# Poverty and its Dynamics in Uganda: Explorations using a New Set of Poverty Lines

Bjorn Van Campenhout, Haruna Sekabira, Dede Houeto Aduayom

1. [AUTHORS]Introduction

During the past few decades, Uganda has experienced substantial economic growth. Since 1986, when the National Resistance Movement took over government, real gross domestic product (GDP) has grown at an annual rate of 6.8 per cent, making its economy one of the fastest growing in Africa. This growth has been attributed to the new government that has implemented a far-reaching economic reforms agenda, transforming Uganda into one of the most liberal economies in Africa south of the Sahara. Indeed, as argued in World Bank (1993: 22), the government ‘liberalized the trade regime by abolishing export and import licensing; dismantled all price controls, which were few to begin with; repealed the Industrial Licensing Act, promulgated a new investment code, returned properties expropriated by the Amin regime and commenced privatizing public industrial enterprises; made important strides in abolishing export and distribution monopolies; embarked upon a major overhaul of the civil service; restructured the tax system and improved tax administration; and has made an impressive start in restructuring public expenditures towards critical economic and social services’. Such policy changes were seen as essential preconditions for sustainable economic growth.

The growth has been accompanied by equally impressive declines in the levels of poverty as reported by the government. While aggregate headcount poverty stood at about 57 per cent in the early 1990s, the most recent official estimate puts 19.5 per cent of the population below the official poverty line.[[1]](#footnote-1) But despite these successes at the aggregate level, researchers warn that this growth has not been shared equally. For instance, marked spatial heterogeneity in poverty reductions mean that differences in the standard of living between locations are often much higher now than what they used to be.

Apart from the observed heterogeneity in terms of poverty and poverty reduction, the figures themselves have been called into question as well. Some argue that the lack of progress on assets accumulation and non-monetary wellbeing proxies suggest much more modest poverty reductions, raising suspicion about the poverty lines and the welfare indicator used by the government of Uganda (Daniels and Minot 2015; Kakande 2010). Some scholars have also been questioning the spatial pattern of poverty as reported in official documents, arguing that a single national food poverty line is likely to overstate poverty in some areas while underestimating poverty in others (Appleton 2003; Jamal 1998).

In this chapter, we want to update existing knowledge about the state of poverty and its dynamics in Uganda, while at the same time address some of the problems with the official figures that have been identified in recent studies. To account for differences in diets in different locations, we will construct different poverty thresholds for different spatial domains using the latest available nationally representative household survey. We will then use these new poverty lines to look at the evolution of poverty using the recently released Uganda National Panel Survey (UNPS), a yearly panel survey collected by the Uganda Bureau of Statistics (UBOS) supported by the World Bank's Living Standard Measurement Study (LSMS) project that tracks about 3,000 households.

Finally, we will use the panel nature of this survey to study how many households are chronically poor and investigate how their characteristics differ from other groups, such as households that successfully escaped poverty. In other words, we will construct a detailed poverty profile that takes dynamic aspects into account, defining groups based on poverty transitions instead of a simple dichotomous poor/non-poor status (Boateng et al. 1992). As for the characteristics we contrast within each group, we confine ourselves to those that change only slowly over time, and we look at the ‘initial conditions’ at the start of the panel. We hope that this can enlighten us on the preconditions that need to be in place to be in a particular poverty dynamics group.

The remainder of this chapter is structured as follows: We first give an overview of poverty in the past few decades and look at the present official poverty estimates in Uganda. We also present some studies that point to shortcomings in official poverty measurement. In Section 3, we briefly explain the reasoning behind the use of spatially disaggregated poverty lines, as well as the methodology we use to construct them. The next section presents poverty estimates using the new poverty lines and using household consumption expenditure data from 2005 up to 2013. Section 5 then looks at poverty dynamics and relates households with differing poverty dynamics to a selection of characteristics. A final section concludes.

# 2 Poverty in Uganda: trends and controversies

During the 1990s, poverty in Uganda decreased substantially, falling by almost 40 per cent at the national level (Appleton 2003). However, there were significant spatial differences in both levels and changes in poverty. The urban areas and central region reduce poverty the fastest. The northern region, already starting from high levels of poverty, was relatively unsuccessful in bringing down the number of people living below the poverty line. In addition, studies that exploit the panel nature of the data find that in some regions, poverty is particularly persistent (Deininger et al. 2003). Also puzzling is a sudden drop between 1997/1998 and 1999/2000. Although it took five years for poverty to decrease by 20 per cent between 1992-97, it took only two years to decrease another 20 per cent at the turn of the century. This may be due to inconsistent underlying welfare indicator data that were obtained from different surveys.

