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POLICY NOTE¹

SECTORAL PRIORITIES FOR UGANDA'S FY18/19 BUDGET:

A POVERTY AND EQUITY PERSPECTIVE

DECEMBER 6, 2017

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Key messages

1. **Uganda needs to allocate more resources to the social sectors (education, health and social protection) and to productivity-enhancing policies in the agriculture sector.** Higher levels of investment in education, social protection, health (complemented by investments to increase access to water and sanitation services), and agriculture, are required for Uganda to attain two of its medium-term policy objectives: reducing poverty and inequality, and promoting economic growth in Uganda.
2. **While education has been a major factor in reducing poverty and inequality in the past, current levels of funding are inadequate.** Education also helps households to smooth adverse shocks, making them less vulnerable to factors outside the control of households and individuals. Additional investment is needed to address the recent decline in primary enrollment rates and increase the quality of education at this level. Also, improving the availability and affordability of secondary education, especially in rural areas, is essential to raise the stubbornly low secondary enrollment rates.
3. **Given the degree of vulnerability of households in Uganda and the recent poverty trends, social protection programs should be scaled up and expanded beyond the Northern region.** Ugandan households face a high degree of vulnerability to poverty as a result of high dependence on factors outside the control of households and individuals. While the existing social safety net programs help to reduce poverty and inequality and enhance the livelihoods of beneficiaries, the coverage is limited.
4. **Addressing the high levels of under-five mortality, child stunting and teenage pregnancy requires the GoU to improve the provision of health care services to women and children.** This in turn requires devoting more resources to the delivery of these services. Given the multi-faceted nature of these issues, complementary efforts in other sectors are also required, particularly through education programs and investments in sanitation and hygiene facilities.
5. **Programs aimed at increasing the agricultural productivity of smallholder farmers should have sufficient funding in the budget.** The GoU should promote programs that improve the quality of inputs in local markets through certification programs and should increase the availability of extension services and credit to smallholder farmers.
6. **The efficiency of public spending is another key aspect of fiscal policy that deserves the attention of the GoU.** Public investment management (PIM) is a major weakness that prevents Uganda from reaping the dividends of public investments. Improvements in this area could provide some fiscal space for the sectors mentioned in this note and would ensure the adequate returns of investment.

I. Introduction

The national budget is one of the most important tools to attain policy objectives for governments. The Government of Uganda (GoU) is currently in the process of preparing the national budget for FY 2018/19. The budget is one the most important instruments for the government to implement two of the policy objectives outlined in the National Development Plan II (NDPII -2015/16-2019/20) and Uganda's 2040 Vision by 2020: attain middle income status and lower the incidence of poverty. As mentioned in the NDPII, public investment should propel sustainable and inclusive growth, together with employment and wealth creation for all Ugandans. Thus, the budget should finance the public policies and programs that will allow Uganda to achieve these two goals.

In light of the recent slowdown in growth and poverty reduction, the objectives of enhancing economic growth and reducing poverty and inequality have a renewed relevance. While Uganda experienced a remarkable reduction in the incidence of poverty between 2006 and 2013, according to most recent wave of the Uganda National Household Survey (UNHS) 2016/17 this trend has reversed. While the poverty estimates are preliminary, they suggest that the proportion of the population living below the national poverty line rose from 19.7 percent in 2012/13 to about 27 percent in 2016/17. This is partly the result of the overall economic slowdown that the country experienced over the past five years, and in particular during the last year. GDP growth for 2016/17 was around 4 percent, a considerable decline from recent historic averages of about 7 to 8 percent.² The deceleration in real growth occurred across all three important sectors of the economy: services, manufacturing and agriculture. The drought conditions and armyworm plagues that affected crops in several areas of the country throughout 2016/17 are likely linked to both the increase in poverty incidence and the slow growth of the agriculture sector.

Enhancing the income generating capacity of households is key to reduce poverty. Using an asset-based framework, Lopez-Calva and Rodriguez (2016) outline that reducing poverty hinges on enhancing the productive capacity of households in addition to sustained economic growth. This involves improving the ability of households to generate income based on the assets they own and smoothing the negative effects of external shocks that result in income variability. The income generating capacity of households directly depends on their ability to accumulate and use both human and physical capital, and on the rates of return they obtain from these in the market. Thus, investing in education and health (the main pillars of human capital) and well-functioning and integrated markets, among other factors, is essential.

In addition to contributing to poverty reduction, spending in the social sectors, particularly education and health, boosts economic growth directly mainly through productivity gains. Investments in human capital are critical for economic growth, as shown by a large body of literature. Growth is positively related with the school attainment of the population and very strongly associated with the quality of education, measured by standardized test scores, as summarized in Barro (2013) and Hanushek and Woessmann (2007). As Becker's Human Capital theory points out, education raises the productivity of the labor force, increases long-term earnings of workers and facilitates the adoption of new technologies for the

² World Bank 10th Uganda Economic Update (2017).

production of goods and services (Becker, 2003). Similarly, healthier workers are physically and mentally more energetic and robust, increasing labor productivity, and overall better health outcomes may also lead people to save for retirement, raising the levels of investment and physical capital per worker (Weil, 2007; also see Bloom et al. 2004 for a comprehensive summary of the literature).

