP) II and is also lower when compared to regional peers. In FY17/18, Kenya's tax-to-GDP ratio stood at around 15.5 percent and Rwanda's at 15.9 percent. As a result, revenue performance appears insufficient to finance the country's fast-growing need for public services.

Uganda's tax revenue system faces three key challenges: leakages in revenue collections, especially from tax exemptions; informality evidenced by a significant proportion of economic transactions that are cash-based, unregistered and difficult to track; and prioritization of investment and politically driven policies over revenue mobilization. Revenue forgone under the current tax system across all tax sources due to exemptions was estimated to be in the range of 4.5 to 5.0 percent of GDP in 2016/17. The bulk of these losses emanate from VAT exemptions valued at around 2.5 percentage points of GDP. The corporate income tax may also be losing up to 2 percent of GDP in potential revenue mainly because allowable deductions reduce taxable income and erode the tax base.

A key reform to the entire tax system would be the establishment of a Tax Expenditure Governance Framework (TEGF) to help manage tax exemptions. Government has agreed to explore the benefits and processes leading to implementation of a TEGF. The framework would include rules related to tax expenditures to assess the efficiency, impact and equity of tax exemptions, and to remove them if warranted. The framework should: (i) include a clause that refrains any authority from granting discretionary exemptions in whatever form; (ii) subject each new exemption to an extensive cost/benefit analysis; (iii) transparently evaluate existing exemptions to determine whether they remain relevant; and, if feasible, (iv) establish a ceiling on tax exemptions and publish reports on the degree to which compliance with this ceiling is achieved.

The underperformance of tax revenues limits co-financing of capital spending, which in part helps explain the persistent under-execution and inefficiencies in public investment implementation. Over the past three years, only 40–45 percent of budgeted capital expenditures were executed. In addition, the budget process suffers from a perpetual overhang of incomplete projects, which require additional resources from the budget. Therefore, we are witnessing stop-and-go investment cycles, which can worsen volatility, especially once oil revenues come on-stream. In terms of the overall quality of the institutional environment underpinning Public Investment Management (PIM), Uganda ranks 46 out of 71 countries; well behind peers such as Ghana (27) and Rwanda (12).

Converting investments into productive assets requires effective management at all stages of the public investment project cycle—from inception to the management of the completed asset. Reforms to Public Financial Management (PFM) systems in Uganda have ensured that some parts of the PIM cycle meet several standards of good practice. Nonetheless, deficiencies in the 'quality at entry' of projects largely explain the implementation challenges such as cost escalations, time-overruns, contract disputes, abandonment of projects, poor quality of some completed projects, and limited maintenance and rapid depreciation of public capital stock. To address these inefficiencies, the government has adopted a systematic action plan around three pillars:

- i) Streamlining and strengthening the PIM institutional arrangements, including all relevant stakeholders, for the efficient management of public investments;
- ii) Standardizing information and documentation needed to guide the entire project cycle (i.e. the identification, formulation, preparation, appraisal, investment decision, execution, operation, monitoring and evaluation of projects) across all implementing agencies; and
- iii) Ensuring that the PIM process is underpinned by an appropriate legal and regulatory environment that strengthens mandates, incentive structures, and accountability.

Chronic arrears continue to have a negative impact on the domestic economy, the government's operational costs, and implementation of the budget. The accumulation of arrears is undermining public confidence in the government's fiscal policy and its ability to meet future payment obligations. It is also curtailing economic growth by impeding the cash flow of private suppliers and contractors, which then directly contributes to the build-up of NPLs in the banking system.²¹ Over the last few years there has been a significant increase in the stock of verified arrears. The stock at end-FY14/15 stood at about Ush1.1 trillion and more than doubled to Ush2.9 trillion at end-FY16/17, equivalent to 3.2 percent of GDP. Arrears have stagnated in FY17/18 at Ush2.8 trillion, which in GDP terms is a reduction to 2.8 percent. That said, the reliability, coverage and accuracy of the verified stock of arrears is uncertain and may be higher. To decisively address the effects of arrears on the economy and the challenges faced in implementing corrective measures, the government needs to implement a comprehensive, transparent and credible arrears clearance strategy. Clearing existing arrears and preventing the accumulation of new arrears are essential steps towards restoring confidence in public fiscal management and in unlocking finance for the private sector to support growth.

Looking forward, the FY19/20 budget should try to correct certain shortcomings in recent budgets through closer alignment with NDP II and growth agenda. In its assessment of the budget for FY17/18, the National Planning Authority found that the budget was only 54 percent compliant in achieving Uganda's Vision 2040 through NDP II. As a result, this calls for a closer look on two aspects: realism and quality of national development plans, and a budget process that ensures predictable and adequate financing of these plans. Budget allocations to the social sectors, such as education and health, have declined from about 26 percent in FY10/11 to about 18 percent in FY18/19. As a result, the earlier progress on human development is showing signs of stagnation, and if continued, may cause a reversal of some of this progress, which would also compromise Uganda's prospects of achieving several Sustainable Development Goals (SDGs). Finally, the local government's direct allocation, as a share of the budget, was about 22 percent in FY10/11 and has declined since to about 14 percent in FY18/19. This declining share is a real concern, as local governments are on the frontline for implementing government development plans.



21. IMF, Uganda: Technical Assistance Report—Managing and Preventing Expenditure Arrears, Country Report No. 17/271, September 2017

Box 4: Public debt sustainability

Total public debt has increased sharply in recent years and reached around 41 percent of GDP at end-FY17/18, with external debt rising to 28 percent of GDP. New external loans in FY18/19 are so far increasingly on non-concessional terms, which means that they have much shorter grace periods, shorter maturities, and higher interest rates compared to concessional loans, such as those from, for example, the World Bank, African Development Bank or Nordic Fund (Table B1).

Non-concessional debt has a negative impact on available space for fiscal spending because interest payments are higher. Such loans also put higher demands on the government's gross financing needs because principal repayments on commercial loans generally start earlier, due to shorter grace periods, and are larger because of shorter maturities. To meet this gross financing need, the government may have to borrow more. Therefore, governments that have access to concessional loans should first maximize borrowing from these financing sources, before looking to non-concessional financing.

Table B1: Financing terms of external borrowing from July 2018 onward

Lender	loan amount (USD)	grace period (years)	loan maturity (years)	interest rate (percent)	grant element (percent)
IDA (World Bank)	149,100,000	6	38	0.75	53
Standard Chartered	43,048,283	2	6	4.0	3
Standard Chartered	104,022,277	0.5	9	LIBOR + 2 pp	1.4
UKEF	313,508,609	6	14	4.0	7

Source: MoFPED

Memo: Grant Element = (face value of loan debt service payments – present value of loan debt service payments) / face value of loan debt service payments

Therefore, when analyzing debt sustainability and thinking about debt vulnerabilities in Uganda, one needs to bear in mind the following:

- Avoid looking exclusively at the nominal public debt-to-GDP ratio. Instead, use the present value concept to capture the cost of borrowing, and use a variety of debt burden indicators such as present value of external public debt-to-exports, and external debt service-to-exports to understand the government's repayment capacity from different angles, including the ability to generate sufficient foreign exchange.

- Do not rely on static indicators alone that are then compared with other countries, but ask yourself what it means for the borrowing path and debt servicing capacity of Uganda if: Oil exports are postponed by another five years (for whatever reason), while heavy borrowing for oil infrastructure has already taken place? The oil price falls significantly and reduces oil revenues? Government continues over-running budgeted current spending, which is largely unproductive, and finances the deficit with expensive commercial foreign loans? A combination of the above occurs and Uganda is hit by a severe drought, requiring additional borrowing?

02 Economic Outlook and Risks

2.1 Higher real GDP growth expected from increased public investment and agriculture output

Real GDP growth is expected to rise from 6 percent in FY18/19 to 6.4 percent in FY19/20 (Table 4). This will be driven by intensified public and private investments in renewable energy projects (Karuma and Isimba dams) and investments to prepare for oil production by 2023. The latter includes 600 km of oil roads, the construction of a refinery in Hoima, and the oil pipeline to Tanga in Tanzania. Additional capital outlays include other critical road projects, such as the Kampala-Jinja highway (one of the largest public-private partnership projects in the pipeline), as well as power transmission and distribution networks to special economic zones and rural growth centers. Telecommunication companies are expected to ramp up their investments over the next year as they upgrade infrastructure to support both 3G connectivity country-wide and the initial roll-out of 4G services. The private sector also continues to invest in industrial parks across the country. The scale up in investments is expected to catalyze a rise in private consumption, as the bulk of investments support more rapid growth in construction and services. Assuming normal weather conditions, agriculture output is also expected to remain strong. Therefore, barring any further commodity price or weather shocks, the recent recovery in agriculture will help Uganda return to its poverty reducing path and bolster household incomes and consumption.

As the growth recovery gains traction, headline and core inflation are expected to approach the Bank of Uganda (BoU) target of 5 percent. Oil prices are expected to increase to US\$74/bbl in 2019, peaking in

the first half of the year, and declining over the medium term to under US\$70/bbl as U.S. production bottlenecks ease.²² This should limit any inflationary pressures from the price of fuel and certain imported goods. Although the Bank of Uganda's easing cycle seems to have ended with the 1 percent increase in the policy rate to 10 percent in October 2018, lending rates are expected to remain at relatively more reasonable levels. Together with a more positive economic outlook, this should sustain private sector credit growth and further boost private consumption as more households access credit.

The current account deficit is projected to widen to about 7 percent of GDP in FY18/19 and 7.3 percent in FY19/20 as the growth of imports continues to outstrip that of exports. Export revenue is projected to remain strong. The price outlook for Uganda's main export products is positive.²³ And Uganda's main export markets are expecting largely robust growth.²⁴ A sustained increase in capital imports will widen the merchandise trade deficit, however. Furthermore, the rebound in oil prices is expected to continue, which will increase the cost of oil imports and transport services. Nevertheless, the larger current account deficit is expected to be partially funded by a parallel pick-up in FDI inflows related to oil production, fertilizer, and steel manufacturing. Net FDI inflows and other capital inflows, including external borrowing, should keep foreign exchange reserves at about US\$3.3 billion (equivalent to over four months of imports of goods and services).

22. World Bank, *Commodity Markets Outlook, October 2018*. This is an upward revision to the World Bank's April 2018 forecast, reflecting the resumption of U.S. sanctions on Iran and production problems in Venezuela. Downside risks to oil prices include increased trade tensions between China and the U.S. and weaker than expected global growth. Upside risks to prices include stronger than expected growth in China (due to a possible policy stimulus).

23. For example, both Arabica and Robusta coffee prices are expected to rise from, respectively, an average of US\$2.85/kg and US\$1.82/kg in 2018 to about US\$2.98/kg and US\$1.91/kg by 2021 (World Bank *Commodities Markets Outlook, October 2018*).

24. Following the rebound in 2018, Kenya is expected to grow at about 6 percent over the medium term. Growth in the DRC is projected to peak at 5.5 percent in 2020, supported by a sustained recovery in extractives and an upturn in private investment. The growth momentum in Rwanda is projected to pick up even further to 7–8 percent over the medium-term, supported by exports, agriculture and greater infrastructure development. The IMF recently hiked the UAE's growth forecast for 2018 and 2019 on the back of higher oil prices, continued reforms to promote the private sector and increased government spending.

