**Policy brief**
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# Transforming Uganda's agricultural sector for sustained economic growth

## In brief

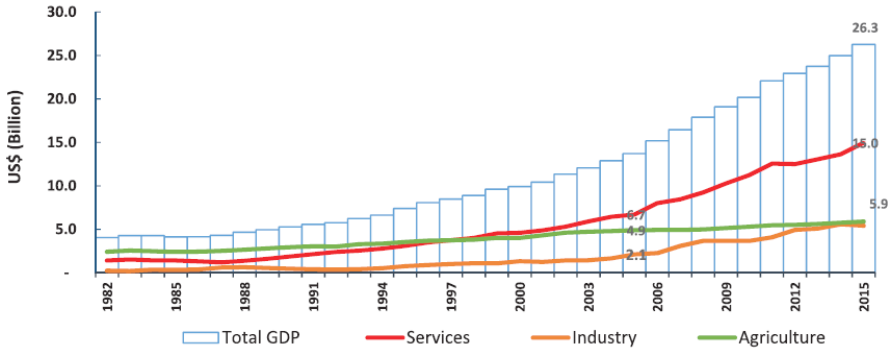
- The recent slowdown of Uganda's economy has drawn the attention of leaders at all levels of political office. Analysts have cited the poor performance of the agriculture sector as a major underlying cause.
- Agricultural productivity in Uganda is below its potential – constrained by limited use of modern farming methods. Weather is increasingly volatile, yet few farmers use irrigation. Modern seed and fertilisers available on the market are of low quality, and avoided by farmers. Public agricultural support services can rectify these issues, but are understaffed and underfunded.
- To unlock Uganda's agricultural potential, the government should focus on 1) improving delivery of agricultural support services, 2) facilitating farmers' access to price and weather information, and 3) promoting market-oriented production, by improving agricultural markets.

*This project was funded by IGC Uganda*

## Economic context

The recent slowdown of Uganda's economy has drawn the attention of leaders at all levels of political office. Analysts have cited the poor performance of the agriculture sector as a major underlying cause. As seen in Figure 1, sectoral GDP trends in the service and the industrial sectors experienced rapid growth from 2000-15, each doubling in value, whereas agriculture grew at an annual rate of 2%. This growth rate was exceeded by the population growth rate (3.3%), raising the threat of food insecurity.

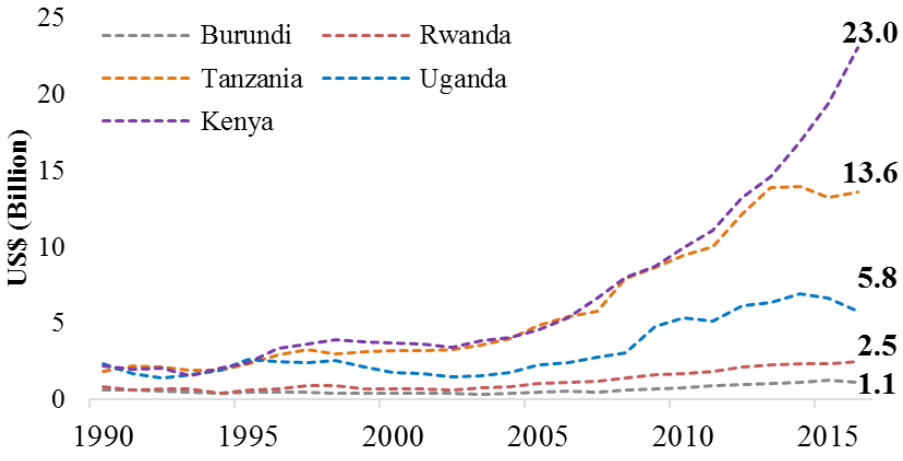
**Figure 1: Trends in GDP by sector (1982-2015)**




*Source: Mwesigye et al. (2017)*

The challenges facing Uganda's agricultural sector are highly correlated with regional climatic trends. Between 2010-15, East Africa experienced one of the longest droughts in history. Agricultural production declined in all states except for Kenya (see Figure 2). It is interesting to note that by 2016, Kenya's agricultural output was four times the size of Uganda's, despite starting from a similar base in 1995. Kenya's agricultural sector is an exemplary case study, and some of their initiatives are discussed here.

**Figure 2: Agricultural GDP trends in the East African Community (EAC)**




*Source: World Development Indicators (WDI) Database*

## Uganda's agricultural productivity challenge

Agricultural production in Uganda operates at less than 40% of its attainable potential for key staple crops (Kraybill, et al., 2012). Modern agricultural inputs can increase yields, but adoption rates are low[1], leaving farmers vulnerable to adverse weather conditions. Farming practices can be improved through agricultural extension, but regional agricultural offices are understaffed and underfunded. In FY 2015-16, 50% of approved extension staff positions had been filled (Mwesigye, et al., 2017). Furthermore, similar conditions in other support sectors (education, infrastructure) amplifies the problems in agriculture.