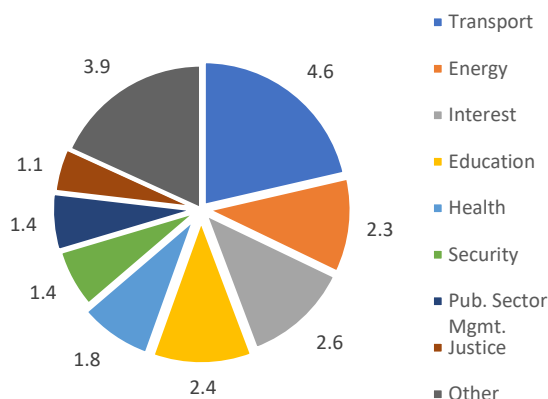
Social and redistributive fiscal spending also benefit economic growth by reducing inequality. Equity is also a key ingredient for sustained economic growth, as has been established by a growing number of studies that have debunked the trade-off between redistribution and growth. High levels of inequality are associated with shorter growth spells, preventing sustained progress in the wellbeing of individuals for both developing and developed countries (Berg and Ostry, 2011; Ostry, Berg and Tsangarides, 2014). Similarly, an increase in the concentration of income at the top of the distribution is correlated with lower economic growth while an increase in the income share of the bottom decile is associated with higher growth (DablaNorris et al. 2015). High levels of inequality also promote political and social unrest, which threatens economic growth and can eventually lead to a scenario of extreme destabilization (Reich, 2011; Wilkinson and Pickett, 2009), which of course affects economic outcomes.

Recently, fiscal policy in Uganda has not been supportive of social spending (such as education, social protection and health) and that must change. Since the 2000s and as a response to a well-documented infrastructure gap (Ranganathan and Foster, 2012), Uganda has invested heavily in the transport and energy sectors. The decision to prioritize infrastructure investment is reflected in the current fiscal allocation: the budget provision for transport and energy for the 2017/18 fiscal year (Figure 1.a) was around 7 percent of GDP. As a result, social spending in Uganda has declined as a share of GDP, from around 8.5 percent of GDP in 2005 to around 4.4 percent in 2017/18, (as seen in Figure 1.a) -of which 2.4 goes to the education sector, 1.8 to health and around 0.2 to social protection-. Compared to the rest of the EAC, social spending in Uganda is remarkably low: for 2014, the last year for which comparable data is available, it was around 7 GDP points lower.³ While it is true that the infrastructure gap was (and still is) a major constraint for the overall economic development of the country, these investments need to be inclusive and focused on priority areas. More importantly, they need to be complemented by investment in human capital, as this type of capital is also fundamental for sustained and sustainable economic growth.

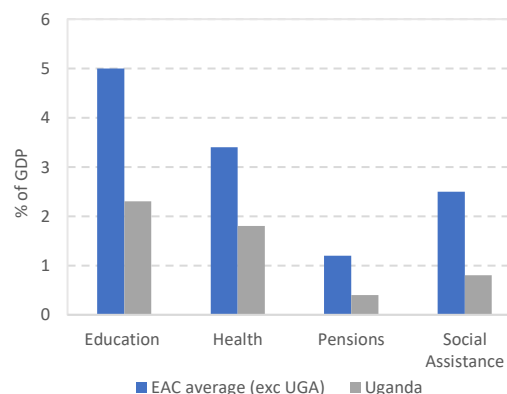
³ When looking at these numbers, it is important to keep in mind that donor spending in the social sectors also occurs outside the budget, so that budget allocations do not necessarily reflect the total spending in a sector. However, donor spending fluctuates over time and sometimes is unreliable to meet medium term policy objectives, so this should not be a factor in a government's policy agenda.

Figure 1. Public Spending in Uganda and the EAC

a. Budget sectoral composition % of GDP 2017/18



b. Social Spending as % of GDP 2014



c. Fiscal statistics 2014-2018 (est)

as % of GDP

	2014	2015	2016	2017*	2018*
Revenue					
EAC average (exc UGA)	22.8	20.2	21.0	22.0	20.2
Uganda	13.5	14.8	14.9	16.3	16.5
Expenditure					
EAC average (exc UGA)	28.3	28.2	29.7	25.3	25.0
Uganda	18.2	19.4	18.9	19.6	21.4
Deficit					
EAC average (exc UGA)	-5.5	-8.0	-8.7	-3.3	-4.8
Uganda	-4.7	-4.6	-3.9	-3.2	-4.9

*Estimated

Source: (a) MoFPED, (b) IMF (2017), (c) WEO Database 2017.

Uganda needs to allocate more resources to the social sectors (education, health and social protection) and to productivity-enhancing policies in the agriculture sector. This policy note highlights the importance of four key sectors for the reduction of poverty and inequality: education, social protection and health (which traditionally constitute the social sectors), and agriculture (given its importance in the livelihoods of Ugandan households and its close link with the evolution of the poverty trends). Complementary investments to increase the access of households to water and sanitation are also important. This prioritization is based on robust empirical evidence, and as mentioned, the argument is complemented by well-established considerations of how these sectors directly promote economic growth by enhancing productivity. In the context of growing public expenditure over the next couple of years (see Figure 1.c), the current level of spending is insufficient to address the issues the country faces in these sectors and even to maintain the progress made in recent years, as exemplified by the present deterioration of primary enrollment rates in the education sector.

The efficiency of public spending is another key aspect of fiscal policy that deserves attention, but is outside the scope of this note. This note does not delve on a key aspect of fiscal policy and budget allocation in Uganda, the efficiency of public spending. It has been widely diagnosed that public investment management (PIM) is a major weakness that prevents the country from reaping the dividends of these investments. While the government has made some strides to enhance PIM project selection and appraisal, more needs to be done to address the shortcomings in term of implementation and of monitoring and evaluation throughout the project cycle. This is an issue that is cross-cutting across all sectors, but that has been particularly noticeable in some recent infrastructure investments, given the magnitude and visibility of these investments (IMF 2017). Improvements in this area could help release some resources to increase social spending to the previously observed levels, and to ensure the adequate returns of the investments being undertaken.

II. Education sector

Education has been one of the factors that has contributed the most to income (and consumption) growth in Uganda. Education is highly correlated with income and consumption growth, and was an important contributor to poverty reduction throughout the 2006-2013 period. Households with higher levels of education have higher agricultural incomes and more productive non-farm enterprises. Over this time period, the modest increase in the share of households with secondary education aided consumption growth, particularly for households at the bottom of the consumption distribution (see Figure 2.a). The strong positive correlation of secondary education and consumption growth is particularly important, given the low current enrollment rates at this level (discussed in detail below).