One controversy we will also address in this chapter pertains to the fact that the official poverty estimates are based on poverty lines that are rooted in a single national food consumption bundle, derived from 1993/94 Monitoring Survey data. In particular, a single food basket was identified at the national level with 28 of the most frequently consumed food items by households with less than the median income. The items in this food basket were then converted into caloric equivalents and scaled to generate 3,000 calories per adult equivalent per day using the World Health Organization (WHO) estimates for an 18‐30-year-old male as a reference. Next, a non-food allowance was added. Non-food requirements were estimated as the average non-food expenditure of those households whose total expenditure was around the food poverty line. The non-food allowance does allow for spatial heterogeneity, as separate averages were calculated for urban and rural locations interacted with the four regions (central, eastern, northern, and western), using the method described in Ravallion and Bidani (1994). These poverty lines have since been updated by the official inflation figures each time a new household survey came out.

Appleton (2003) and Jamal (1998) argue that Uganda is unusual in its dietary diversity. Indeed, Uganda has five different staples, matooke, maize, sweet potatoes, cassava, and millet that are more or less important within the diet depending on the region. This may not matter very much if the diets are equally cost-effective in obtaining the same level of basic needs as defined in kilo-calories. However, the staple food of choice of a large part of the population, both in the western and the central regions, is matooke, a highly-localized staple.[[2]](#footnote-2) Appleton (2003) calculates that, at least in 1993-94, matooke appeared to be a very expensive source of calories, compared to what people in, for instance, the north consume. When Appleton (2003) and Jamal (1998) account for this in their analysis, they come to the conclusion that poverty is more pronounced in the western region than found in official statistics. Even after correcting for income difference, as regions that consume more expensive calories may do so simply because they have higher incomes, Appleton (2003) comes to the conclusion that the western region overtakes the northern region as the poorest.

Progress in fighting poverty reported by the government of Uganda and UBOS in the first decade of the new millennium is equally impressive. Table 1 shows that poverty at the national level kept falling during the first decade, shaving another 50 per cent off of headcount poverty. At the same time, differential progress in poverty reduction in different regions persists, too. For instance, by 2012/13, poverty is more than eight times higher in the northern region than in the central region. In 2002/2003, the north was only 2.7 times poorer than the central region. The more disaggregated the numbers, the starker the contrasts become. In the northeast, a semi-arid area with low rainfall inhabited by the Karamajong, an agro-pastoralist ethnic group, poverty remains stubbornly high, while in the central and western regions of the country, poverty is almost eradicated.

[insert table 1 about here]

The official poverty figures and its evolution over time has been questioned in recent years for being overly optimistic. Daniels and Minot (2015) use Demographic and Health Survey (DHS) data and methods related to poverty mapping and small area estimation to look at poverty trends across Uganda from 1995 to 2010. They use the 2005/06 UNHS survey to estimate regressions that correlate poverty to a range of household characteristics that also appear in the DHS (four such surveys have been carried out between 1995 and 2009/10). They then use the DHS surveys to predict poverty in each of the DHS survey years. They find that poverty indeed reduced over time, but much slower than official figures suggest. While their national estimate of headcount poverty in 2006 is 33 per cent and thus very close to the official estimate of 2005/06, the rate still stands as 30 per cent using the 2009 DHS, about 6 percentage points higher than the 2009/10 UNHS estimate.

This view is shared among many researchers and opinion makers in Uganda. Byekwaso (2010) calls officially reported poverty changes ‘a fiction’. Kakande (2010) admits that qualitative findings on poverty trends suggest there was a decrease in wellbeing despite the drop in poverty rates. Recently, an unpublished manuscript has been circulating that compares Uganda to other African countries on six non-monetary poverty indicators, such as literacy rates and access to piped water. This admittedly partial analysis also points to a much higher incidence of poverty than officially reported.

# 3 Utility-consistent poverty lines using revealed preferences

From the above, we learn that one of the main weaknesses of the official poverty measures is that they are based on a poverty line that is constructed using a single food commodity bundle for the entire country. In addition, this food basket was constructed in 1993 and has not been updated since, apart from accounting for inflation using the consumer price index. However, it is well known that in many instances - for example, if relative prices of basic commodities vary by region (or through time) and preferences permit substitution - the use of a single consumption bundle may yield inconsistent poverty comparisons (Tarp et al. 2002). While differences in prices in different locations are usually incorporated in poverty measurement by adjusting the welfare indicator to reflect prices used in the construction of the poverty lines (or by adjusting the poverty lines to reflect prices used in the construction of the welfare indicator), it is becoming more and more common to also account for spatial heterogeneity in consumption bundles in an effort to increase the specificity of poverty lines (e.g. Ravallion and Lokshin 2006; Mukherjee and Benson 2003).