Table 4: Medium term outlook (annual percent change unless indicated otherwise)

	17/18e	18/19 f	19/20 f
Real GDP growth	6.1	6.0	6.4
Private Consumption	3.7	2.5	5.1
Government Consumption	-5.4	-1.5	11.8
Gross Fixed Capital Investment ²⁵	9.9	17.1	9.3
Exports, Goods and Services	13.9	8.6	5.3
Imports, Goods and Services	5.7	10.4	7.0
Agriculture	3.8	2.6	2.8
Industry	6.1	5.6	6.1
Services	7.7	7.5	7.8
Inflation (Consumer Price Index)	3.4	4.7	4.9
Current Account Balance (percent of GDP)	-5.3	-7.0	-7.3
Net Foreign Direct Investment (percent of GDP)	1.9	2.1	2.4
Fiscal Balance (percent of GDP)	-4.8	-5.7	-5.9
Debt (percent of GDP)	41.7	44.8	47.4

Source: UBOS and World Bank staff estimates

Given the historical under-execution of capital expenditures, the fiscal deficit is likely to fall short of what is budgeted (Table 3) and only expand to 5.7 percent of GDP in FY18/19 and 5.9 percent the year after (Table 4). Recent reforms to the tax system could increase collection to about 14–15 percent of GDP in FY18/19. Longer-term plans envisaged within the upcoming Domestic Revenue Mobilization Strategy support a faster increase in revenues over the medium term. Total expenditures are expected in the range of 21–22 percent of GDP, even though this could be heavily discounted by the historically low execution of the capital budget. Capital budget execution should improve as reforms are undertaken (see Box 3) to streamline and strengthen the PIM institutional arrangements and capacity, standardize information and documentation needed to guide the entire project cycle, rationalize projects and improve costing and baseline information in the Public Investment Plan (PIP), and ensure that the PIM process is underpinned by an appropriate legal and regulatory environment that strengthens planning,

mandates, incentive structures, and accountability. The recently approved Uganda PFM Reform Strategy (FY18/19–FY22/23) provides a sound framework for reining in excessive current spending. This includes ensuring that multi-year commitments are accurately reflected in annual budgets, commitment controls (including reporting and clearing of arrears) are reinforced, and PFM compliance is improved through better incentives and sanctions mechanisms. The government plans to reduce the fiscal deficit to 3.7 percent of GDP by FY20/21, which will largely be driven by a reduction in capital expenditures. From the current level of 41 percent of GDP, public debt is projected to reach 47 percent of GDP over the medium term.

2.2 Risks remain tilted to the downside

The positive future economic expectations could dissipate if political tensions were to escalate. If the recent riots and civil unrest in urban areas continue, this would increase uncertainty, likely impede private

25. Includes both public and private investments. Investments in renewable energy projects are winding down and the investments in 3G and 4G connectivity will tail off, which should help explain the deceleration in FY19/20.

investment, and hinder economic activity. It could also project a negative image to the international community, which might curtail the recent growth in the tourism sector, slow FDI funded activities, and bolster the capital outflow of portfolio investments that was evident in FY17/18. Finally, the political decision to unify energy generation, transmission, and distribution is a U-turn of the reforms undertaken in the 2000s and is not in line with international best practices. This could result in widespread inefficiencies, such as those that existed prior to the reforms. Difficulties in the energy sector could have negative spillover effects for private sector growth.

Reliance on rain-fed and subsistence agriculture remains a downside risk to real GDP growth, the poor's income, and export earnings. As the events of 2016 and 2017 highlight, Ugandan households are particularly vulnerable to weather-related, pest and other shocks. Thus, a renewed focus on building resilience – including through better water management, irrigation, and more resilient seed varieties – is needed. This should also aim at triggering a year-round agricultural cycle that could improve household production and productivity.²⁶ This is discussed further in Section 3.

Spending pressures could jeopardize Uganda's hard-earned macroeconomic stability. Spending pressures may arise if the political environment continues to be charged, if parts of the civil service revive collective bargaining demands for higher wages, and/or if contingent liabilities, partially stemming from increasing use of public-private partnerships, materialize. On the other hand, new ad-hoc tax exemptions that put downward pressure on tax revenues in conjunction with existing exemptions, and weak implementation of new tax-enhancing measures and reforms, may strain the government's ability to raise additional revenue to offset higher expenditures.

Maintaining a low risk of debt distress will in large part depend on the government's fiscal execution and its ability to foster improvements in revenue outcomes, as well as on controlling current spending, while maximizing returns from its investment program. Significant delays in public investment execution, and further sizable increases in current spending may constrain

real GDP growth and the future growth dividend. At the same time, rising U.S. interest rates could result in accelerated depreciation of the Ugandan shilling, which would result in more expensive repayments of foreign debt. Thus, under any of the above circumstances, Uganda could face a greater risk of debt distress.

Swings in global oil prices present varying risks to Uganda's growth prospects. Lower oil prices are beneficial to Uganda's trade balance and real growth outcomes, but also increase risks to investment plans in the Ugandan oil sector. Estimates suggest that an oil price of US\$60/bbl is the break-even point for production in Uganda²⁷, which is now envisaged to start in FY22.²⁸ Therefore, if oil prices again fall below this estimated break-even price, then plans and strategies regarding the phasing of extraction, refinery and pipeline investments may need to be adjusted, with possible delays in realization of oil revenues. Delays in oil exports beyond 2021 could also result in liquidity pressures given the current heavy borrowing for oil sector-related infrastructure that is relying on the enhanced repayment capacity from oil exports, and especially if less concessional borrowing materializes.

Uganda's export performance could be negatively impacted by events in and beyond the region. Reduced foreign demand, which would weaken exports, could come in the form of intensified regional instability due to continued volatility in the DRC and South Sudan, and/or because of the unfolding trade war between the U.S. and China that might negatively affect global growth. Almost a quarter of Uganda's FY17/18 exports went to the DRC and South Sudan. However, there are potential challenges in both markets to this trade. The escalation in violence and recent Ebola outbreak in North Kivu province in eastern DRC, bordering Uganda, has increased uncertainty, created difficulties for the flow of goods, and is likely to have adverse impacts for Ugandan exports. Furthermore, the DRC elections, expected to take place in December 2018, could lead to further violence and uncertainty. Although the South Sudanese leaders signed a power-sharing deal in September 2018, it is uncertain whether this agreement will hold. However, if it does, and oil prices remain stable, then South Sudanese demand for Ugandan exports may pick up again.



26. For example, reducing the reliance on rain-fed agriculture and mitigating the impact of climate change through irrigation (including use of solar powered irrigation pumps), rain water harvesting, and adapting new technologies.

27. Patey, L. (2015). *Oil in Uganda: Hard bargaining and complex politics in East Africa*. The Oxford Institute for Energy Studies. University of Oxford.

28. IMF (2017). *Uganda: Seventh review under the Policy Support Instrument*.

PART ②
SPECIAL TOPIC

03 Developing the Agri-Food System for Inclusive Economic Growth

3.1 Introduction

Agriculture plays a central role for Uganda's economy and employment. Agriculture contributes about 23 percent of GDP, and agricultural products (primary and processed) have accounted for more than 50 percent of total exports over the last decade. The agricultural production share of overall employment even increased to 70 percent in this period (UBOS 2016). About five million Ugandan households (25 million people) depend on agriculture for their livelihood. The agriculture sector is particularly important for young people in Uganda, which today are the majority of the population. 80 percent of Ugandans are below the age of 35 and, with a median age of 16 years, Uganda has the youngest population of any country in the world (Aga Khan University 2016). More than three quarters of people aged 15 to 24 engage in agriculture as their first job, much of which can be considered primary production (farming) (Yeboah & Jayne 2018).

The importance of agriculture in rural areas cannot be overstated, particularly among young Ugandans. While rural to urban migration continues at a fast pace, at an annualized growth rate of 5.4 percent, a total urbanization rate of 20 percent in Uganda appears relatively low compared to regional neighbors. One reason could be a lack of alternative employment and social networks in urban compared to rural areas (Yeboah & Jayne 2018). While in 2006, about 20 percent of Uganda's working age population (15-54) lived in urban areas, it was still only 19.6 percent in 2012. The urban share of the working-age population has therefore stagnated, with Uganda's rural work force growing more rapidly compared to regional neighbors such as Tanzania and Kenya (ibid.).

Ugandan agriculture is a key driver of poverty reduction but remains vulnerable to sector-related risks. Between 2002-2013, the share of people living below the national poverty line more than halved, from 40 percent to 19.7 percent, with agricultural households accounting for 79 percent of poverty reduction in this period. Agriculture households benefited from higher relative food prices due to favorable weather and strong market conditions. In 2016/17 however, the national poverty rate rose to

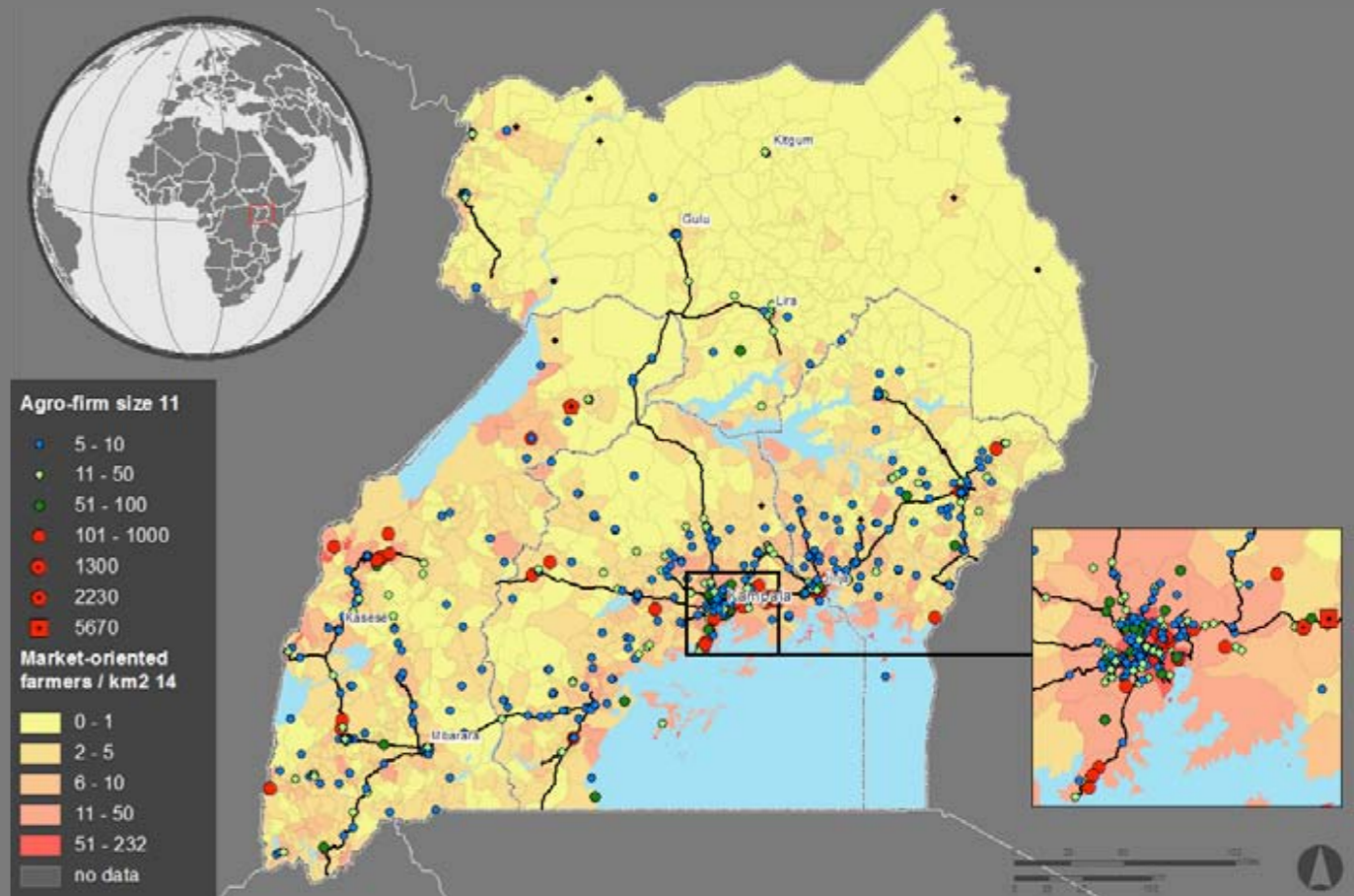
about 27 percent, which has in part been ascribed to an overall economic slowdown that Uganda experienced since 2012, but also to severe drought conditions and outbreaks of the fall armyworm. These hazards were met with low adaptive capacity of farming systems and rural livelihoods to agriculture risks and climatic stressors. This largely results from high dependence on external factors such as rainfall and crop prices in combination with low technology adoption rates and limited access to rural non-farm income streams.