Higher educational outcomes contribute to growth in wage employment income and migration and enables households to diversify in the face of shocks. Panel data analysis in Uganda shows that as households have increased the level of education of household members they are more likely to see growth in wage income and in migration, particularly to urban areas. Also, having some secondary education implies a 1.4 percent reduction in the intensity of adverse weather shock for households in the bottom 40 percent, as shown in Figure 2.b. This is mainly because more education facilitates diversification by enabling increased participation in off-farm activities, which helps to supplement income from rain-fed agricultural activities.

Under the Commitment to Equity (CEQ) framework, which assesses the redistributive impact of fiscal policy, public spending in education is also the largest contributor to the reduction of inequality in Uganda.⁴ According to the most up-to-date CEQ analysis that uses 2012/13 data, education spending has the largest impact on inequality. The Gini index drops by one point, a remarkable magnitude given how stable the Gini indicator is, and the marginal contribution is approximately double the second largest

⁴ For a more detailed description of the CEQ methodology, please refer to Introduction to Commitment to Equity Handbook. Estimating the Impact of Fiscal Policy on Inequality and Poverty (2018).

marginal contribution, coming from health spending.⁵ Within education, is it primary education spending what is driving the decline in the inequality measure (Figure 2.c).⁶

Net enrollment rates in primary education declined in 2016/17 and primary completion rates are disappointing. After the introduction of the Universal Primary Education (UPE) program in 1997, Uganda was successful at increasing primary enrollment rates for both boys and girls alike. Under the UPE program, all tuition fees and Parents and Teachers Association (PTA) charges for primary education were abolished, with the aim of promoting boys and girls alike to complete this level of education. However, it is worrying that in 2016/17, enrollment rates declined below levels observed for the past 10 years (see Table 1), which is likely to be related to the decline in financial resources assigned available to the sector. Spatial disparities also remain an issue in the sector, particularly for the Karamoja region, with a current enrollment rate substantially lower than the national rate, 35 percent versus 79 percent. Moreover, primary completion rates remain at very low levels, with only half of the 12 years old children having completed primary school (see Figure 2.c). This is actually a lesser rate than that observed in 2000 at around 55 percent, and lower than expected for a country with Uganda's gross national income (Gable et al. 2015).

Despite improvements, net enrollment in secondary school remains very low. In an attempt to increase secondary school enrollment, and inspired by the successful experience with UPE, the GoU introduced the Universal Secondary Education (USE) program in 2007. While there has been an improvement, net enrollment rates remain at very low levels as reported in the UNHS 2016/17: only 27 of the targeted population (ages 13-17). Despite the fact that tuition fees were abolished, students still have to pay boarding fees, uniforms and school materials among others costs. This explains why the estimated share of monthly expenditure on education did not change much between 2006 and 2013, and why “too expensive” and “lack of funding” are reported as the two most important reasons for leaving school among individuals aged 13 to 18 years old in the UNHS 2016/17 (see Figure 2.d) Another major constraint is the lack of availability of secondary schools in the community: around 83 percent of the communities reported not having a public secondary education facility within the community, and 46 percent of those reported that the closest public facility is more than five kilometers away (UNHS 2016/17 report), particularly in rural areas where this number reaches 54 percent.

There is a need for the GoU to assign more resources to the education sector, in order to increase secondary enrollment, contain the recent decline in primary enrollment, and enhance the completion rates at this level. Education aids household income growth (and thus, poverty reduction), and it helps households to smooth the negative effects of adverse shocks, making them less vulnerable to conditions outside their control. Also, under the fiscal incidence framework, it is the largest contributor to the reduction of inequality. The recent trend in terms of primary enrollment rates, which are likely linked to the recent decline in primary education expenditure per student (from 7.1 percent of GDP per capita in

⁵ During the period 2006-2013, the Gini indicator fell by approximately 1 point per year, from 41.5 to 38.5.

⁶ It is important to note that the CEQ framework only takes into account the direct effect of education through its effect on household expenditure, and thus it is just a lower bound for the total effect, that would include dynamic effects related to social mobility and better opportunities in the future.

2011 to 5.7 in 2013 -the latest available observation in the World Bank WDI indicators-) is worrying. More resources are required to contain this trend and increase the quality of primary education, which in turn should enhance the completion rates at this level. More analysis is required to determine what specific interventions would be the most effective to increase the quality of education, and incentivize children to complete primary. The latter is a necessary condition to address the low secondary enrollment rates, together with measures to improve the availability (in terms facilities) and affordability of secondary education, especially in rural areas. The returns to education expenditure will not only materialize in terms of less poverty and less inequality but also in terms if a more productive, diversified labor force that will drive economic growth and technological change.

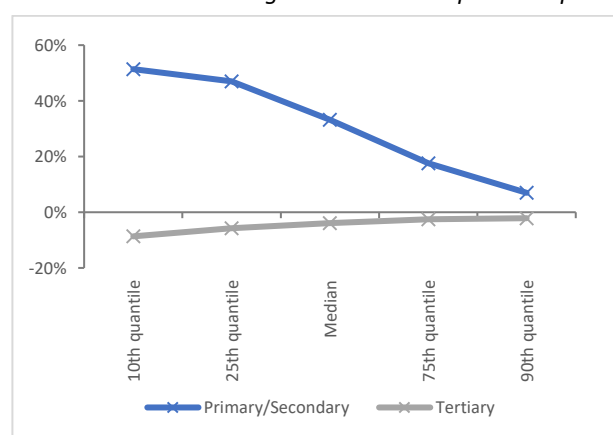
Table 1. Net enrollment rates

	Primary Education			Secondary Education		
	Boys	Girls	Total	Boys	Girls	Total
2006	84	85	84	20.8	19.7	19.8
2010	82	83	83			
2013	85	87	86			
2017	78	80	79	26	29	27