Commercialised farming can encourage backward linkages, with the private sector often providing these services. However, farming contracts are rare, and only credibly provided by large corporate companies. In addition, missing markets for credit, insurance, and savings in rural areas discourages productivity-enhancing investments, which would enable small-holder farmers to participate in commercial farming. There is sufficient potential to raise agricultural productivity and bridge Uganda's yield gap. The main priorities to achieve this should be:

1. Improving delivery of agricultural support services,
2. Facilitating farmers' access to price and weather information, and
3. Promoting market-oriented production, by improving agricultural markets

## Policy recommendations

- **Enforcing quality standards along input supply chains will build farmers' trust and encourage their adoption.** Modern inputs available on the market tend to be of low quality and are not trusted by Ugandan farmers. Bold, et al. (2017) found that fertiliser sold in retail stores contained 67% of the nitrogen it should, and only 50% of hybrid maize being sold was authentic. They estimated that investing in modern inputs at current prices could result in financial losses for some farmers, which can explain low adoption rates. Existing official quality control mechanisms, including e-verification, should be expanded to capture more brands, and monitor the entire input supply chain. Enforcement gaps can be filled by partnering with local communities, which has already proven to be effective in monitoring quality of service delivery.[2] Districts such as

1. The proportion of farmers using modern farming methods in 2015 was 25% for fertiliser, 15% for improved seed, 6.5% for both fertiliser and improved seed, and 1% for irrigation (Mwesigye, et al., 2017).
2. See The Impact of Social Accountability on the Quality of Community Projects in Uganda: Impact Evaluation Results from NUSAF2 Transparency, Accountability and Anti-Corruption Sub-Component, World Bank (2017).

Nakaseke have passed ordinances[3] against selling counterfeit seed, but require Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) support to detect and penalise violators. An ongoing IGC-funded project is studying input supply chains, and will identify priority areas for strengthening regulation.

- **Quality Declared Seed (QDS) is more trusted, but farmers need to be educated about the system.** QDS produced by local seed businesses require less monitoring. Because of this, it costs less than certified seed, but still more than traditional seed. Willingness to pay for QDS is low, but has been seen to increase once higher returns are experienced (Otim, 2015). Short-term subsidies can overcome liquidity constraints and encourage long-term adoption. This has high potential to transform agriculture productivity since 85% of seed is acquired through informal trade. However, this knowledge must be transferred to farmers by agricultural extension. Targeting networks and multiple people has been shown to be more effective for knowledge diffusion than traditional extension strategies (Beaman, et al., 2015).

- **As rainfall patterns become more erratic, agricultural policy should focus on building climate resilience.** A higher incidence of drought, caused by climate change, undermines food production. Medium and small-scale irrigation solutions (including sprinklers and fuel-powered pumps) are currently deployed in Rwanda, and enable cultivation during dry seasons. However, the high cost of irrigation infrastructure puts this out of reach for most smallholder farmers in Uganda, and requires government subsidies[4]. The sustainability of irrigation depends on the farmers' ability to pay, which can be enhanced through higher income. A study by Kondylis et al. (2017) demonstrated that combining irrigation interventions with agro-training and facilitation can increase the cultivation of high-value crops and raise farmers' incomes. Transforming agricultural productivity will depend on the ability to predict and mitigate adverse weather patterns. Technological advances in weather monitoring can be used to generate localised short-term forecasts and provide early drought warnings.[5] Improved water storage infrastructure would also help lessen the impact of rain shortfalls.

- **Smallholder farmers should be integrated into commercial farming by improving agricultural markets.** Supply- and demand-side risks, which are prevalent in rural agricultural markets, discourages productivity-enhancing investments among small-holder farmers. This results in

3. Ordinance number 11 of 4th December 2015 passed by Nakaske District Local Government.
4. The average cost of irrigation is $1,500 per hectare. This is beyond the means of most farmers. Subsidies of up to 50% of the cost are provided for individuals and cooperatives.
5. See the Trans-African Hydro Meteorological Observatory (TAHMO) available at http://tahmo.org, and the Climate Hazards Group Infrared Precipitation (CHIRPS) available at http://chg.geog.ucsb.edu/data/chirps/

shallow agro-produce markets. Markets can be deepened by facilitating frictionless exchanges between producers and buyers using transparent and enforceable contracts. Scalable interventions which can be explored include (i) government-guaranteed bulk purchases,[6] (ii) out-grower contracts, following Casaburi & Macchiavello (2016) in Kenya, (iii) insurance contracts with premiums charged at harvest, following Casaburi & Willis (2017) in Kenya, and (iv) digital trading platforms such as Kudu in Uganda or G-Soko in Kenya. Timely access to accurate market information reduces regional price dispersion, enabling farmers to respond to market incentives (Aker, 2010). In addition, Casaburi & Macchiavello (2016) illustrated that enforceable contracts offer farmers tenure security, similar to what is found in formal employment, thus stabilising agricultural supply.

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6. See IFAD and Swaziland Ministry of Agriculture Smallholder Market-led Project, available at https://operations.ifad.org

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