While differences in consumption baskets are interesting in their own right, they become relevant only in the context of poverty measurement and analysis, as we relate a welfare indicator to the cost of these basic needs. Indeed, different diets may provide the same basic needs (usually a given amount of kilo-calories per day) at significantly different costs, which complicates poverty comparisons between units (regions, households, individuals, and so forth) with different diets. It is especially in this regard that Uganda provides an interesting case. Matooke, the main ingredient in the diet of households in the west, may be more or less expensive per energy unit than, for example, sorghum, the main staple in the north. As such, it would be misleading to compare the west with the north on the basis of a single food poverty line, even after allowing for spatial price heterogeneity.

But how can we be sure that two different consumption bundles provide the same basic needs? Or, in the language of Ravallion and Bidani (1994), how do we ensure *consistency*?*[[3]](#footnote-3)* The theory underlying absolute poverty lines is grounded in welfare economics and constrained utility maximization. In this context, the fixed standard of living represented by the poverty line is viewed as a level of utility associated with the minimally acceptable standard of living. In other words, two bundles of goods are consistent if they yield the same utility.

We follow Ravallion and Lokshin (2006), who argue that the theory of revealed preferences provides a suitable framework for answering these questions. The idea uses the rationality assumption that economic agents that derive utility from consumption always prefer consuming more to less. A representative consumer in a particular spatial domain will choose only that bundle that minimizes expenditure. Thus, any other bundle that yields the same level of utility should be equally expensive as or more expensive than the chosen bundle. No bundle can cost less than the chosen one yet yield that same utility, because then the rational consumer should have chosen that one. Or, as in Gibson and Rozelle (2003), if the cost of a bundle from another domain would be cheaper if bought in a specific domain, this means it must have lower utility than the bundle in that specific domain, as otherwise the rational consumer would have picked the bundle from the other domain. We use a minimum cross-entropy approach to adjust expenditure shares such that they meet revealed preference conditions (Arndt and Simler 2010). More information on the rationale behind utility consistent poverty lines and the estimation using minimum cross-entropy can be found in Van Campenhout et al. (2014).

# 4 A reassessment of poverty and its evolution in Uganda

For our reassessment of poverty in Uganda using spatially disaggregated poverty lines, we will calculate welfare using the four waves of the Uganda National Panel Survey (UNPS)[[4]](#footnote-4). The UNPS is a multi-topic panel household survey started by UBOS in 2009/10. However, the 2009/10 sample was essentially a subset of 3,123 households that were interviewed as part of the 2005/06 Uganda National Household Survey (UNHS 2005/06), a nationally representative survey that covered 6,775 households. As such, the first wave of the panel comprises the UNHS 2005/06 data of this subsample of 3,123 households. After the second wave of 2009/10, the survey was repeated annually. Currently data are available for a third round covering the 2010/11 agricultural year and a fourth round covering the 2011/12 agricultural year.[[5]](#footnote-5) The UNPS is conducted in two visits to better capture agricultural outcomes associated with the two cropping seasons of the country.

For the construction of the utility-consistent poverty thresholds elabourated on in the previous section, we will use the 2012/13 Uganda National Household Survey (UNHS 2012/13). Just as the UNHS 2005/06, the UNHS 2012/13 is nationally representative, covering 6,888 households. We choose this survey because it is the most recent one available, and the construction of utility-consistent poverty lines requires a sufficiently large sample, with sufficient observations in each spatial domain. After some experimentation, we ended up using six spatial domains (Kampala, Rural central, Rural East, Rural North, Rural West, and Other Urban). The results are presented in Table 2.

[insert Table 2 about here]

The poverty headcounts we obtain using six spatial domains are much higher than the official ones. While part of the divergence may be explained by various differences between approaches (eg. official estimates scale household consumption expenditure by adult equivalent units, while we use per capita expenditures; we use a much more recent dataset underlying the poverty line estimates, etc.), spatial disaggregation seems to make the largest difference. In Van Campenhout et al (2014), we compare poverty lines and poverty estimates based on the 2012/13 data, contrasting figures generated using one and six spatial domains. We find that our method using one spatial domain actually leads to a lower poverty estimate than the official one, while allowing for spatial disaggregation leads to substantially higher estimates of poverty.[[6]](#footnote-6) The reductions in poverty over time also seems more modest than the official ones, with an overall reduction in poverty between 2005/06 and 2012/13 of about one-quarter, echoing concerns raised by Daniels and Minot (2015), who argue that the original 1993 poverty lines may have increased too little to keep pace with inflation. We also see that the largest reduction the number of people living below the poverty line happened between 2011/12 and 2012/13.