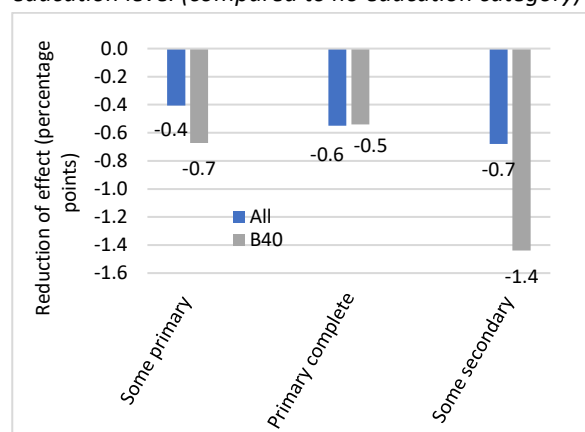
Source: World Bank Poverty Assessment Report 2016, UNHS 2016/17.

Figure 2. The role of education in enhancing wellbeing in Uganda

(a) Contribution of change in education level of household members to growth in adult eq. consumption



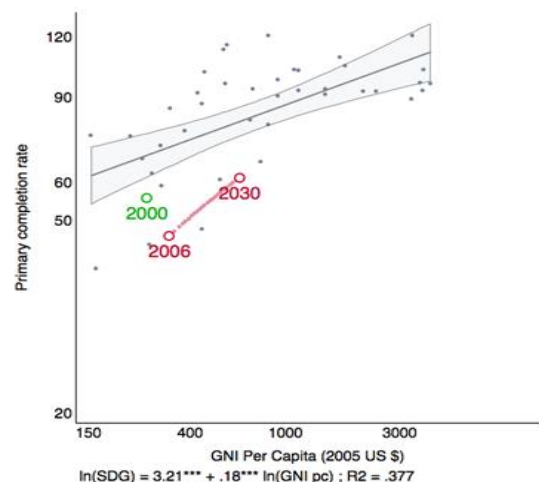
(b) Reduction of effect of shock in consumption by education level (compared to no education category)



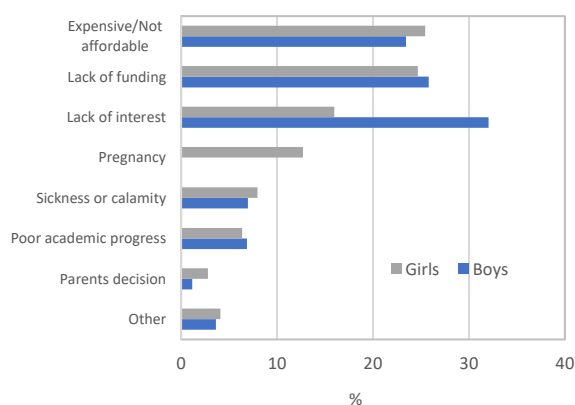
(c) Effects of in-kind services on inequality in Uganda, 2013

(d) Primary completion rates versus GNI pc

	Reduction in inequality (Gini points)
In-kind services	-0.017
Education	-0.010
Primary	-0.010
Secondary	-0.002
Tertiary	0.002
Health	-0.006
Clinic-based care	-0.005
Hospital-based care	-0.001



(e) Reasons for leaving school, individuals 13-18 years old



Source: for (a) World Bank Poverty Assessment Report 2016; (b) Hill and Mejia-Mantilla (2017); (c) Jellema et al. (2017); (d) Gable et al. (2015), and (e) UNHS 2016/17.

III. Social Protection Sector

Vulnerability to poverty in Uganda is high. Different studies have pointed out the fragility of the progress against poverty in Uganda. Longitudinal data shows that between 2005 and 2009, for every three Ugandans who were lifted out of poverty, two fell back into poverty (Ssewanyana and Kasirye, 2012). Also in 2013, nearly 43 percent of Ugandans were living above the poverty line but below twice the value of the poverty line (MoFPED, 2014). More recently, the preliminary results of the UNHS 2016/17 show a significant reversal in the downward trend of poverty incidence, linked to the drought conditions in many areas of the country during the period in which the data was collected and the destruction of crop by a fall armyworm plague (UBOS 2017).

The reliance of income and welfare on external conditions, such as weather and prices, contributes to the high levels of vulnerability to poverty observed in Uganda. A large portion of household income is

derived from rain-fed agriculture and it depends heavily on weather conditions and output prices. As shown in Figure 3, a 10 percent decline in water sufficiency results in a decrease by 4.8 percent in per capita consumption (4.1 percent when considering households in the bottom 40 percent), and a 10 percent fall in the price of maize and beans results in a consumption decline of 5.1 percent (the impact is almost double for the bottom 40 percent—a 10.5 percent decline). This dependence on weather and prices can be source of welfare improvements when favorable conditions benefit Uganda (as they did between 2006-2013). However, it also means that when the conditions are upturned, progress stalls and even reversed, as it seems to have occurred more recently.

Social protection programs contribute to the reduction of poverty and inequality in Uganda but the effect is minimal due to small scale. According to the CEQ analysis, the existing safety nets programs (considered direct transfers) contribute to reduce poverty and inequality in Uganda but only modestly, as they only cover a small proportion of the population and are thinly spread. As pointed by Jellema et al. (2017), despite the fact that they are well-targeted and have the desired effect on the beneficiaries that receive them, less than 3 percent of the population receive them. Thus, the national distribution of income and the national poverty incidence remain largely unchanged: inequality declines by 0.01 Gini points, while poverty is 0.01 percentage points lower.