Uganda's agricultural production systems are diverse, and largely based on small farms in the range of 0.8 to 1.6 ha (Anderson et al. 2016). Farm sizes vary across regions, and are mainly a factor of population density, farming systems resulting from biophysical conditions, available arable land, and economic development. Smallholders in Uganda primarily grow food and staple crops, with maize and beans being the most common crops, followed by cassava, sweet potatoes and groundnuts. A smaller portion of smallholders grows cash crops, mainly coffee and sugar cane, but also tea and cotton. 60 percent of households raise livestock, with chicken being the most common form (Anderson et al. 2016). Farming systems vary across the country and are based on climatic and soil conditions as well as cultural practices. In the Central and Western regions and along the shore of Lake Victoria, bananas, coffee and staples are grown due to relatively stable and bimodal rainfalls of up to 1500 mm per year, but also due to a better access to secondary and tertiary towns. Much of the Northern and Eastern regions depend on one rainy season, and pastoralism is widespread. Fishing also plays an important role given large freshwater lakes and water streams (CCAFS 2017).

About 25 million people in Uganda depend on agriculture for their livelihood. The agriculture sector is particularly important for young people in Uganda, which today are the majority of the population.

Figure 14: Market-oriented farmers density (2014) and large agro-firms (2011)

WORLD BANK GROUP Geospatial Support Team (2017)
WORLD BANK GROUP DEVELOPMENT DATA GROUP (2018)

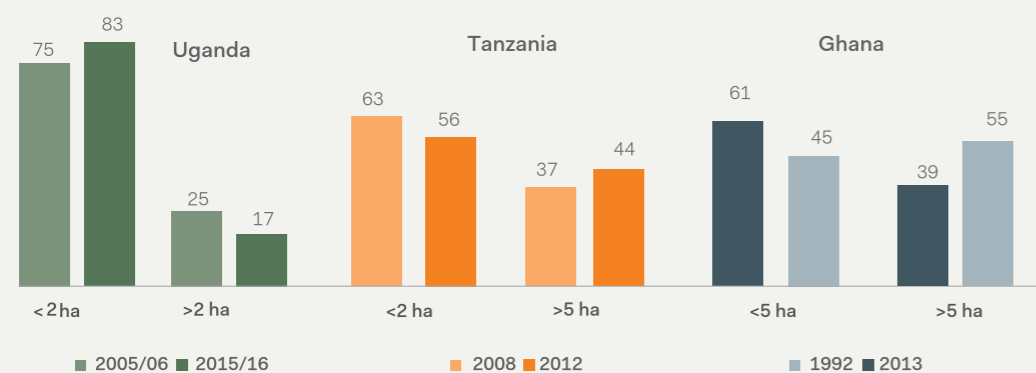


Source: preliminary findings from the forthcoming Uganda Jobs Diagnostic and Strategy, World Bank (2018)

The average size of Ugandan farms is shrinking, while a medium-sized farm structure is only slowly emerging – which runs counter to the trend in many other EAC countries. Over the decade from 2006 to 2016, the share of all household farms that were less than two ha in size rose from 75 percent to 83 percent (World Bank 2018a). In contrast, between 2002-2012, the share of farms below two ha in Zambia decreased to 16 percent, while farms between five and 100 ha of size made up 52 percent. Similarly, about 44 and 55 percent of farms in Tanzania (2012) and Ghana (2013), respectively, were above five ha in size (see Figure 15). Diversification and growth out of subsistence farming into more market-oriented farming

has been concentrated in Uganda's Central, Eastern and Western regions, with a positive correlation between the amount of larger-scale food and agro-processing firms and densities of more market-oriented farmers (see Fig. 2). In Northern Uganda, the region with the highest poverty levels, a few large-scale commercial farms were established which are largely devoted to grain and pulse production for sale to the World Food Program (WFP) and for other exports to South Sudan and DRC.²⁹ These commercial farms have typically been developed by foreign investors over the past decade, while smaller farms – in the range between ten to 200 ha – are mostly developed by Ugandans (World Bank 2018a).

Figure 15: Farm size distribution



Source: Jayne, T.S. et al. (2016)

Given the importance of agriculture in rural areas, the diversity of production systems, the presence of two agricultural seasons a year and overall favorable soil conditions, there is a huge potential for the development of a higher value-added agri-food system. Two agricultural seasons in most of the country means that Uganda can theoretically produce food at relatively lower costs and more stable volumes compared to neighboring countries. When focusing on the agri-food system instead of primary production alone, Ugandan agriculture has a higher job creation potential than the

service or industry sectors.³⁰ While the share of services in GDP increased to 57 percent in FY17/18, it has less socioeconomic impact than agriculture. Besides, the sector is largely informal and characterized by relatively low labor productivity. While the industrial sector is still regarded as a driver of higher incomes and employment, it is competing with low-cost manufactured goods from China and other Asian countries. For example, China's exports of manufactured goods to Africa increased from US\$4.4 billion in 2000 to US\$86.7 billion in 2013; an average annual growth rate of 28 percent (AGRA 2017).

29. The Northern region and the Northern part of the Eastern region in Uganda are mostly semi-nomadic and semi-arid. In these regions, poverty has become increasingly concentrated, accounting for 84% of Uganda's poor in 2013 (World Bank 2016).

30. Note that the three sectors are not easy to disentangle when looking at the wider agri-food system, since value chain components like (food) processing and packaging pertain to manufacturing, and logistics and marketing to the service industry, whereas agriculture is usually considered as primary production (of raw materials).

More promising short to medium-term prospects lie within Uganda and in the region, and particularly in the growth of small and medium-sized agri-manufacturing firms, which can supply growing domestic and regional markets. Some 40-70 percent of food costs to urban Africans are now incurred in the post-farm gate segments of the supply chain, such as processing, wholesale, transport, or retail (AGRA 2017). An analysis of six Sub-Saharan African countries showed that transforming their food systems from a focus on primary production towards market-oriented agri-food value chains could create more jobs between 2010 and 2025 than the rest of the economy (Townsend et al. 2017). Already in 2010, the number of jobs in agribusiness amounted to 10 percent of the number of all jobs in agriculture in Eastern and Southern Africa (Tschirley et al. 2015).

While political instability in South Sudan and DRC can disturb trade flows, Uganda has a regional comparative advantage as a hub connecting the coastal states of Kenya and Tanzania with fast growing markets in the Great Lakes region. Through enhanced regional integration and the development of sustainable agri-food value chains, Uganda's agri-food sector can absorb a substantial share of its young people into decent employment, and simultaneously promote inclusive and equitable growth especially in rural areas (Yeboah & Jayne 2018; EPRC 2018). With a view to the country's rapidly rising population – expected to increase to about 102 million people by 2050 (van Ittersum et al. 2016), agricultural productivity needs to rapidly increase. Over the last five years, national agricultural output has grown at about 2 percent per annum, compared to agricultural output growth of 3 to 5 percent in other EAC states. Sustained agricultural productivity growth has historically shown to have high multiplier effects on growth in the rest of the economy (e.g. Diao et al. 2007), enabling labor to move into better-paying jobs off-farm. This can lead to a rise in incomes relative to the costs of food, resulting in higher demand and consumption, improvements in food security, and better living standards (Yeboah & Jayne 2018).

3.2 Promising trends for value addition and employment in Uganda's agri-food system

There are multiple promising trends for value addition and job creation in Uganda's agri-food sector. These

include a booming domestic and regional demand for higher-value foods, dietary shifts into higher value and more processed foods, and increasing vertical integration of smallholders into agriculture value chains. These trends are discussed in the following sections, including value chains that benefit from these opportunities. Furthermore, cases will be reviewed where innovative agribusiness operations have improved value chains and provided models for transforming Uganda from low-value smallholder farming towards higher value added agri-food manufacturing.

3.2.1 Demand shifts

Demand-side opportunities for agriculture and food in Uganda and its neighbors are the strongest they have ever been. This demand is both domestic and regional. Domestically, it is driven by high population growth and urbanization. It is also promoted by urban income growth that is leading to a rapidly expanding middle class. Similar processes are occurring in most countries in the region (Tschirley et al. 2015b). Table 5 cites results from the analysis of household panel data from rural and urban areas in Uganda in 2012/13 to show the responsiveness of household consumption patterns to income growth, proxied as changes in total expenditures across households (Boysen 2016). The results show that income responses are higher for the poorest quintile of households than for the richest, and on average are higher in rural areas than urban ones. Mean urban consumption responses with respect to income are particularly striking with respect to meat, fish, milk and fruits in both urban and rural areas. Demand for these items will likely continue to grow more quickly than income, and growth will be widespread in both rural and urban areas.

There are multiple promising trends for value addition and job creation in Uganda's agri-food sector - a booming domestic and regional demand for higher-value foods, dietary shifts into higher value and more processed foods, and increasing vertical integration of smallholders into agriculture value chains.

Table 5: Demand (consumption) response to a 1 percent increase in household income (total expenditure) in 2012/13

	Rural			Urban		
	Mean Rural	Lowest Quintile	Highest Quintile	Mean Urban	Lowest Quintile	Highest Quintile
Maize	1.01	1.42	0.76	0.60	0.81	0.33
Cereals	0.95	1.37	0.59	0.49	0.69	0.34
Potatoes	1.03	1.83	0.63	0.67	0.85	0.40
Cassava	0.55	0.86	0.13*	0.58	0.65	0.45*
Matooke	1.53	2.86	0.91	0.95	1.73*	0.61
Vegetables	0.05 ^{ns}	0.37	-0.24 ^{ns}	0.33	0.52	0.16
Fruits	1.24	1.71	0.95	0.97	1.16	0.77
Meat	1.92	2.83	1.43	1.37	2.36	0.89
Fish	1.62	2.22	1.23	1.25	1.75	0.90
Legumes	0.66	0.80	0.61	0.51	0.70	0.26
Milk	1.55	2.28	1.11	1.02	1.78	0.61
Fats	0.77	1.18	0.52	0.53	0.87	0.27
Sugar	1.17	1.97	0.81	0.63	0.88	0.48
Other	1.08	0.87	1.05	1.32	1.18	0.97

Source: Boysen (2016)

Notes: The table shows an unconditional household expenditure response to an increase in household total expenditures, proxying income response elasticities. Data are from the Ugandan National Household Survey 2012/13. Estimation is from a two-step procedure that factors many household characteristics into the estimation, in addition to total and commodity-specific expenditures and prices. Quintiles refer to 20 percent segments of the income distribution as proxied by household quintiles with respect to total expenditures. All parameters are statistically significant at 1 percent unless indicated as follows: * signifies significant at 5 percent, "ns" conveys that the parameter is not statistically different from zero at 10 percent confidence.

The evidence provided in the table above is consistent with the view that Uganda is entering a dietary transition towards higher priced animal-sourced calories as incomes increase, and that these changes are widespread across both urban and rural areas, and even across income groups. Associated demand increases are likely to persist for the foreseeable future. Similar trends have been observed in neighboring countries. In Rwanda, for instance, similar household expenditure elasticities for meat, poultry, and eggs were recently found to range from 1.13 to 1.71 across rural and urban areas of different types (Diao et al. 2017). This suggests that countries such as Uganda, with considerable livestock resources and potential, have marked and growing opportunities for regional trade in these commodities – if domestic demand can be met, and production costs be kept competitive.

The high (>1) mean consumption elasticities in rural areas for matooke (plantain), sugar, potatoes, and maize are also striking. Contrary to the norm for

wealthy countries, demand for carbohydrates continues to increase in tandem with income in rural Uganda, and much faster than income for the poorest quintile of the income distribution. This is consistent with the view that household consumption of even the most basic starchy food staples is still constrained by low incomes in rural areas.



Table 6: Changes in Real Value-Added of Food and Beverage Processing in Uganda 2011/12 to 2015/16

Item	Weight in total manufacturing value-added over period	2011/12 (2002 = 100)	2015/16 (2002 = 100)	Average annual % compound growth over 2002 to 2011/12 period	Average annual % compound growth over 2011/12 to 2015/16 period
All food and drink processing	56.8%	176	218	6.5%	5.5%
Sugar processing	13.9%	124	216	2.4%	14.9%
Beer	9.9%	282	216	12.2%	-6.5%
Coffee processing	8.9%	84	112	-1.9%	7.5%
Soft drinks and bottled water	6.9%	362	509	15.3%	9.0%
Tea processing	6.8%	122	131	2.2%	1.8%
Edible oils and fats	4.2%	275	349	11.9%	6.1%
Total manufacturing all sectors	100%	186	224	7.1%	4.8%

Source: Calculated from data in the UBOS Statistical Abstract 2017

Note: (1) Weighted index that excludes tobacco. The sub-categories below this are the main sub-components in terms of weight of this entry. Only sub-categories that had a weight of at least 4 percent of total manufacturing are shown here.

