

Enabling inclusive growth through agro-industrialisation and agricultural transformation



In brief

- Despite a strong comparative advantage, favourable climate conditions, and increased market opportunities from a booming population and rising regional demand, agricultural output growth in Uganda has stagnated at 2% per annum for the last five years, lagging behind the 3-5% average seen in the region.
- A key factor driving the stagnation in agricultural output growth has been a decline in productivity, with relative productivity of labour in the agricultural sector significantly lower than that of labour in the non-agricultural sectors.
- This note outlines key constraints to agricultural transformation and agro-industrialisation in Uganda and some of the possible policy interventions.

*This project was funded
by IGC Uganda*

Introduction

The Government of Uganda has identified agriculture (which employs 70% of the population) as a key growth sector both in its National Development Plan and most recent budget strategy for financial year 2019/18. However, despite a strong comparative advantage, favourable climate conditions, and increased market opportunities from a booming population and rising regional demand, agricultural output growth has stagnated at 2% per annum for the last five years, lagging behind regional output growth of 3-5% and average annual population growth of 3.3% in the same period¹. A key factor driving the stagnation in agricultural output growth has been a decline in productivity, with relative productivity of labour (as measured by the value added per worker) in the agricultural sector significantly lower than that of labour in the non-agricultural sectors (Gollin et al., 2016). Similarly, productivity as measured by the average Total Factor Productivity², shows a negative trend since 2000 (World Bank, 2018).

In light of the above trends, the [Uganda National Budget Conference and Economic Growth Forum FY 2019/20](#) brought together various policymakers, the private sector, donor community, and academics to discuss the constraints to growth of the sector and identify a course of policy actions or required budget financing that will boost agricultural productivity and facilitate agro-industrialisation. Presenters for the session on agriculture included Dr Swaibu Mbowa (Economic Policy Research Centre), Dr Nathan Fiala (University of Connecticut), Dr Ameet Morjaria (Northwestern University), and Mr Pius Wakabi, the Permanent Secretary at the Ministry of Agriculture, Animal, Industry and Fisheries³. The key discussant was Dr Tessa Bold (IGC, University of Stockholm). Below are key points from the discussion.

Constraints to productivity growth and policy solutions

Weak regulation and lack of quality enforcement deters commercialisation of agriculture and productivity growth

A common anecdote is that agricultural inputs available on the Ugandan market are of poor quality, limiting yield returns to farmers and the profitability of investing in quality inputs. Two IGC studies have examined this issue with a view to provide evidence on the extent of the problem and why/where along the supply chain quality deteriorates. [Bold et al., 2015](#)

1. UBOS, 2017

2. Total Factor Productivity (TFP) is calculated as the residual component of aggregate output growth after accounting for all other measurable sources of growth such as increased use of inputs and an expansion in the factors of production (land, labor, etc.)

3. MAAIF

found that fertiliser sold in retail stores contained 67% of the nitrogen it should, and the quality of a bag of seeds bought from a local retailer was half that of a bag of authentic seeds. Using assumptions of farmer value of time, the study also found that only 20% of fertiliser samples bought locally was profitable and only 1% of samples yielded a return above 10%.

Barriga and Fiala (2018) attempt to ascertain the cause of poor seed quality in Uganda by examining where and why quality deteriorates along the seed supply chain. The study finds that while sample seeds performed well in terms of physical purity tests (e.g., DNA similarity, percentage of pure seeds) there was significant variation in performance tests (e.g., germination rates, moisture content, and vigor tests) – with outliers more common at the retailer level than at any other level of the supply chain. The results suggest that the prevalence of low seed quality may be linked to poor supply chain management, i.e., mishandling and poor storage immediately after original sources, rather than intentional counterfeiting or adulteration by lower level sellers.

Policy solutions

Fund and strengthen existing monitoring mechanisms to target quality control interventions: To improve regulation and quality enforcement, one immediate option would be to increase the staffing and financial resource outlays for regulatory bodies such as the National Seed Certification Service (NSCS), the Agricultural Chemicals Board (ACB), and the Uganda Coffee Development Authority. The NSCS, for instance, employs only 11 specialised personnel for inspecting the quality and quantity of seeds, compared to over 60 in Kenya. Apart from addressing personnel shortfalls, the burden of regulation should also be shifted from controlling registration (licensing of traders), to improving supervision through random sampling of actual transactions and regular inspections of seed companies (World Bank, 2018).