Existing formal safety nets programs have the potential to mitigate vulnerability but have limited coverage. The existing social safety net programs mainly target Northern Uganda, as a response to the regional disparities that resulted from years of political instability and conflict in the area.⁷ These programs are: i) the Social Assistance Grants Transfer for Empowerment (SAGE), currently being delivered in fourteen districts (out of a total of thirty) in of Northern Uganda, and ii) the Northern Uganda Social Action Fund (NUSAF).⁸ While the evidence suggests that these programs enhance the livelihood and increase the incomes of beneficiaries (and most likely help to explain why poverty did not increase in the Northern region in 2016/2017 as it did in the rest of country) they are limited to just one region and even within that region the coverage is partial. At the national level, very few households can rely on government support to cope with adverse shocks as seen in Figure 3.c (the answers were not mutually exclusive). Most households rely on savings (35 percent) and help from family (25 percent) to mitigate the impact of shocks, while others must resort to reducing consumption (11 percent) and taking additional work (9 percent), highlighting the absence of reliable official safety net programs.

Given the degree of vulnerability of households in Uganda and the recent poverty trends, social protection programs should be scaled up and expanded to other regions of the country. Ugandan households face a high degree of vulnerability to poverty as a result of a high dependence on factors

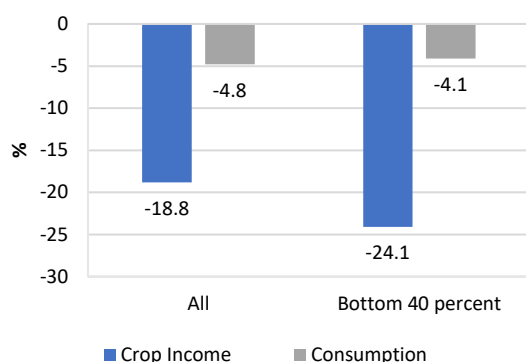
⁷ By 2012/13, poverty incidence in the Northern region was 43 percent, a little more than double the national poverty incidence.

⁸ The SAGE program encompasses the Senior Citizen Grants (SCG), targeting individuals 65 years of age and older, and the Vulnerable Family Support Grant (VFSG), that targets households with low labor capacity as a result of age and physical disabilities. Similarly, there are two programs under the NUSAF, the Households Income Support Program (HISP) and the Public Works Programme (PWP), that focus on transferring cash and assets to vulnerable individuals.

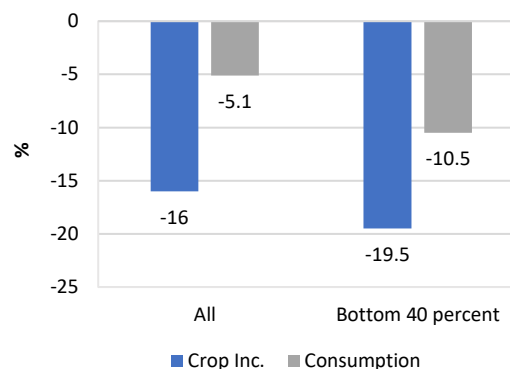
outside the control of households and individuals. While the existing social safety net programs help to reduce poverty and inequality and enhance the livelihoods of beneficiaries, their coverage is limited. The GoU should make an effort to scale up and expand these programs to other regions of the country.

Figure 3. Vulnerability to external conditions and coping mechanisms

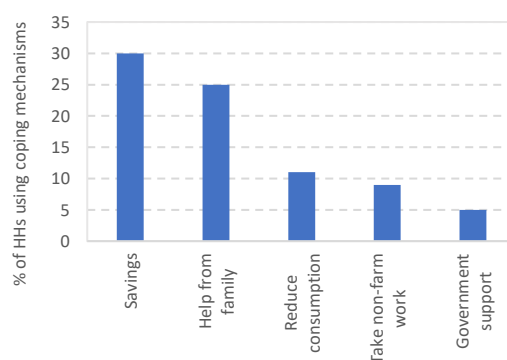
(a) Impact of 10% decrease in rainfall on crop income and consumption



(b) Impact of 10% decrease in the price of beans and maize on crop income and consumption



(c) Self-reported coping mechanism of households



Source: (a)-(b) Hill and Mejia (2017); (c) Nikolaski et al. (2015)

IV. Health sector

Spending on health services is low in comparison to regional peers, despite the fact that it helps to reduce inequality. As a result of these low levels of spending, out-of-pocket health payments are generally higher in Uganda than those in other countries in the region and in countries with similar levels of GDP per capita (World Bank Poverty Assessment Report 2016). This is regardless of the fact that expenditure in health is a major contributor (only behind expenditure in education, as discussed in Section II) to the

reduction of inequality under the CEQ framework. As shown Figure 2.c, health spending reduces the Gini inequality index in Uganda by 0.6 points, a considerable magnitude.⁹

While childhood mortality rates have been declining in Uganda for the last decade, under-five mortality remains high. Since 2006, there have been substantial declines in early childhood mortality rates, as shown in Figure 4.a. Infant mortality (which measures the probability of infants dying before their first birthday per 1,000 live birth) dropped from 71 in 2006 to 43 in 2016. Under-five mortality, which measures the probability of children dying between birth and the fifth birthday, halved from since 2006 but remains high at 64 deaths per thousand (the average for low-middle income countries is currently 51). Maternal health care trends also improved during this period. Notably, 73 percent of the births in 2016 occurred in a health facility, compared to 46 percent in 2006, and births attended by a skilled provider stood at 74 percent, an increase from 42 percent in 2006 (Figure 4.b).

Nutritional status for young children (under age 5) also shows progress but chronic malnutrition (stunning) continues to be widespread. Stunting, defined as low height for age and an indicator of chronic malnutrition, declined over the last ten years, but remains high at 29 percent for 2016. The incidence of wasting (defined as low weight-for-height and describing the current nutritional status) has remained stable at low levels in the last decade. Finally, the incidence of underweight in Uganda stands at 11 percent in 2016, decreasing by 5 percentage points since 2006 (see Figure 4.c).