Income growth and urbanization are also driving changes in the quality of products required in wholesale and retail market structures. Events in neighboring countries such as Kenya, Rwanda and Tanzania suggest that Uganda will be confronted by a 'Supermarket Revolution', which has already begun in Kampala, and is likely to continue spreading to secondary towns. Supermarket procurement systems involve the consolidation of purchase, a shift to specialized wholesalers, and tough safety and quality standards. To meet these requirements, producers need to invest and adopt new practices. This is hardest for small producers, who risk exclusion from dynamic urban markets increasingly dominated by supermarkets. Smallholders will need to address these challenges through organization in cooperatives and vertical coordination with agribusinesses (Weatherspoon & Reardon 2003).

Urban and rural income elasticities for processed foods are also impressive. Urban income growth favors growth of formal food processing and packaging. A household data analysis from five countries of East and Southern Africa, for instance, estimates that demand for processed foods in urban areas will increase by a factor of eight over the next three decades (Tschirley et al. 2015b). This demand can drive value-addition strategies based on diversifying production patterns into higher valued commodities such as animal products, and through processing of cereals and other starches into

higher quality products. Data from the Uganda Bureau of Statistics (UBOS) Statistical Abstract 2017 (Table 6) suggest that food and drink processing represent 56.8 percent of all manufacturing value added in Uganda in the 2011/12 to 2015/16 period. In the same period, less than 16 percent of total manufacturing value added came from traditional commodities such as coffee and tea. The numbers indicate that the contribution of agriculture to manufacturing value added is not driven by traditional export crops, but by domestic demand for processed food and drink.

3.2.2 Regional trade prospects

Rising regional demand for food and dietary shifts into higher value and more processed foods offer massive opportunities for Ugandan farmers and for Ugandan value chains beyond farm production. Unlike domestic demand, which is constrained by the comparably small size of domestic markets, regional and global demands are massive and growing. Africa's demand for food is projected to more than double by 2050, driven by population growth, rising incomes, rapid urbanization, and more open intra-regional trade policies. The value of the African food market is predicted to rise to US\$ 1 trillion by 2030, from US\$ 300 billion currently, with rapid growth of both the urban and rural middle class (AGRA 2017). Diets increasingly move away from cereal and tuber staples towards greater consumption of animal protein, fruits and vegetables (ibid.).

Agricultural products (primary and processed) have accounted for more than 50 percent of total exports over the last decade. While gradually declining as a share of total exports over the longer term, the role of agriculture in exports remains high (see Table 7). As of 2016, total agricultural exports are more than fourfold their early 1990 levels in nominal terms, and more than threefold their early 2000 levels (UBOS, 2017). They also represent about 20 percent of the country's total foreign exchange earnings from exports of goods and services and transfers. UBOS estimates informal (unrecorded) exports overall to be in the range of 15 percent of all exports, but no disaggregated data is available (ibid.). However, a large share of these exports are likely to be agricultural products.

Uganda continues as a traditional exporter to world markets of coffee, tea, tobacco and cotton, with aggregate exports of these four crops tripling in nominal value between the early 2000s and the early 2010s. Coffee exports almost doubled, while the other three traditional exports rose between five and ten times.

After an export boom in the first decade for the other three traditional commodities, their export growth has continued yet at a more moderate pace.³¹

The country has also become a major supplier of non-traditional agricultural products, including fish and fish products, which have become the largest non-traditional agricultural export category. Traditional agricultural exports were larger in value terms than non-traditional ones through the 2000s, but by a steadily diminishing amount. After 2010, non-traditional agricultural exports began to dominate, and this trend is only likely to grow. However, there was a significant concern about a decline in fish export volumes in the late 2000s, seen as result of declining catches, falling stocks and overfishing (Mwijagye 2009). The largest markets for Uganda's exports of fish and fish products are Hong Kong, Organization for Economic Co-operation and Development (OECD) countries, Gulf countries, Israel and the US; and increasingly include neighbors such as Rwanda and Kenya.



31. Data from COMTRADE database accessed via WITS

Table 7: Recorded Average Annual Agricultural and Food Exports in Nominal US\$ Millions 1990 - 2016

	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016
Traditional	225.2	331.4	191.3	398.3	569.3	507.2
Coffee	209.2	285.7	118.3	284.6	415.4	371.7
Tea	9.2	28.3	34.2	54.7	77.3	71.5
Tobacco	6.7	17.4	38.7	59.0	76.6	64.1
Cotton	7.7	18.9	21.7	19.2	47.1	31.6
Non-Traditional	56.6	88.0	183.7	378.8	666.4	703.8
Fish and products	12.8	35.0	100.1	128.0	128.7	121.5
Sugar & Confectionary	0.1	5.8	2.3	38.0	84.9	100.3
Cocoa Beans	0.5	1.3	5.5	22.3	50.8	75.0
Maize	16.6	10.4	16.2	26.7	52.1	70.3
Animal/Veg Fats & Oils	0.1	2.3	5.5	46.2	98.6	62.1
Sorghum	0.0	0.1	0.1	1.5	20.2	55.3
Hides and Skins	7.1	8.6	10.5	12.3	55.2	51.4
Beans & other Legumes	9.7	9.5	5.6	12.3	28.9	50.5
Flowers	1.1	6.0	21.5	24.3	25.8	24.6
Other ¹	8.5	8.9	16.4	67.2	121.2	93.0
Total²	281.7	419.4	375.0	777.2	1,235.7	1,211.0
Share of Total Exports, All Sectors	n.a.	n.a.	63%	54%	54%	49%

Source: COMTRADE database accessed via WITS and UBOS (2017)

Note: (1) In declining order of importance in 2016: rice, vegetables, sesame seeds, beer, mineral water, soybeans, fruits, pepper, vanilla, groundnuts, live animals and bananas. UBOS (2017) has the same commodity specific totals, but also lists exports of "other commodities" of US\$583.5 million in 2016, after accounting separately for the items lumped together in this line item and for big-ticket non-agricultural items such as gold and petroleum. None of this "other category" in UBOS (2017) is included here, although it seems likely that some of the items in question are agricultural in origin.

(2) The cumulative rate of inflation of United States consumer prices in US\$ was 76.2 percent from 1991 to 2016 (U.S. Bureau of Labor Statistics Consumer Price Index). Therefore, the inflation-adjusted growth in US\$ terms of agricultural exports from 1991 to 2016 was +176 percent or a multiplicative factor of 2.76. This implies that in US\$ inflation-adjusted terms, non-traditional agricultural and food exports grew by a factor of seven from 1991 to 2016, while total agricultural and food exports grew by a factor of 2.4 over the same period.

Other rapidly expanding non-traditional exports include sugar and sugar confectionary, cocoa beans, vegetable oils and sesame seeds, cereals, hides and skins, beans and other legumes, flowers, and vegetables.

In some cases, the cumulative growth of these exports is in the thousands since 1990. For instance, sugar and sugar confectionary now represent the second largest non-traditional agricultural export, around \$100 million. Maize has risen four-fold by 2016. The growth in these nontraditional exports has often been driven by increasing demand in neighboring countries. The largest markets for Uganda's cereal exports in 2016, for example, are South Sudan (\$70 million), Kenya (\$38 million), Rwanda (\$18 million) and the DRC (\$12 million). Other smaller

markets are Burundi, Tanzania, and Sudan (ITC 2018a). Yet, Uganda's agricultural export performance is still well below its potential. According to the International Trade Center (ITC) Trade Performance Index, there is an underuse of export potential to both Sub-Saharan Africa and other Non-OECD destinations as high as 40 to 80 percent by commodity (International Trade Commission 2018b).

3.2.3 Positive sub-sector trends and agribusiness models

Within the underlying trends of demand shift and increased regional integration that are positively

impacting Uganda's agriculture and food sector, some value chains stand out. These are, particularly, maize, dairy and coffee. This section provides a brief overview of main development trends in these sub-sectors and exemplifies successful agribusiness models in each to draw some key lessons for enhanced agriculture productivity growth and employment in other value chains as well.³²

Maize production in Uganda has been steadily growing from 1.3 million metric tons of production in 2003 to about 2.6 million metric tons in 2015/16 (FAOStat 2017). While domestic market demand is responsive to urbanization, demand for maize by neighboring countries

is very much on the rise due to drought and especially to political crisis, as is the case in neighboring South Sudan. Both factors disrupt food production and are the basis of requests for aid shipments from the WFP. For instance, maize exports from Uganda to neighboring countries rose from 400,000 Mt in 2004 to about 1,100,000 Mt per annum in 2015. The private sector has responded by setting up grain buying companies that do cleaning, drying and storage. Several medium and small-scale grain traders, handling about 100,000 to 150,000 Mt of grain annually, have entered the market in recent years to take advantage of rising trade opportunities in the maize value chain. One example is Afgri-Kai Ltd, which entered the Ugandan market in 2012 and is portrayed in Box 5.

Box 5: Growing regional demand for clean maize: example of Afgri-Kai Ltd.³³

Afgri-Kai Ltd. entered Uganda in 2012, and its core business is to purchase grain and then clean and store maize for sale to WFP and within the region (60 percent to Kenya and the rest to South Sudan and Rwanda). The Afgri-Kai story illustrates how a private sector firm can open the potential of a major regional demand shift for the benefit of smallholders and traders that individually would not be able to meet the quality and reliability of shipment needs of the clients. Approximately 90 percent of grain purchases are from traders, while the remainder is from approximately 5,000 farmers. Afgri pays a premium of up to 20 percent higher than the spot market price to farmers and traders who comply with strict EAC quality standards, such as the absence of foreign materials (such as stones), excess humidity, and pests. Afgri supports the formation of new and the strengthening of existing farmer groups with training in production, primary processing and handling.

Farmers under this arrangement can access high-quality inputs of seed and fertilizer as well as support services such as spraying and maize shelling equipment. Farmers under this arrangement have been able to increase their yields from 600kg/ha to about 2Mt/ha due to using good quality inputs. Currently, Afgri-Kai moves volumes of grain estimated at 22,000 metric tons; up from 10,000 metric tons when they entered the Ugandan market in 2012. The lesson drawn from this experience is that in the presence of strong and reliable multi-year demand for grain of a given quality level, private sector actors can make appropriate investments that enable the commodity to be bulked, collected, handled and stored well, while ensuring observance of quality standards through price incentives to farmers and traders. These achievements are notable given the complexity of managing many smallholder suppliers and the absence of a public regulating authority.

The dairy sector in Uganda has been actively promoted by government, development partners, and the private sector. Liberalization and private sector involvement began with the Dairy Industry Act of 1998 and the launch in 2000 of the DDA, a semi-autonomous government agency that regulates the dairy sector and is also responsible for the coordination of development services. (Box 6). DDA is also tasked with supporting smallholder cooperatives, extension, research on breeding, product development, and promotion of exports. Underlying this has been steady increase in domestic demand for milk since the late 1990s. The national cattle herd was over

11 million head in the last full count in 2008, and small-scale farmers accounted for about 90 percent of cattle rearing. Annual milk output has steadily grown from 1.8 billion liters in 2012 to 2.2 billion liters in 2016. Value chain development was supported by a simplification of regulations, particularly regarding transport. Large private and cooperative investments were made to set up coolers and processing plants throughout milk producing areas. Milk processing has grown from five processors in 2003 to 76 milk processors in 2017. 15 processors are large-scale, with eight of them exporting milk and milk products.