Also, findings from Barriga and Fiala, 2018 seem to suggest that quality control efforts have disproportionately emphasised certification and labeling through initiatives such as *AgVerify*. While this programme tried to address concerns of farmers and anecdotes in the press, it was costly to farmers and neglected improvements in supply chain management. There is thus need for both the government and donors to shift focus on improving quality control through improved storage and handling. Possible scalable interventions would include strategic public investments, such as cold storage and market-linked roads. Seed quality testing and monitoring such as that employed in (Barriga and Fiala, 2018) could also be scaled-up by the government and used as a warning system for farmers

Lack of coordination and a weakening of the public institutional base to support agriculture

It was also widely agreed that institutional weaknesses and a lack of coordination among agriculture-related ministries and agencies poses a significant threat to the transformation of Uganda's agricultural sector and agro-industrialisation efforts (e.g., there are over 20 existing acts and policies related to agro-industry, creating significant challenges for effective implementation and policy action). Furthermore, technological support to farmers through the provision of agricultural extensions services is very poor with the ratio of extension worker to farm standing at one worker per 2,200 farms against the global benchmark of one worker per 500 farms⁴. According to Barungi et al., 2016, the weakening of Uganda's extension system has been driven in part by a shift away from its core function as a provider of advisory services and knowledge transfer to a new role of input procurement for free distribution under the National Agricultural Advisory Services (NAADS), which was allocated about a third of the sector budget for the recent FY 2018/19.

Policy solutions

Expand extension services to farmers by reallocating inefficient spending:

Given the government's constrained budget and the likelihood of a continued decline in donor funding, re-allocating some of the spending on NAADS would release the much needed funds to facilitate outreach to small-scale farmers through an effective extension system.

Support the new agricultural extension policy and budget: Furthermore, MAAIF, under the Directorate of Agricultural Extension Services, should work to minimise duplicative efforts between agencies by focusing on coordination and empowering local governments to deliver extension services, through the National Agricultural Extension Policy and Strategy, 2016. The new strategy, which incorporates the gradual recruitment of extension staff over five years, will need increased budget support particularly non-wage and wage support to facilitate outreach at the local level.

Strengthen the capacity for MAAIF to carry out economic and policy analysis: It is critical that both development partners and the government assist the MAAIF to implement an effective Monitoring and Evaluation Unit that will improve data collection and provide evidence-based guidance in the design of agricultural policy and in the ministry's dialogue with external stakeholders.

4. CSBAG, 2016

A weak agro-manufacturing base and low commercialisation of agriculture

To meet growing demand from the region and urban centers, both the recent NDP⁵ and the Agriculture Sector Strategic Plan (2015/16 - 2019/20) recognise the need for a transition from subsistence farming to commercial farming and agro-manufacturing. The shift from primary production to agribusiness and agro-manufacturing would create much needed employment opportunities and raise labour productivity. However, in spite of several policy pronouncements targeted towards agro-manufacturing and industry, the sector remains largely dominated by fragmented, small-scale informal farmers (76%⁶), while the share of processed agricultural commodities and products remains less than 5%⁷.

Policy solutions

Vertical integration of smallholder farmers into markets and supply chains: adopting an integrated planning and budgeting approach, where farmers are provided with inputs and extension services based on pre-identified markets and supply contracts to agricultural trading companies, would create incentives for farmers to produce higher-value, quality-sensitive raw materials. Beyond improved quality and value-addition, the integration of local firms into these supply chains would also provide backward linkages that foster knowledge transfer ([Gollin et al., 2016](#)) Successful examples of these linkages are already evident in the dairy, coffee, and maize value chains. For instance, a recent study by [Morjaria and Sprott, 2018](#) finds that investments in washing stations by exporters such as Kyagalanyi Coffee Ltd in Mount Elgon have seen the Arabica cupping quality rise from 78/80 which trades at board prices or below to over 84/85, which is quality that attracts premium Scandinavian buyers and specialty roasters. Apart from receiving premia for better quality beans, participating farmers have also been able to register yields of up to 1 mt/ha for Arabica, compared to a norm of 0.4 mt/ha.⁸