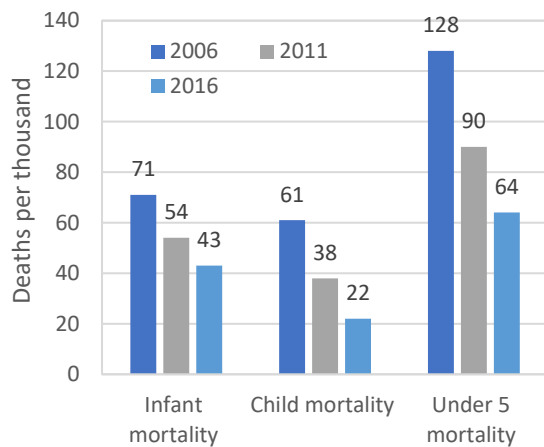
Teenage pregnancy is one of the factors that prevents Uganda from achieving gender equality. Adolescent fertility is not only associated with adverse health outcomes for the mother and child, but it prevents women from taking advantage of educational and labor market opportunities early on, with long terms effect on earnings and income over the life cycle. Currently, according to UDHS data, 1 in 4 adolescent girls in Uganda (ages 15 to 19) have begun childbearing.¹⁰

⁹ As with the education spending, this is only a lower bound for the total effect, as it does not take into account the dynamic effect of health expenditure on productivity and earnings in the long-run.

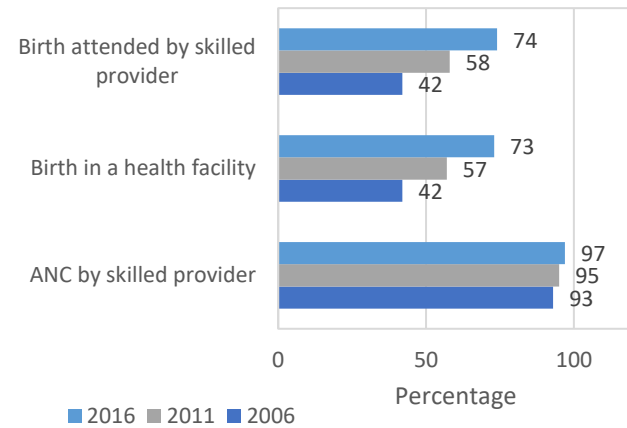
¹⁰ This implies that is they are either pregnant or already gave birth to a child.

Figure 4. Trends in child health indicators and maternal care

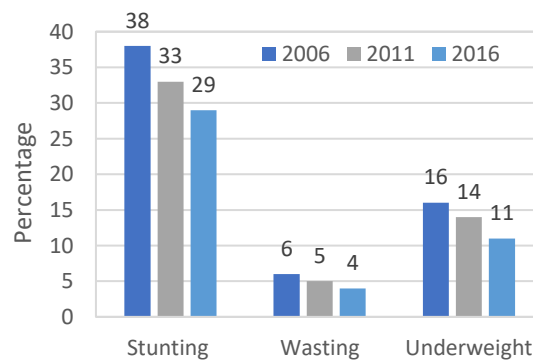
(a) Trends in early childhood mortality



(b) Trends in maternal care



(c) Nutritional status of children



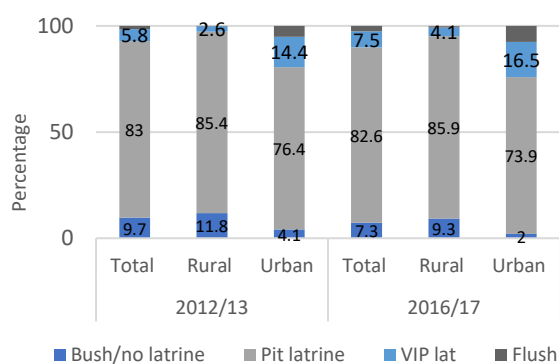
Source: UDHS 2006-2016.

Poor sanitation remains a major barrier to improvements in this area as only a small minority of households has access to adequate sanitation. Based on the 2016/17 UNHS data, the share of households with access to improved sanitation¹¹ is an astounding 10 percent, with urban areas having higher access than rural areas (25 percent versus 5 percent). The situation has barely improved since 2012/13, when access stood at 8 percent (Figure 5.a) and, as expected, households in lower consumption quintile have less access to improved toilet facilities. A similar scenario emerges when analyzing access to washing facilities: 4 out of 5 households in 2016/17 do not have access to a facility where they can wash their hands, and this has not improved much since 2012/13 (Figure 5.b). Access to adequate sanitation and hygiene services is key for health outcomes, particularly for trying to reduce the incidence of chronic malnutrition (stunting) among young children.

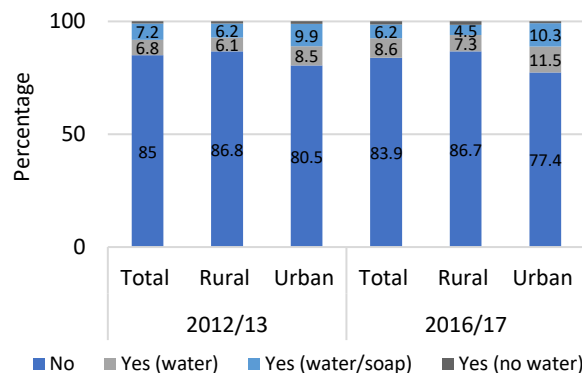
¹¹ Unimproved sanitation includes pit latrines, bush/no latrine.

Figure 5. Availability of sanitation and hygiene facilities to Ugandan households 2016/17

(a) Toilet facilities available to households



(b) Hand washing facilities available to households



Source: UNHS 2016/17.