Box 6: Domestic dairy demand and the Uganda Crane Cooperative Creameries Union (UCCCU)³⁴

The Uganda Crane Cooperative Creameries Union (UCCCU) is an innovative farmer-owned tertiary cooperative union registered in 2005 after sector liberalization. It epitomizes the rise of the sector and illustrates a good approach to including smallholders meaningfully in rapidly expanding and increasingly demanding markets for a high value and perishable item. UCCCU currently comprises ten district unions, involving 140 primary cooperative societies, mostly located in the mid and southwestern parts of Uganda, with a consolidated membership of almost 20,000 households. Altogether, UCCCU members produce 700,000 liters of milk daily, of which 300,000 liters are sold formally through UCCCU. UCCCU renders services to its members in terms of building their capacity in milk handling, collection and processing, while organizing its member cooperatives for collective marketing of their products. UCCCU also trains farmers on how to do farming as a business and on developing a saving culture as well as conducting some basic research especially on market issues. UCCCU farmers are able to access drugs, credit, insemination services and other inputs through their cooperatives as well as advice on how to improve the quality of their breeds.

UCCCU makes its money as a dairy on a private sector basis, but in parallel serves as a quasi-rural development authority for its members. Some of its successful farmer interventions have been: (1) animal nutrition, herd health, improved genetics, milk quality assurance, and farm management; (2) facilitation of partnerships with service providers and suppliers of farm inputs; (3) a 100,000 liter capacity dairy processing plant, 100 milk cooling tanks, and ten road tankers; (4) facilitating contractual arrangements with buyers of milk through the installed UCCCU milk cooling tanks and road tankers, with substantial price premia to farmers; strengthening the financial management capacity of member cooperative societies; according youth and women special attention for skills development and access to investment credit through all its programs; actively promoting the consumption of milk through a school milk program; and establishing a Savings and Credit Cooperative Organization (SACCO) for its members known as UCCCU Community SACCO. The latter gives advances to farmers against potential milk sales, provides credit, and pools savings of farmers for future investment.

32. The three cases that follow draw on a background paper by Jagwe (2017), commissioned for World Bank (2018).

33. World Bank (2018a)

34. World Bank (2018a)

Coffee value chains support over 3.5 million households and contribute roughly one-quarter of the foreign exchange earnings of Uganda (UCDA, 2016). Robusta accounts for about 80 percent of the harvest, Arabica for the rest. Coffee is produced on land holdings ranging between 0.25 acres and 30 acres. Only about 6 percent of coffee produced is consumed locally, while the rest is exported. Coffee exports accounted for 17.8 percent of total exports by value in 2015 (UCDA 2018). Coffee exports are estimated at a value of about US\$400 million (Jagwe 2017). Current production of coffee in Uganda has grown from 189,000 metric tons in 2010/2011 to 270,000 metric tons of Fair Average Quality grade dried beans in 2015/2016, worth US\$422 million. Through its 'Operation Wealth Creation' (OWC), the government has been promoting coffee growing and distributing seedlings to farmers, especially in Central Uganda. According to the Coffee Roadmap, which was launched by H.E. the President of Uganda in April 2017, coffee production shall increase to 20 million bags per year by 2020.

Since liberalization of the coffee sector in the late 1980s, both multinational companies such as Ibero, Kyagalanyi, Armajaro and Olam, but also local investors such as Good African Coffee, Savannah Commodities and the National Union of Coffee Agribusiness and Farm Enterprises (NUCAFE) have emerged. Among others, they have set up processing plants and organized coffee growers into groups, associations and cooperatives through which extension services, access to high quality inputs and credit or advanced payments can be provided while a steady supply of the commodity to designated processing plants can be guaranteed. Both local and foreign companies have ventured into adding more value to exported coffee by investing into grinding and roasting to make branded shelf-ready products for both export and the local market. Currently, there are twelve domestic roasters registered with UCDA, including Kyagalanyi (see Box 7).

Several lessons emerge from the three otherwise very diverse examples of vertical coordination of smallholders into changing markets for maize, dairy, and coffee. First, rapid demand growth is key to creating the conditions under which private aggregators and smallholder farmers can work well together. This was true whether it was primarily in local markets (dairy), regional markets (maize), or global markets (coffee). Demand growth arose from known and consistent product qualities that underwent a significant amount of industrial processing, which smallholders on their own could not meet. Vertical coordination arrangements allowed smallholders to get a share of the benefits from branding and better access to inputs and advice; while aggregators were able to secure, expand, and improve their supply chains for raw material.

replicated, the government's Vision 2040 and NDP II goals stand a good chance to be achieved. In these strategies, the government prioritizes agriculture as a growth opportunity to spur socio-economic transformation into a middle-income country by 2040. The Government of Uganda (GoU) plans strategic investments in agriculture that: (i) increase on-farm productivity to at least 50 percent of the yields at research stations; (ii) transform subsistence farmers into enterprise farmers, and smallholder farmers into commercial farmers; (iii) increase food security and food availability in all parts of the country; (iv) increase agriculture exports; and (v) increase efficiency and effectiveness of agricultural services. In addition, the GoU aims to increase the resilience of rural livelihoods to climate change impacts.

All three cases underline the central role of building trust through coordination to reduce the costs of search, bargaining, contracting, monitoring and enforcement that are net losses borne by both farmers and aggregators.

Besides, more reliable quality control of raw material, combined with a higher degree of processing, was essential to meeting changing market demands. Being able to meet the rising demand in processed foods will be essential to the economic welfare of smallholders, which will be difficult to achieve without vertical coordination.

Finally, in each case, aggregation provided economies of scale in collection, input supply and finance that would be very difficult to achieve through any other form of organization, including parastatal activities. In addition, farmers had a strong incentive to provide the monitoring of their own production practices and the care of their own parcels that would have been lacking for laborers on large commercial farms. This was especially important for items where quality is very sensitive to both high and careful labor inputs, such as dairy and coffee. Central to each of the outlined success stories was the fact that aggregators shared the benefits of success with producers in the form of significant premia (of the order of 20 percent or more) for improved quality of deliveries.

3.3 Challenges to harnessing the potential of Uganda's agri-food system

The outlined trends of increased urban demand, dietary shifts and regional agri-food exports provide great potential to foster agriculture productivity and create jobs along diverse agri-food value chains. If these opportunities were fully harnessed and success stories such as those shown above

The Government has undertaken several initiatives supportive of agri-food system transformation as part of its Agricultural Sector Strategic Plan (2015/16-2019/20).

These include, among others, a range of risk mitigation measures such as increased public investment in irrigation and the piloting of an agricultural insurance scheme; support towards value addition such as The Presidential Initiative on Banana Industrial Development (PIBID), the Egypt-Uganda Food Security Company Limited for beef processing, the setup of an Agricultural Credit Facility under the Bank of Uganda (see Part 1); and increased financial support to research and development (R&D) through national research institutions (EPRC 2018). The last two sections will demonstrate that these initiatives are not yet sufficient to achieve the NDP II goals. They outline specific constraints to Uganda's agri-food system transformation and suggest avenues to overcome these. Constraints and solution approaches are thereby grouped along three themes: (1) Enhancing agriculture productivity and resilience to sector-related risks; (2) Enhancing competitiveness of key agriculture value chains and improving linkages with producers; and (3) Strengthening the regulatory and institutional environment.

THEME 1: ENHANCING AGRICULTURE PRODUCTIVITY AND RESILIENCE TO SECTOR-RELATED RISKS

Many Ugandan producers live in remote areas, have only limited access to markets and extension services, and are also subject to insecure rights to land. These challenges are particularly pronounced in the northern and northeastern parts of the country. Tenure insecurity, as well as weak connection to markets and extension, limit access to and adoption of improved agricultural inputs, and limits

Box 7: The global demand for higher quality coffee and Kyagalanyi Coffee Ltd. ³⁵

Kyagalanyi Coffee Ltd was founded in 1992 when the Ugandan coffee industry was liberalized and is the oldest licensed coffee exporter in Uganda. The firm is one of the ten companies controlling over 80 percent of coffee exported from Uganda. It mainly exports graded green beans and is currently working with 15,000 coffee farming households. It provides knowledge and training in coffee husbandry and access to inputs. Local interventions are built around one or more primary processing sites. The latter are professionally managed to produce the best quality parchment, Fair Average Quality grade beans, and to ensure traceability. Each scheme is headed by a manager in charge of day-to-day certification and training operations. Overall guidance and development of the schemes is provided by Kyagalanyi's Sustainability Manager. The field teams consist of 60 staff in total, of which 14 are agronomists and seven are nursery operators. Farmers are organized in producer organizations of 20 to 40 members.

Kyagalanyi has established washing stations – critical to quality – across Mount Elgon, West Nile and

Rwenzori regions to enable proximity to the farmers they serve. Most of the stations are equipped with eco-pulpers, waste water treatment systems, nurseries and agro-input stores. Farmers are taken through an intensive agronomy training program that includes business skills. They are eligible for annual cash and fertilizer bonuses, access to quality agro-inputs (although even the company has had trouble sourcing these on occasion, as discussed more generally under regulatory issues), farm tools and good quality seedlings. Personalized advisory services are also rendered. Farmers are also able to use mobile phone technology to gather geo-tracked data on coffee traceability, adoption of Good Agricultural Practices, and use of good socio-economic practices. Coffee yields have improved tremendously as has the quality of coffee marketed. Premia are paid for better quality Arabica beans. Some participating farmers have been able to register yields of 1 mt/ha for Arabica, compared to a norm of 0.4 mt/ha. The use of mobile money systems to provide payments to farmers has greatly reduced risks associated with transacting in cash.

35. World Bank 2018a

access to information about crop and livestock prices and potential agriculture-related risks. As a result, production and productivity have remained low and volatile, leading to marked yield gaps. To foster the agri-food system transformation and inclusive economic growth, agricultural productivity will need to increase, while the resilience of agriculture production systems and rural livelihoods to climate and market risks needs to be enhanced.

3.3.1 Technology adoption

While substantial improvements could be achieved among those farmers integrated into agri-food value chains, overall agricultural productivity in Uganda has remained limited. One reason is the level of input and technology adoption, which is one of the lowest in Sub-Saharan Africa. For instance, Ugandan farmers apply 1.2 kg per ha per year of inorganic fertilizer on average, compared to 45 kg in Ethiopia, 146 kg in Malawi, or 4.5 kg in Niger (Sheahan & Barrett 2014). Inorganic input use remains concentrated on a few farms, mostly the larger and more commercially oriented ones in the Central region. Only about 4 percent of Ugandan farmers use a package of production enhancing technologies, that is, a combination of fertilizers, improved seeds³⁶, and supportive extension services (EPRC 2018). In consequence, yields remain well below their potential. Current yields for maize, millet, rice and sorghum, for instance, are estimated to be only 20-33 percent of the potential yield for rain-fed agriculture, and even less for irrigated agriculture (PARM 2015).

While low technology adoption levels result from various factors, the predominance of low quality agricultural inputs in Ugandan markets has proven to be a major cause of lower returns and adoption rates. Bold et al. (2017), for instance, showed that hybrid maize seeds in Ugandan markets were equivalent to a mix of 50 percent hybrid and 50 percent wild varieties, while the average nitrogen content of fertilizer was 30 percent lower than labels on sampled bags suggested.³⁷ Limited access to and availability of quality inputs, and an erosion of trust in the inputs that are prevalent on the market has led most

farmers to resort to informal sources of input supply. Estimates from 2015, for instance, suggest that less than 10 percent of planted seed was purchased from formal sources, and 30 to 40 percent of formally purchased seed was counterfeit. Counterfeit inputs could lead to losses to Ugandan farmers of up to US\$ 22 million a year (PARM 2015).

3.3.2 Resilience to agriculture-related risks

Improved inputs alone will not enhance agricultural productivity sustainably if they are not accompanied by sustainable land and water management practices.

On the contrary, the wrong or excessive application of agrochemicals can reduce soil organisms critical for nutrient cycling and the number of insect and bird species necessary for biological pest control, which in turn increases the fragility of agricultural systems to pest and disease outbreaks and other climatic shocks (Landis 2017). Yet, crop and livestock pests and diseases, as well as drought spells, are among the top six agricultural risks in Uganda (PARM 2015), and their occurrence is projected to increase under climate change³⁸ (CCAFS 2017).