As in the above example, while the role of vertical aggregation is best played by private sector actors, the government must also adopt a proactive role by facilitating the traceability of high-quality raw materials (e.g., through agricultural zoning), matchmaking international firms and potential local suppliers, alleviating local capacity constraints through enterprise development schemes, enforcing contract farming arrangements, and strengthening farmer groups such as cooperatives and farmer associations.

5. National Development Plan II

6. Uganda Bureau of Statistics (Uganda National Panel Survey), 2015-16

7. Government of Uganda, Policy Statement for MAAIF for financial year 2011/12

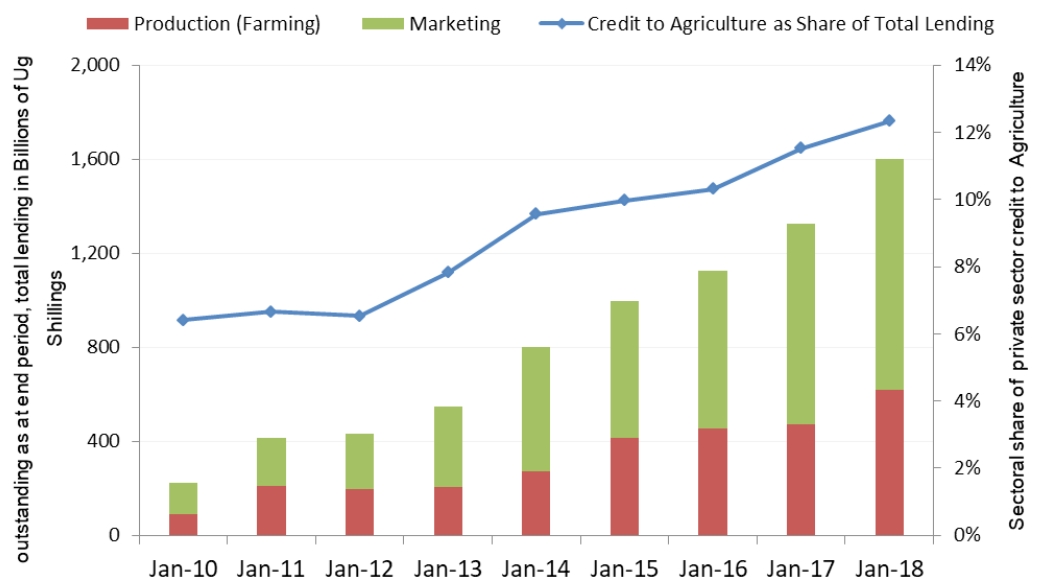
8. (World Bank, 2018)

Lack of access to credit and working capital

Whereas access to affordable and working capital is a key facet to supporting the expansion of processing capacities and upgrading of value chains for agro-industry, only 12% of total private sector lending went to the agricultural sector in June 2018 (Figure 1 below) – an indication that traditional financial institutions remain reluctant to lend to the sector, owing partly to its risky nature and the lag between investment and expected return (for most cash crops, revenues are only realised three or four months after planting).

Whilst there has been some progress made⁹ to address the gap in market financing through various schemes such as the Agricultural Credit Facility, the growth in financing has been skewed towards marketing, not necessarily production (Figure 1 below), and funds have remained largely out of reach to rural, small-scale farmers, which is less supportive towards addressing the quality and volume gaps containing Uganda’s agro-industrialisation agenda. Upcoming IGC research, for instance, shows that because farmers face immediate cash needs, close to 60% of coffee trees are being sold in forward contracts (i.e., several months before harvest) often to the detriment of cherry quality available to exporters.