Addressing the high levels of under-five mortality, child stunting and teenage pregnancy requires the GoU to improve the provision of health care services and to invest in water and sanitation. This in turn requires a devoting more resources to the delivery of health services targeted to women and children, and promote investment projects to enhance the access of Ugandans to sanitation and hygiene facilities, particularly in rural areas. Stable health expenditure per capita should also allow further progress in terms of child nutrition and maternal health, and in improving the general health status of the population.

V. Agricultural sector

The agricultural sector is the main sector of employment for households in Uganda, particularly so for poorer households. According to the UNHS 2016/17, around 65% of the workforce¹² in Uganda works in the agricultural sector. The poorest are even more concentrated in agriculture: approximately 85 percent of those individuals in the bottom 40 percent of the distribution are employed in the agricultural sector. Nearly 90 percent of those working the agricultural sector are either self-employed (30 percent) or non-paid employees (60 percent), while only 7 percent are in wage-employment. While there was an increase in the diversification of the sources of income up to 2006, as agricultural households engaged and started to derive some income from self-employment in the services sector, little additional diversification has been observed since (World Bank Poverty Assessment Report 2016). As expected, the sources of income of poorer households are less diversified: on average, half of household income comes from agricultural production, but for the bottom 40 percent, three quarters comes from agriculture.

¹² Includes those in self-employment and non-paid employment (working for self-consumption or for the household self-consumption).

From 2006 to 2013, poverty reduction among households in agriculture accounts for 79 percent of the total poverty reduction. The agricultural sector has been closely linked to the evolution of poverty trends in Uganda in the last 20 years. Poverty reduction between 1993 to 2006 was associated with the importance of growth in coffee incomes among Ugandan household and productivity growth in the production of agricultural goods destined for self-consumption (Appleton 2004 and Deininger and Okidi 2004). More recently, from 2006 to 2013, poverty reduction among households in agriculture accounts for 79 percent of national poverty reduction during this period (see Figure 6.a). This significant contribution to poverty reduction is consistent with the high rates of agricultural income (and in particular of crop income) growth observed from 2006 to 2013. Overall agricultural income per capita grew by 5 percent annual on average and 6 percent for the bottom 40 percent (See Figure 6.b).

According to the CEQ analysis, expenditure in extension services reduces inequality slightly. The government expenditure in agriculture, and more specifically the budget line under NAADs, is considered as an indirect subsidy under the CEQ framework. Together with the other indirect subsidies (mainly the Rural Electrification Program, and the Water Supply Program), this particular budget item helps to reduce inequality, although the effect is negligible: about 0.02 Gini points (see Figure 6.c).

Investments in extension services, credit and markets are needed to encourage crop income growth for smallholder farmers. In Uganda, the availability of extension services (and NAADs programs) is associated with a higher usage rate of agricultural inputs, mainly fertilizer, pesticide and improved seeds, and higher income crop. Moreover, as summarized in Goyal and Nash (2017), the returns to extensions services are positive, and their cost-benefit ratio is higher than for countries like Ghana and Malawi. This is despite the limited reach (and the recent decline, as will be discussed below) of extension services: in 2014 only 10 percent of households reported a visit from the extension services (UNPS 2013/14). Also, robust studies show that extension services, together with access to credit, help increase crop income by almost 50 percent (Bandiera et al. 2015), and that the effect of both is amplified the closer the farmer is to input and output markets.

The drastic decline in the availability of extension services to farmers in the UNHS 2016/17 should be addressed. In light of the importance of extension farmer for agricultural productivity, it is worrying that according to the 2016/17 UNHS survey, the availability of extension services at the community level declined drastically in the last three years. According to the community survey reports, while in 2012/13 about 21.9 percent of the communities would have extension services available to them, this figure was only 5 percent in 2016/17, a severe reduction in only four years (see Figure 6.d). This figure echoes the request of several civil society organizations have asked to re-focus the attention of agricultural public policy towards the provision of high quality and timely extension services, and away from the direct distribution of inputs (CSBAG 2016). More fiscal resources should be devoted to increase the availability of extension services to small holder farmers in Uganda.

Technology adoption (input use) played a minor role in the observed growth of agricultural income and there was little change in the nature of production of smallholder farmers. Farming continues to be largely done through small-scale, labor-intensive technologies - for example the hand hoe is the major

production tool. The use of modern agricultural inputs in Uganda is remarkably low: in 2014 only 6 percent of agricultural households used inorganic fertilizer, only 15 percent reported using pesticide and a slightly higher proportion, close to 17 percent, used hybrid (or improved seeds)¹³, as shown in Figure 6.e. Similarly, close to 10% of farmers use animal traction and only 1.2% use tractors (Olet 2017). In general, input use is very low in Uganda in comparison to other countries in the region with data collected using a similar survey instrument despite its potential to increase the yields and incomes of agricultural households (Sheehan and Barrett 2014, Binswanger and Savastano 2014).

Low quality inputs are prevalent in agricultural input markets, lowering returns and adoption. The sub-standard quality of inputs that are typically available to farmers in local markets reduces the yield gain from inputs to 75 percent of what is expected. As a result, the sizable positive return to using fertilizer and hybrid seeds disappear and even become negative in some scenarios (Hill, Mejia and Vasilaky 2017). Thus, improving the quality of inputs in local markets through certification programs is central to promote input adoption. One alternative is the use of e-verification, which uses a scratch-off code and SMS technology to confirm the authenticity of the product¹⁴, already piloted in Uganda. Support to these types of initiatives will contribute to increase the agricultural income of households, and thus, given the importance of this source of income, help reduce poverty.