While exposure to agriculture-related risks is high, the capacity of Uganda's producers and agricultural systems to mitigate risks has remained low. Uganda is among the most vulnerable and simultaneously least adapted countries to climate change, scoring 155 out of 188 countries on the ND-GAIN index.³⁹ The low adaptive capacity results in part from low adoption rates of climate-smart land and water management practices. Climate-smart agriculture (CSA) approaches enhance productivity, limit emissions from land or livestock management, and increase the resilience of producers and agriculture systems at the same time. Another reason for the vulnerability of Uganda's agriculture systems is their high dependence on rainfall. Less than one percent of producers use irrigation (EPRC 2018). Since irrigation may be unaffordable for non-market-oriented producers, the adoption of other measures such as rainwater storage and water conservation should be encouraged (World

Bank 2018a). In Uganda's most vulnerable regions, holistic approaches to rural development and social protection may be required (see Box 8).

Finally, producers have limited access to other risk mitigation measures such as agriculture insurance, and to strategies for disaster preparedness and prevention. By providing insurance coverage for crops, livestock, or aquaculture, agriculture insurance schemes can reimburse farmers for economic losses in the event of a climatic hazard, thereby increasing food security. One example is the Uganda Agriculture Insurance

Scheme (UAIS), which is currently being piloted. The outbreak and impact of the fall armyworm, for instance, demonstrated that disaster management in Uganda has largely been reactive to date. Limited weather observing and data analysis infrastructure and human capacity to utilize these tools have resulted in inadequate monitoring and forecasting of climate hazards, and restricted timely response. While the GoU has introduced Early Warning Systems (EWS), some financial and institutional challenges still need to be overcome for these systems to achieve impact at scale (Brimoh et al. 2018).

Box 8: Fostering rural development through Community-Driven Development and Social Protection

Vertical integration into sustainable agri-food value chains will not be attainable to all smallholders. This is particularly the case in much of northern and northeastern Uganda, where smallholders still largely farm or keep livestock for subsistence in relatively inaccessible areas, lack access to basic infrastructure, and have very low educational attainment levels. These smallholders are particularly vulnerable to climate variability, malnourishment and food insecurity at the same time.

Uganda's Northern region, for instance, is poorer compared to all other regions of the country. The region represents almost 35 percent of total land area, hosts 21 percent of Uganda's population, but around 44 percent of the country's poor (UBOS 2017). In the North, 59 percent of households consume only one meal per day (IFPRI 2015). Even if some degree of stability has been observed in recent years, the Northern Region has been through decades of violent conflicts and remains a fragile area. This is compounded by a massive influx of refugees particularly from South Sudan in recent years. Uganda hosts more than 1.1 million refugees (Okiror 2018), most of whom are seeking refuge in the Northern region. The Bibi Bidi settlement has become one of the largest in the world.

The complexity of challenges facing the North and other particularly vulnerable areas in Uganda calls for a holistic approach to rural development. Possible solutions are Community-Driven Development (CDD) approaches or programs such as the Refugee and Host

Population Empowerment (ReHoPE) strategy in refugee-hosting areas, among others. CDD is a methodology that empowers communities to design activities that enable household and community resilience, and which can be aligned with matching grant schemes, for instance. CDD approaches in Northern Uganda could be linked to agriculture practices, such as the production of nutrient-rich, high-protein and drought-resistant crops such as quinoa; urban agriculture approaches such as Hydroponics⁴⁰; and strengthened livestock systems with a focus on small ruminants to empower women. Building on the CDD approach, the multi-year, multi-sectoral ReHoPE strategy was developed to foster public service delivery, socio-economic wellbeing and security for both refugees and hosts. ReHoPE builds on partnerships such as with Koboko, a public-private partnership targeting 7,500 households in commercial agriculture, and Yunus Social Business, a social entrepreneurship designed to capacitate youth in refugee-hosting communities.

In addition, social safety net programs can provide smallholders a buffer against climatic and agriculture-related risks and shocks and also prevent falling back into poverty. Social safety net programs can further enhance consumption growth and investments into productivity enhancing agricultural practices (World Bank 2016). Yet, existing formal safety programs are limited in coverage to date, and mainly target Northern and North Eastern Uganda.⁴¹ Only five percent of poor households receive some kind of government transfer, whereas most poor households rely on either savings or help from family and friends.

36. That is, good-quality, higher-yielding, more drought-resistant seeds and planting material

37. Bold et al. 2015 tested urea/nitrogen fertilizer purchased in 360 randomly selected locations. None of the bags had the complete level of nitrogen content expected as per the label. Adulteration appears to happen at multiple stages of the supply chain, possibly already starting during the importing and shipment stage through transit countries, and then continues when wholesale and retail traders break large 50kg bags into smaller bags for sale to smaller farmers. Large-scale commercial farms purchase the fertilizer they use directly from international suppliers and hence can circumvent issues of poor regulation, while smaller farmers are most affected.

38. Since 1960, average temperatures have increased by 1.3°C, and are projected to rise by up to 2.5° by 2050. Seasonal rainfalls are becoming more variable, and extreme events such as droughts or floods are projected to become more frequent and intense.

39. The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

40. Hydroponics is a method of growing plants without soil by using mineral nutrient solutions in a water solvent.

41. These are the Social Assistance Grants Transfer for Empowerment (SAGE), currently delivered in fourteen out of thirty districts in Northern Uganda, and the Northern Uganda Social Action Fund (NUSAF) (Mejia-Mantilla 2017).

3.3.3 Land tenure

Secure property rights over land are central for agriculture development and commercialization.

Property rights provide the authority to decide on land use and investments, and incentives for sustainable resource management. Yet, about 80 percent of land in Uganda is currently under customary tenure, which is largely undocumented. Effects include limited tenure security on the side of farmers, insecurity of use rights and different claims over the resources, and in consequence land-related disputes, all which have shown to severely hamper agribusiness development and commercialization.

Multiple initiatives are ongoing to foster tenure security through the delivery of adequate documentation to land owners. The Systematic Land Adjudication and Certification (SLAAC) program, among others, aims to secure rights of land owners through the delivery of freehold titles for ca. 50,000 and 25,000 parcels in rural

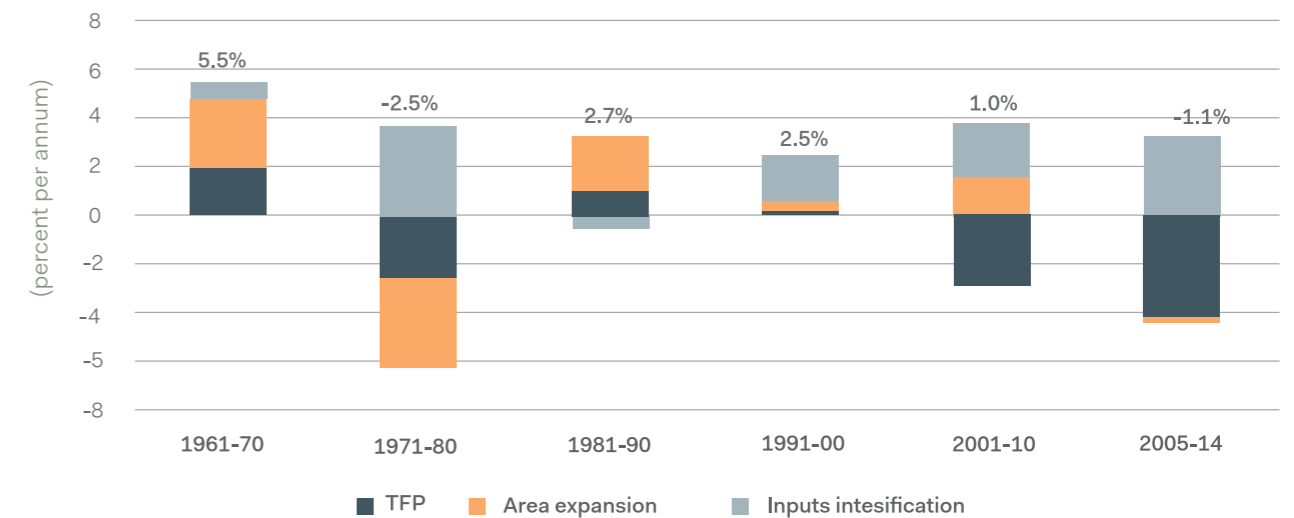
and peri-urban settings, respectively. The GoU has set up the Land Information System (LIS) at decentralized levels through which the coverage of the existing tenure registry shall be expanded and documented titles to all Ugandans provided (World Bank 2018a).

3.3.4 Extension

Agricultural productivity growth is based on increased technical or financial efficiency from using inputs such as fertilizer, labor and land, and/or technological progress that allows producing more with less. Such productivity enhancement is measured by Total Factor Productivity (TFP), or the ratio of output produced to the amount of all inputs used. Yet, TFP in Uganda has been negative on average since around 2000 (World Bank 2018a – see Figure 16). Achieving positive TFP growth requires better technology, tenure security and sound land management practices, as well as the dissemination of knowledge on input use through qualified extension services.



Figure 16: Decomposition of sources of agricultural growth in Uganda 1961-2014 (Net agricultural output growth in percent per annum at top of column in period indicated)



Source: Compiled from the US\$A International Agricultural Productivity database (<https://www.ers.usda.gov/data-products/international-agricultural-productivity/>)

Note: The three sources of growth listed sum to output growth in the period in question. Growth not explained by area expansion or increased use per ha of inputs (including labor) is attributed to TFP. TFP is a combination of increased allocative/technical efficiency & technological change.

However, Uganda's agricultural extension system under NAADS has gradually moved away from its original mandate of farmer advisory towards the provision of agricultural inputs with only limited knowledge transfer.

This change became more pronounced since the launch of the Operation Wealth Creation (OWC) in 2013, whose objective was, among others, to distribute production inputs to boost production and productivity at household levels. Tasks of the NAADS, in turn, were gradually reduced to supporting the management of the agricultural input distribution chains, largely through input procurement (World Bank 2018a). The free supply of inputs, however, has undermined quality seed production by agribusinesses, and hence hampered private sector development in this area. The free distribution of inputs without knowledge transfer can, moreover, create unintended consequences such as the depletion of soils and biodiversity, and further diminish already low levels of trust in improved inputs on the side of farmers. Besides, there are signs that publicly-

distributed seeds have often been of low quality, resulting in failure of seeds and seedlings for smallholders with sometimes severe economic consequences.⁴²

To improve agricultural extension, the GoU has undertaken several measures since 2014. It established a new Directorate of Agricultural Extension Services (DAES) with MAAIF. Moreover, a new National Agricultural Extension Policy (NAEP) and National Agricultural Extension Strategy (2016/17-2020/21) were launched in 2016. Notably, the NAEP underlines the need for a pluralistic agricultural extension delivery system, that is, to diversify the spectrum of extension providers beyond the government. In the past two years, progress has been made to extend both core staff for the DAES and the cadre of extension workers at the local government levels. Due to budget constraints, however, the provision of extension services as envisaged in the NAEP has not been realized to date.

⁴² This was reported during a Ugandan Parliamentary hearing held in May 2017. Reforms to Uganda's extension systems and the role of OWS are detailed in World Bank (2018).

THEME 2: FOSTERING PRODUCER ORGANIZATION AND VALUE CHAIN COMPETITIVENESS

Assessing the factors driving agriculture commercialization in Uganda, Nivievskiy et al. (2010) found that a main determinant was access to physical, human, and financial capitals. Larger farm holdings were more eager to commercialize since they could realize economies of scale by adopting modern technologies. Farmers with access to assets and connectivity to inputs and output markets actively engaged in the sector. To foster the development of a sustainable agri-food sector, access to these capitals needs to improve. A better linking of producers to value chains would be a critical step in this direction.

3.3.5 Access to finance

Access to finance is vital to all participants in agri-food value chains and is critical in enabling smallholder investments in the type of farming equipment and practices that can enhance resilience and improve livelihoods more generally. Yet, the EPRC (2018) finds that while the share of agriculture-related private credit increased markedly, from Ush785 billion in 2010 to Ush 2,317 Billion in 2017, financial institutions are focusing on the low risk and high cash flow segment of the value chain, namely agro-manufacturing. High risk agricultural production, in turn, is under-served. For instance, only 3 percent (0.3 million) of farmers borrow from banks (FSD 2018). And even among agribusinesses, the share of small-scale companies with a loan or line of credit stood at 6.3 percent in 2016 – compared to 44.1 percent for Kenya. This suggests that access to finance remains a binding constraint to be addressed not only for expanding the production base, but also for improving agri-food business development and competitiveness.