Figure 1: Share of total outstanding loans to agricultural sector and sub-sectors



Source: Bank of Uganda

9. The share of total outstanding loans to the agricultural sector has doubled from 6.4% in June 2010 to 12.3% in June 2018

Policy solutions

Modify existing initiatives or develop new approaches to agricultural finance, e.g. harvest-time loans: Simply providing access to agriculture is not enough to achieve agro-industrialisation, it is important to also consider who receives access, and on what terms. For instance, a recent study by Maitra et al., 2014 found that by creating flexible individual credit lines that (a) matched loan repayment schedules to crop cycles and (b) used local intermediaries (who have better information about the creditworthiness of rural borrowers) as loan agents, farmers' crop production and incomes increased by 17% and 20% respectively, while also significantly lowering the risk and cost of loan administration to the lender.

Coordination of donor and government financing to the sector: Agricultural financing interventions have in the past been coordinated outside the sector, with MAAIF excluded from the implementing agencies¹⁰. Furthermore, donor support to the sector has increasingly taken the form of project-type interventions, with less funding going towards pooled programs, technical assistance or budget support. To raise the impact of agricultural financing, there is need for greater coordination and consolidation of funds within government and across donors.

Reduction in agricultural research funding

There is need to create new, homegrown agricultural technologies for production, storage, and transportation in order to raise agricultural productivity and address some of the gaps in the quality of inputs. However, budget allocations to the national agricultural research agency (NARO¹¹) have shown a consistently declining trend falling by 45% between the current fiscal year (FY 2018/19) and FY 2016/17. Moreover, donor financing, which accounted for two-thirds of total NARO spending in 2014, has also seen a significantly decline with the closure of a large externally financed project in mid-2018¹².

Policy solutions

Raise funding and institutional support to NARO for technological research tailored to Uganda's agricultural landscape: the Brazilian Agricultural Research Corporation 'Embrapa' financed through profitable research ventures including cattle breeding, the creation of genetically

10. National Planning Authority, Assessment Report on the Certificate of Compliance for the Annual Budget FY2017/18

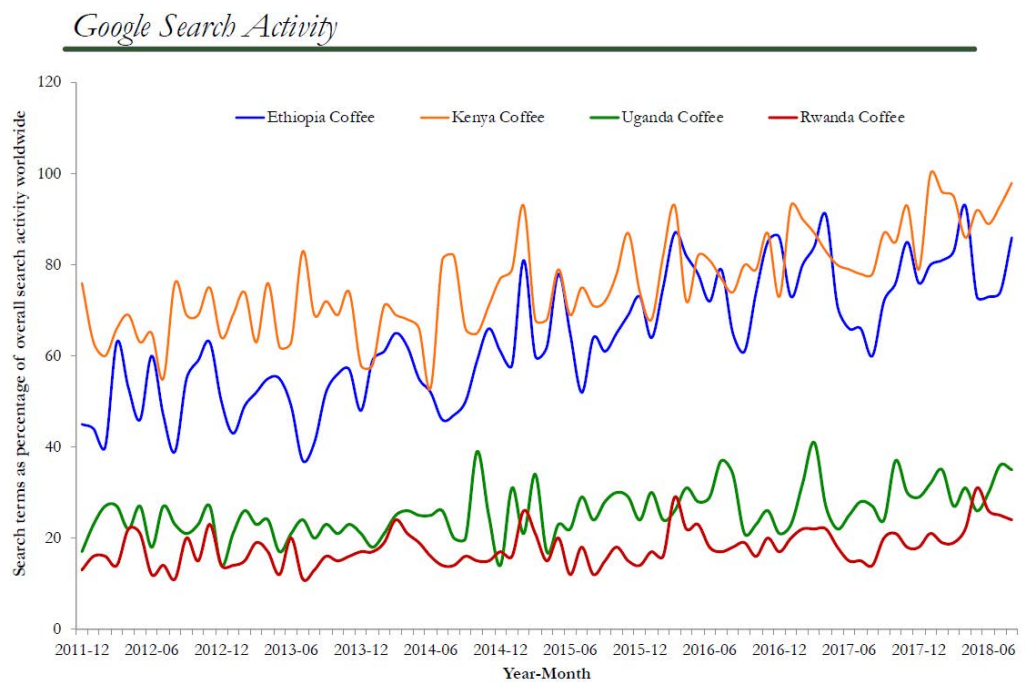
11. National Agricultural Research Organization

12. The World Bank funded Agricultural Technology and Agribusiness Advisory Services (ATAAS), a US\$ 127.2 million project approved in 2010 and closed June 30, 2018

modified seeds, and development of biodegradable wound dressings¹³ provides a good case example of how this can be sustainably achieved.