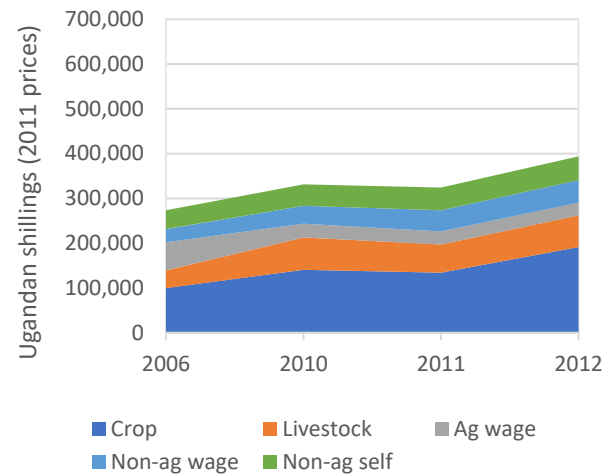
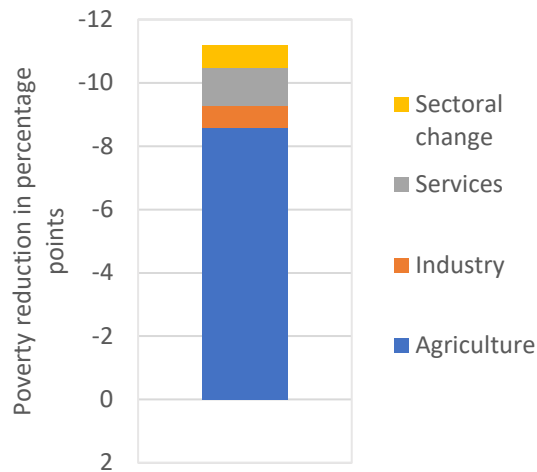
The GoU should expand investments that increase the productivity of small farmers such as agricultural inputs certification programs and the provision of timely and accessible extension services. Sustained poverty reduction in Uganda requires raising the agricultural productivity of smallholder farmers and addressing the constraints to modern input adoption is crucial for this. Thus, the GoU should actively promote programs that improve the quality of inputs in local markets through certification programs and should make complementary investments in terms of extension services and access to credit for small holder farmers.

¹³ Hill, Mejia and Vasilaky (2017), using the UNPS.

¹⁴ Ashour et al. (2015).

Figure 6. The role of agriculture in poverty reduction

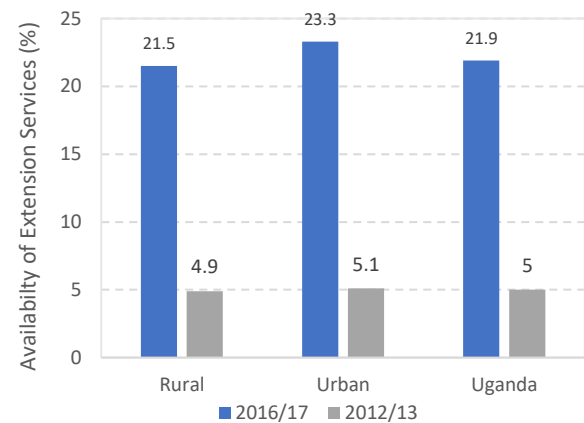
(a) Sectoral contribution to poverty reduction, 2006 to 2013, (b) Real income per capita by source of income, bottom 40 main source of income



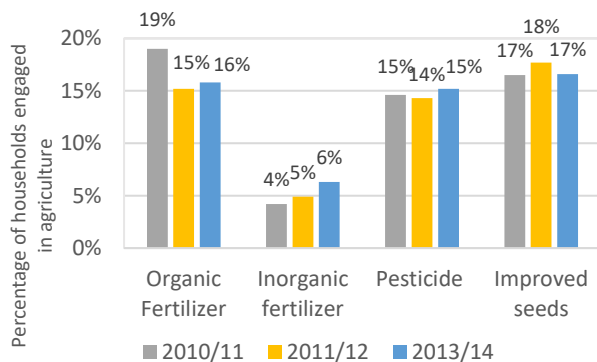
(c) Effect of Indirect Subsidies on Inequality in Uganda, 2013

	Reduction in inequality (Gini points)
Indirect Subsidies	-0.0005
Water	-0.0003
Electricity	0.0000
NAADS - Ag.	-0.0002

(d) Availability of extension services at the community level, UNHS 2016/2017



(e) Agricultural inputs use by households, 2011-2014



Source: (a) – (b) World Bank Poverty Assessment Report (2016); (c) Jellema et al. (2017); (d) UNHS 2016/17; (e) Hill, Mejia and Vasilaky (2017);.

VI. Conclusions

In order for Uganda to achieve its midterm development objectives of inclusive economic growth and reducing poverty and inequality, additional investments in education, social protection, health and agriculture are required. Reducing poverty necessarily implies enhancing the productive capacity of households through investments in human capital. Investing in improving the quality of primary education, as well as increasing the availability and affordability (non-tuition related) of secondary education (particularly in rural areas) is key to address some of the challenges in this sector. Similarly, social protection programs are important to address the high level of vulnerability to poverty that Ugandan households face, and if scaled up, have the potential to reduce poverty and inequality considerably. Moreover, there is a need to improve the provision of health services targeted to women and children, which will help to reduce the high levels of stunting among young children and lower the incidence of teenage pregnancy. This also requires complementary investments to increase the access of households to water and sanitation services. Finally, the GoU should ensure that programs that ensure the quality of agricultural inputs available to farmers (such as e-verification), and increase the farmers' access to extension services are sufficiently funded.

Expenditure in these four sectors (with complementary investments in water in sanitation) are necessary for ensuring sustained economic growth. Investments in infrastructure are crucial for increasing the competitiveness of Ugandan firms and for integrating rural areas to economic markets. These investments should benefit all groups of the population, and should be focused on priority areas. Moreover, economic growth requires just as much investment in human capital (some will say more) as in physical capital. The recent decline in social spending is not conducive for long-term economic growth, and the GoU should start addressing this issue as it prepares the budget for FY18/19.

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