Financial institutions are often reluctant to serve agriculture in general, and smallholders in particular.⁴³

To this end, SACCOs and Warehouse Receipts Systems (WRS) are promising vehicles to foster smallholder financial

inclusion, and to tackle the lack of collateralizable land titles for loans. SACCOs⁴⁴ are voluntary associations where members pool their savings to obtain financial services such as loans for an economic or social purpose, that is, not limited to agriculture. WRS enable farmers to deposit storable goods such as grains or coffee in exchange for a warehouse receipt, which can then be used to access loans or credits. WRS have been in place in Uganda for some time with mixed results. Improvements to product grading and information technology in the system as promoted by the Government are promising steps to increase their impact (Katunze et al. 2017).

Other options for smallholder financial inclusion are value-chain financing and FinTech. In the case of value-chain financing, formal sector agricultural integrators use contract farming with smallholder suppliers, vertically integrated operations, or out-grower schemes to provide input credit for farmers. This form of financing is increasing in Uganda for tea, sugar, coffee, dairy, barley and sorghum (World Bank 2015). Through smartphone-based financial technologies (FinTech), smallholders and financial institutions located in rural areas can access a range of financial services, make mobile payments, receive remittances, or receive higher prices for their produce due to enhanced access to market information. One example is SmartMoney, a savings and payment system operating in Tanzania and Uganda (AGRA 2017). Another example is 'Mobis', a cloud-based micro-finance software for community-level financial entities that was developed by the Ugandan startup Ensibuuko Tech Ltd.

3.3.6 Infrastructure development

Adequate infrastructure is key for enhanced agriculture productivity and economic growth in Uganda. To this end, the GoU ascribes the transport sector a central role in NDP II. Some of the strategic objectives are to develop an adequate and reliable multi modal road and air transport network in the country, and to improve the

regulatory framework for the construction industry. While the transport sector's real GDP growth rate declined, the sector overall experienced a boost in government spending, as road construction and rehabilitation can be observed all over the country. An increased focus on infrastructure is commendable since poor rural roads and road maintenance hamper the access of smallholders to input and output markets, are a significant barrier to trade, and lead to lower farm gate prices or higher market prices since traders exploit their market power over farmers (FAO 2017b).

Information and Communication Technologies (ICT) are another critical area for enhanced competitiveness of the agri-food sector and smallholder inclusion.

ICT are critical to reduce asymmetries of information, to reduce transaction costs, and to secure information on transactions amongst the large number of small, widely dispersed players. Relatively cheap and easy to use devices such as smartphones and tablets can connect smallholders to high tech solutions such as market price, early warning or meteorological information, and extension services, among others. This has direct benefits for enhanced productivity and resilience, market access, and financial inclusion of smallholders, as well as for data collection and monitoring.

3.3.7 Education and skills development

Another critical component to fostering sustainable agri-food value chains is education and, more broadly, skills development. Many young Ugandans would rather become entrepreneurs than farmers, and farming is considered as unattractive due to its perceived physical arduousness and low profitability (Aga Khan University 2016; Yeboah & Jayne 2018). Yet, agri-food value chains and 'agri-entrepreneurship' can pave the way for young people to engage in the sector. Also given the fact that most young Ugandans still live in rural areas, agriculture could become very relevant to many.

This is particularly true when agriculture is related to ICT and emerging industries like renewable energy. Makerere University, for instance, hosts the Resilient Africa Network (RAN) that applies science and technology to strengthen the resilience of rural communities against natural and man-made stresses. The RAN innovation lab partners with the private sector and financial institutions, which has given

rise to many startups in the agri-food sector. One example is the Fruiti Cycle, a bio-gas powered, refrigerated tricycle through which farmers can transport perishables like fruits and vegetables to the market, and hence avoid post-harvest loss. Another example is the software company Afrosoft Ltd. that develops mobile phone apps through which smallholders can detect crop and livestock pests and diseases, and apps that provide them with crop price information to protect farmers from selling below market value. By fostering innovation labs like RAN and holistic youth programs such as the Youth Livelihood Program (YLP), discussed further in Box 9 below, that transfer financial and entrepreneurial skills to young people, their innovation potential can be harnessed for the agri-food sector and employment created.

Households with higher levels of education have been shown to have higher agricultural incomes and more productive non-farm enterprises. Education also enables migration and helps households gain more productive wage employment, which helps them to diversify in the face of shocks (World Bank 2016). At the same time, education raises the productivity of the labor force, and facilitates the adoption of new technologies to produce goods and services. Those households with secondary education disproportionately aided consumption growth in the 2006-2013 period, but also demonstrated superior coping capacity with agriculture-related risks (Mejía-Mantilla 2017). Yet, despite improved primary school enrollment, school completion in Uganda remains a challenge with a rate of 53 percent. Anderson et al. (2016) found that about 64 percent of sampled smallholders did not continue their education past primary school, and one in five had no formal education. Net enrollment rates in secondary education remain at very low levels, with only 27 percent among the population aged 13 to 17 (Mejía-Mantilla 2017). According to World Bank (2016), most Ugandan pupils lacks basic literacy and numeracy skills – questioning the quality of education.

Education raises the productivity of the labor force, and facilitates the adoption of new technologies to produce goods and services.

43. This reluctance results from various factors, such as: a lack of usable property rights to land; high transaction costs due to the remoteness of a dispersed set of clients; small size of farms and of individual transactions; weak communication and transportation infrastructure, high covariant risks due to variable rainfalls and price risks; and the physical absence of banking facilities in rural areas (World Bank 2018a).

44. SACCOs/MFIs are newly regulated entities (regulation for MFIs just issued a few months ago and one for SACCOs are about to come out following a stakeholder consultation in October 2018 This follows Tier IV Act of 2016 and the creation of Uganda Microfinance Regulatory Authority (UMRA) in late 2017.

Box 9: Youth Livelihood Program (YLP) ⁴⁵

The nation-wide YLP, implemented by the Ministry of Gender, Labor and Social Development, is a community demand-driven program. Youth are equipped with vocational skills and a revolving fund of up to US\$12.5 million to procure start-up kits. Also, loans up to US\$25 million may be given only under special consideration by the program management. Before funds are disbursed, the approved groups are subjected to orientation and training in financial management, accountability, and vocational training where necessary – mainly through Enterprise Uganda. The funds are advanced by local governments to the Youth Interest Groups (YIG) in the form of a Revolving

Fund (groups of 10-15 youth, in the 18-30 age bracket, unemployed, poor/ vulnerable, 30 percent must be females), who will either run a group enterprise, or will work to support one another in the development of their respective enterprises. YLP targets several categories of youth: educated or uneducated, rural or urban, dropouts from school and training institutions at any level, as well as unemployed graduates from tertiary institutions. It is not for those who are still in school/ studying. Commercial agriculture is one its major areas of focus; more than 65 percent of the 2,000 individual or collective youth projects supported so far are in agriculture (52 percent) or agro-forestry.

3.3.8 Vertical integration of smallholders

To foster the competitiveness of Uganda's agri-food sector, it is vital that the many geographically dispersed smallholders be organized and integrated into diverse value chains. Dispersion increases production costs and reduces farm competitiveness, while small production volumes increase purchaser transaction costs. Better organization can foster the economic inclusion of smallholders and increase their market power at the same time. Uganda faced an increase in cooperative movements in agriculture value addition in recent years, with more cooperatives forming and registering. A new State Minister for Cooperatives was appointed which suggests increased political will to foster producer organization (World Bank 2018a).

Vertical integration can help overcome challenges of branding, processing and retailing of higher value, quality sensitive, or perishable commodities. Small-scale producers living far from final markets can rarely provide for sufficient quantities or quality over the year, and hence may only get the lowest bulk price. Furthermore, they are generally unable to brand their products reliably, which is a critical element in building market reputation. By organizing production and facilitating quality grading through

producer integration into processing firms, challenges of branding can be overcome (Delgado 1999). Another form of vertical integration has emerged from the bulking of raw materials by formal sector aggregator firms, the growth of which has resulted in improved quality of raw materials and a reduced prevalence of aflatoxin contamination, product adulteration, and post-harvest loss (World Bank 2018a).

As the success story section above has shown, various private business models appear to be successful in linking smallholder farmers to international markets for value-added products, thereby improving their incomes, productivity, and resilience. Both multi-national and increasingly larger domestic firms bring managerial skills, capital, extension of knowledge to farmers, and entree into commercial networks outside the country. They have the expertise and the scale to achieve cost-effective global certifications in desirable traits. While integrators in these arrangements benefit from secure and adequate supplies of raw materials, smallholders can finance improved inputs; access new technologies and skills; and receive reliability in outlets and prices (World Bank 2018a). However, there are a range of potential challenges for producer groups when integrating into commercial agriculture value chains. These are, among others, persisting knowledge and information

asymmetries that can reduce bargaining power; barriers to entry particularly for poorer farmers as they often need to invest in fixed capital or inputs; and potential dependencies created by longer-term contracts. In regions with little to no competition, companies can further establish a monopsony which reduces the options of farmers to negotiate prices (Smalley 2013).

THEME 3: STRENGTHENING THE REGULATORY AND INSTITUTIONAL ENVIRONMENT

To foster agriculture productivity and enhance the competitiveness of agri-food value chains in Uganda, a range of institutional and regulatory challenges need to be addressed. These entail inter-institutional coordination, public sector spending on agriculture, and the implementation of input regulations and quality controls.

3.3.9 Decision making and coordination

Institutional weaknesses and a lack of coordination among agriculture-related ministries and agencies have been important bottlenecks for translating policy plans into effective action. Multiple stakeholders engage in agriculture. These comprise the network of research institutes such as NARO and the National Agricultural Research System (NARS), regulatory bodies for three main commodities (coffee, cotton, dairy), and 'commodity platforms' for seeds, maize and oilseeds, among others. Distribution functions for agriculture inputs were transferred from NAADS to Operation Wealth Creation. Extension functions were transferred back to the MAAIF and under the new Directorate of Agricultural Extension Services. While MAAIF has a central policy and coordinating role in the agriculture sector, other government entities have significant planning and implementation roles that complicate coordinated investment and service delivery.⁴⁶ An example of this is smallholder farmer organizations, for which the Ministry of Trade, Industry and Co-operatives has a key role in the development, registration and linkage to markets, which are an important platform for delivery of extension services.

Coordination between MAAIF, local governments and other ministries with an impact on agriculture (e.g. water, transport, trade) has remained weak. Decentralized governments continue to have responsibilities related to agricultural extension, land management, and the support of farmers' groups, but they are constrained in their functioning through a lack of funding, alongside other challenges (Joughin and Adupa 2017). Other institutional challenges are inefficiencies in staffing patterns; weak data collection and monitoring of sector trends; as well as poor absorption capacity of public institutions. Most recently, the GoU has announced a decision across sectors to merge or mainstream several agencies that have been perceived as underperforming or high cost.⁴⁷ While it is too early to draw conclusions on possible implications of this reform, cost efficiencies could potentially be generated and the collaboration among agriculture-related agencies improved.

3.3.10 Public expenditure for agriculture

The importance of agriculture for inclusive growth, underlined in several government development strategies, does not necessarily translate into sufficient public expenditure for the sector. As discussed in Box 2, the share of public expenditure in support of the agriculture sector (PEAS) within overall final public expenditure averaged four percent between FY13/14 and FY17/18. Of this, NAADS was the biggest stand-alone expenditure item and received on average about 30 percent of total final PEAS between FY13/14 and FY17/18. This was followed by rural development-related ministries, MAAIF, and NARO that received about 22, 19, and 8 percent, respectively. The share of donor funds in PEAS remains substantial and averaged 33 percent over the FY13/14 to FY17/18 period. However, there seems to be no close monitoring of their activities and expenditures after the budget design phase. Furthermore, donors increasingly channel resources through projects rather than programs. Since project financing is usually short-term in nature, it is not a robust financing source for a sustainable agri-food transformation agenda.