Inefficient branding and low market awareness of Uganda’s coffee
Uganda’s agricultural produce, most of which comes from smallholder farmers, faces a major challenge in terms of market positioning and brand presence. For example, according to Morjaria and Sprott, 2018, one of the key reasons Uganda’s Arabica coffee trades at a discount (up to 40% less) on international markets, despite its high quality, is poor branding and low end-consumer awareness as depicted in Figure 2 below which shows comparisons of internet searches for the different types of regional African coffee – searches for Ugandan coffee trail searches for Kenyan and Ethiopian coffee despite having similar volumes and quality.

Figure 2: Awareness of Ugandan coffee as depicted by Google search activity



Policy solutions

Direct contracting and market-led brand awareness campaigns: to avoid the development of Uganda’s coffee in a haphazard manner under various identities, Morjaria and Sprott, 2018 note that government intervention is required to build a consistent Ugandan market presence and recognition.

13. United States Department of Agriculture, Economic Research Service, International Markets & Trade, “Brazil”, USDA. <https://www.ers.usda.gov/topics/international-markets-trade/countries-regions/brazil/>

14. Source: Morjaria and Sprott, 2018

This can take the form of: (a) a strong visual element wherever Ugandan coffee is the majority content of a package, as was successfully implemented in Colombia, (b) targeted sales to specialty roasters (e.g., Starbucks, Nestle, etc.) promoting Ugandan Arabica coffee as single-origin coffee in high-value locations, and (c) competition auctions to raise international awareness, e.g., the Cup of Excellence competition was successfully launched in Rwanda in 2008, with prices for winning coffees going up by three times the average price.

Conclusion

Agriculture remains the backbone of Uganda's economy, and the key sector that will drive poverty reduction and inclusive growth in the future. It is therefore of utmost importance that recent negative trends in agricultural productivity growth are reversed and that the government addresses key constraints to agricultural transformation and agro-industrialisation as laid out above. Some of the possible policy interventions identified include: expanding extension services to farmers by re-allocating in-efficient spending, vertical integration of smallholder farmers into markets and supply chains, strengthening existing monitoring mechanisms to target quality control interventions, modifying existing agricultural finance initiatives to match crop cycles and production gaps and increased market-led awareness campaigns to build a consistent brand presence and recognition of Uganda's coffee.

References

Barriga, A., & Fiala, N. (2018). *The Supply Chain for Seed in Uganda: Where Does It All Go Wrong?* International Growth Centre.

Barungi, Mildred ; Guloba, Madina ; Adong, Annet. (2016). *Uganda's Agricultural Extension Systems: How Appropriate is the Single Spine Structure.* Economic Policy Research Centre.

Bold, T., Kaizzi, K., Svensson, J., & Yanagizawa-Drott, D.-D. (2015). Low Quality, Low Returns, Low Adoption: Evidence from the Market for Fertilizer and Hybrid Seed in Uganda.

CSBAG. (2016). *Financing Uganda's Agricultural extension in FY2016/17 and beyond.*

Douglas Gollin; Akura Mugenyi; Ritwika Sen. (2016). *Agricultural transformation and Urbanization in Uganda.* International Growth Centre.

Maitra, P., Mitra, S., Mookherjee, D., Motta, A., & Visaria, S. (2014, November). Financing Smallholder Agriculture: An Experiment with Agent-Intermediated Microloans in India. *National Bureau of Economic Research.*

Morjaria Ameet; Martin Sprott. (2018). *Ugandan Arabica coffee value chain opportunities*. International Growth Centre.

Uganda Bureau of Statistics. (2017). *Statistical Abstract*. Kampala.

World Bank. (2018). *Closing the potential performance divide in Ugandan Agriculture*. Washington, DC.