45. FAO, 2017

46. Preliminary findings from the forthcoming World Bank, Uganda Agriculture Sector Expenditure Review (2018a)

47. For agriculture, this includes the NAADS, UCDA, DDA, and the Cotton Development Organization (CDO), all of which are to be mainstreamed back into the MAAIF. The agricultural research organization (NARO) would be merged with the animal genetic resources agency NAGRC.

Alongside strong growth in spending on processing and marketing, PEAS has increasingly focused on the provision of input subsidies. As shown earlier in Figure B2, the share of PEAS going to these subsidies has increased from about 19 percent in FY13/14 to about 25 percent in FY17/18 (with a high of 33 percent in FY15/16). The share of decentralised PEAS has also been declining and equalled about 4 percent in 2017/18, which suggests an increasing centralization of financial authority over the agriculture sector.⁴⁸ The jump in spending on research in 2016/17 is attributable to a large inflow of donor money for the Agricultural Technologies & Agribusiness Advisory Services (ATAAS) project, which was completed in June 2018 (World Bank, 2018b). The end of ATAAS jeopardises the sustainability of research funding, given the project represented about 40 percent of the agricultural research budget in 2016/17.

Of the final PEAS (about 20 percent) that explicitly targets agricultural sub-sectors, there has been an increasing emphasis on cash crops – particularly coffee – and almost no targeting of food crops. Food crops should, however, receive more attention. Farmers can only switch to cash crops or livestock in the presence of well-functioning commodity and credit markets that allow them to sell their produce, buy the food they need, and make the required investments. In the absence thereof, farmers will likely resist the switch, because it might induce heavy costs or reduce food security and nutrition. Thus, a more balanced commodity targeting strategy is necessary to ensure a smooth transition towards a more market-oriented agricultural economy. Besides, food crops also have substantial agribusiness potential that needs to be tapped into.

Alongside these expenditures, there are various public funding initiatives in favor of agri-food sector development. These are, among others, the agricultural credit facility, the youth livelihood fund, the youth venture capital fund, the microfinance support center, and the Uganda Women Entrepreneurs Project. However, these initiatives are scattered among different agencies, and have

been uncoordinated and non-transformative to date (EPRC 2018).

3.3.11 Regulatory environment

Finally, to foster agricultural productivity and agribusiness development, an enabling regulatory environment is critical. According to the Enabling the Business of Agriculture⁴⁹ (EBA) report (World Bank 2017), which compares regulatory best practices for agribusiness among currently 62 countries along eight indicators, most of Uganda's scores are close to the global EBA average. A country rank of 31 however suggests room for improvement in several areas. These are in, particularly, the regulatory framework for fertilizer import and distribution, seed and fertilizer registration, and input quality control. For instance, the process of fertilizer registration, per the time and cost involved, is one of the most burdensome amongst the assessed countries, costing the equivalent of 215 percent of income per capita (World Bank 2017). In terms of fertilizer quality control, EBA findings suggest that the prevalence of fake or expired fertilizers has greatly eroded the confidence of farmers in fertilizer purchase and use. The sale of fertilizer products from open bags is neither prohibited nor penalized, increasing the risk of tampering or counterfeiting products.

In the seed subsector, only three of eight regulatory elements that are considered necessary for a strong plant protection framework are in place (World Bank 2017). A strong plant protection framework is however needed to protect crops from pests and diseases. It allows the government to regulate cross-border agricultural trade more effectively and in a cost-efficient manner, to negotiate access to foreign markets for their producers, and to issue valid and reliable phytosanitary certificates for exports. Land users/owners are, finally, not required to report pest outbreaks to the government. The reporting obligation is however important for prompt management of endemic pest populations, which is even more important considering increasing pest and disease outbreaks Uganda and related economic damage.

3.4 Conclusions and Recommendations

Income growth, urbanization, and dietary shifts into higher value and more processed foods has increased domestic demand for higher value agriculture and food in Uganda. At the same time, the country is increasingly integrated into regional trade regimes, and export opportunities for the great diversity of commodities that Ugandan agricultural systems provide have never been better. In the aggregate, these trends offer substantial income opportunities for the multitude of smallholders and young Ugandans, and for value addition beyond primary production and across the agri-food system. Multiple firms, particularly along the dairy and meat, maize and coffee value chains have emerged that have fostered the vertical integration of smallholders and linked them to markets and finance. Fostering the development of sustainable agricultural value chains can hence reduce transaction costs through producer organization, but also enhance the provision of inputs and extension services through private providers. To this end, an enabling policy and regulatory environment is needed that crowds in private investment to the agri-food sector.

Fully harnessing the multiple agri-food sector opportunities and spurring the emerging agribusiness dynamism can pave the way for Uganda to develop into a middle-income country by 2040. To achieve national development goals, Uganda's agri-food sector still needs to overcome a range of challenges. These relate, in particular, to agricultural productivity and resilience, competitiveness of agri-food value chains, and institutional and regulatory efficiency. Since Uganda is socio-economically and geographically very diverse, the agri-food sector will not be able to transform overnight, and policy action at times will need to take a context-specific and targeted approach. However, there is a range of measures which are particularly promising to foster the transition from lower-value smallholding towards a higher value-added agri-food sector in Uganda.

3.4.1 Fostering agricultural productivity

Extension

The restructuring of the extension system through the 2016 NAE policy and strategy is an important initiative by the government to increase the efficiency

and effectiveness of extension service provision. The complementary aspect of this reform would be a move away from the free distribution of inputs. This could release public expenditure to be dedicated to other priorities such as farmer training, would encourage private sector activity in input provision, and increase trust of smallholders in formal input markets. Given the low resilience of Ugandan agriculture and producers, extension should focus on the transfer of climate-smart soil, livestock and water management practices and technologies. It could be linked to social protection programs to benefit the most vulnerable Ugandans, and to radio programs and farmer field schools to reach remote areas. The current extension system should be supported by adequate and qualified staffing both in the public and private sector; and by improved data collection systems and capacities – for instance regarding the application of ICT and data analysis. An ongoing increase to the number of extension workers, as a necessary step in the implementation of the NAE policy, as well its stated objective to foster pluralism in extension service provision are promising developments.

Land tenure

While being a sensitive issue, land tenure is a critical pillar to fostering agricultural productivity and agri-food sector transformation. Widespread tenure insecurity and conflicting claims over land to date hamper investment into improved technologies and inputs, as well as the establishment of commercial farms particularly in Northern Uganda. Ongoing initiatives to foster land registration, titling and administration should be expanded.

3.4.2 Linking producers to markets through sustainable agri-food value chains

Producer organization

The public sector should seek to foster vertical coordination outcomes for both smallholders and aggregating firms through a three-pronged approach. The first consists of creating a knowledge platform for recording and diffusing best practices in agricultural vertical coordination. This could be, secondly, done alongside the identification of a public authority endowed with primary responsibility and tools for overseeing vertical coordination of agricultures. Thirdly, there is a need to

48. Preliminary findings from the forthcoming World Bank, Agriculture Sector Expenditure Review (2018)

49. Enabling the Business of Agriculture (EBA) measures and monitors key elements of countries' regulatory framework that impact the enabling environment for agribusiness. It assigns scores that can be used to compare the regulatory environment of different countries; to identify strengths and areas for improvement, and to monitor progress in a given area. EBA currently covers Uganda alongside 61 other countries and has so far developed scores for eight topics, namely: seed, fertilizer, machinery, markets, transport, finance, water, and ICT.

clarify the legal status of vertical coordination obligations such as under contract farming, and to foster responsible investments in agriculture value chains. Policies limiting the development of farmer cooperatives should be reviewed and revised. Moreover, options should be explored that specifically integrate young people into the agri-food sector. Suggested measures range from incentivizing youth participation in agricultural cooperatives, improving their access to land, development of technical and financial skills, and supporting the collaboration between the youth and financial institutions (Flink et al. 2018).

Access to finance

Mobile money transfers and other FinTech solutions, value-chain financing, and WRS are promising approaches to de-risk the sector, to overcome the lack of collateralizable land titles for loans, and to increase farmers' access to finance. These vehicles should be further supported. The 5000+ SACCOs currently registered in Uganda could be better supported through inclusion in legal banking frameworks, governance, and supervision mechanisms.

Infrastructure

An observed increase in investments in Uganda's road and transport network is commendable. Alongside the construction of new roads, investments should target the rehabilitation of rural and feeder roads to foster the connection of farmers to input and output markets. ICT are, moreover, critical to foster access to finance and the transfer of information about market prices, extension, and agriculture-related risks, among others. They further have great potential to spur the innovation and entrepreneurial potential among Uganda's youth in the agri-food sector. To this end, the diffusion of and access to ICT should be enhanced. Necessary measures span from enhancing and sustaining modern infrastructure in rural areas, encouraging participation of the private sector in ICT infrastructure development, and hastening enforcement and awareness of ICT related (property) laws.

3.4.3 Enhancing resilience of smallholders and rural livelihoods to agriculture-related risks

Climate-smart agriculture

The government should expand its ambitions to scale up climate-smart agriculture. Successful practice of CSA requires an enabling environment characterized by

functional institutions and coordination. Reforming the extension system and ensuring its staff have adequate technical skills and knowledge to disseminate tailored, gender-sensitive and climate-smart technologies and advice is important. To identify the most cost-effective CSA measures suitable for a given agricultural system, and to elicit additional financing streams and implementation pathways, a multi-stakeholder platform could be created that aligns governmental actors with research institutes, private sector entities and producer organizations.

Irrigation and water conservation

Another critical area to foster resilience and increase productivity is to reduce farmers' dependence on increasingly variable rainfalls. Ongoing efforts to foster irrigation from its currently low level should be continued. Subsistence farmers would benefit from low-cost drip irrigation and water conservation practices. Rolling out the National Irrigation Policy (NIP) will be key to improve irrigation infrastructure development, management and regulation. Here, it will be vital that government, private sector and farmer water-user groups work together in project planning and implementation to increase the efficiency, economic viability and sustainability of irrigation systems.

Early Warning Systems

Finally, producers need to have better access to climate and disaster risk-related information. To improve early warning mechanisms in Uganda, several measures can be undertaken. The incorporation of climate forecasts into nationally available EWSs and tools should be supported, and technical and financial capacities built to better downscale information to the sub-national level. In addition, vulnerable households and communities should be supported in developing emergency response mechanisms at the local level. A national early warning committee or secretariat could be established to coordinate responses across jurisdictional levels (Braumoh et al. 2018).

3.4.4 Improving the institutional and regulatory environment for enhanced productivity and competitive agricultural value chains

Input quality and regulatory environment

For the agri-food sector to promote higher growth and productivity, quality inputs are needed. This will foster demand and trust in new technologies on the

side of farmers and enhance their adoption. To this end, changes are needed to the regulatory environment that facilitate access to reliable and high-quality agricultural inputs at reasonable costs, but also to foster agribusiness development at the input level. For example, licensing procedures and import processing for new inputs and seed varieties should be simplified and delays reduced. By implementing the National Seed Policy, disincentives to private sector seed provision could be reduced. The current development of an eVoucher system by the MAAIF and its phased roll-out should be an important way to encourage access to and usage of quality agricultural inputs by farmers. To assure input quality, the regulatory burden should be shifted from controlling registration to controlling actual operations through random sampling.

Sector expenditure and stakeholder coordination

Public spending on Agriculture should be increased and made more efficient, predominantly by focusing on the provision of public goods such as training,

research and development, and infrastructure. There is room to enhance the allocative efficiency of PEAS. While the increase in processing and marketing expenditures is encouraging, shares devoted to irrigation systems are still too low. In addition, increased investments in reliable roads and transport infrastructure are beneficial to foster market access and lower transaction costs. The end of the ATAAS project prompts the need for renewed thinking on means to support agricultural research.

While donors play a large role in agriculture sector financing, there seems to be no close monitoring of their activities and expenditures after the budget design phase. Data and information collection processes on external partners should be improved to inform budget performance assessments during the fiscal year. If it's to fulfill its role, MAAIF needs to be able to fully coordinate public activities in the sector and to stay on top of all spending and funding.



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