If we disaggregate between rural and urban poverty, we see that most of the poverty reduction has been happening in rural areas. Over the years, poverty in rural areas has steadily fallen from almost 50 per cent to 36 per cent. This is different from what has been happening in urban areas. While between 2005/06 and 2010/11 urban poverty was on the decline, it started rising again afterwards. A marked acceleration in urban poverty between 2011/12 and 2012/13 together with a steady decline in rural poverty reduced the contribution of rural poverty to overall poverty from about 94 per cent to 88 per cent in 2012/13. The evolution of official figures is in line with our findings, except that we find a much stronger rebound of urban poverty.

Finally, we disaggregate poverty by region. We find that in the northern region, which is the poorest, poverty has decreased by 15 per cent over the entire period. However, the evolution was far from linear. Especially between 2009/10 and 2010/11, there was a strong reduction in poverty. But since then, poverty in the northern region has been rising again. Official poverty figures report a reduction of 28 per cent between 2005/06 and 2012/13 in headcount poverty. The western region is, just as in the official estimates, the second richest region. However, it is now 55 per cent poorer than the richest region. This gap between the western and central regions is significantly larger than in the official statistics, where poverty rates in the western region are 33 per cent higher than in the eastern region. Thus, while we do not observe the changes in the rankings observed by Appleton (2003), our results are consistent with the finding that the west is poorer than official figures suggest.

The central region, already the least poor region at the start of the panel, reduced headcount poverty by half between 2005/06 and 2012/13 according to our estimates using six spatial domains. Again, official estimates record higher poverty reductions (almost 70 per cent). Inequality in poverty headcount has also increased over time. While the northern region initially contributed 27 per cent to overall poverty, this has increased to 37 per cent in 2012/13. The contribution of the eastern region also has increased substantially. If we disaggregate the 2012/13 data further, we find that most poverty is found in the northeast, where over 80 per cent of the individuals live in poverty. This is followed by West Nile, a distant second with 60 per cent of the population living in poverty.

To summarize, we feel that these poverty estimates are more credible, both from a theoretical and an empirical point of view. The continued use of outdated poverty lines based on a single food basket is likely to lead to inconsistent poverty estimates, especially in a country where different regions have widely varying diets. Indeed, most of the staples in these diets are effectively non-tradables, deriving their price from local demand and supply conditions. The result is that the cost of basic needs, even though anchored in a single caloric requirement, may vary significantly.

# 5 A profile based on poverty dynamics

Now that we developed a new set of poverty lines above, in this section, we will use the Uganda National Panel to construct profiles for different categories of households based on the evolution of their poverty status over time. We will start by defining five different categories. The first category consists of households that are identified as being poor in all four waves of the UNPS. We will refer to these households as the *chronic* poor. Second, we will identify the households that were never poor in any of the waves. These households will be grouped in the *non-poor* group. Next, we delineate a group of households that are *escaping* poverty. These are households that are poor in all past waves but non-poor in all subsequent waves.[[7]](#footnote-7) A fourth group will then consist of those households that are *falling* into poverty.[[8]](#footnote-8) These are households that are non-poor in all past waves but poor in all subsequent waves. Finally, there is a category for the rest. These households, repeatedly moving in and out of poverty, are labeled as *vulnerable* in our analysis.

Looking at poverty transitions using the above typology, we find that only about 257 of the 2,195 households that appear in all four waves are poor in each wave. This amounts to only 11.7 per cent of the households being chronic poor. However, if we weigh these households by population weights, the number of chronic poor individuals increases to 12.3 per cent. This suggests that the chronic poor tend to live in larger households. At the other extreme, we find that 833 households, or 37.9 per cent of the households, are never poor, corresponding to about 35.8 per cent when using weights. Next, 387 households have escaped poverty and 198 have fallen into poverty, corresponding to 19.0 and 8.2 per cent of the population, respectively. Finally, there is a sizable class of about 520 vulnerable households, or almost a quarter of the population, that moves into or out of poverty, possibly multiple times, over the four waves.

We will now relate these four categories of households to various household characteristics to come up with a profile, similar to poverty profiles in a static analysis of poverty. Since we are interested in the likely causes of poverty transitions, we will look at characteristics of the household at the first wave of the panel in 2005/06. In other words, the profile may help us understand why households have fared differently in terms of poverty status because of a different past. As such, we will also concentrate on characteristics that change only slowly over time, as opposed to those that may change significantly from year to year, such as crops cultivated. In a way, we may be able to to identify the preconditions at the household level associated with different poverty transition trajectories.5.1 Location

Location and wellbeing are often found to be correlated. In virtually all cases, poverty is found to be higher in rural areas than in urban. More in general, remote areas tend to be poorer for a myriad of reasons. For instance, one prominent economic reason is that in sparsely populated areas with a thin road network that is often in bad shape, transaction costs are high, affecting economic activity (Stifel and Minten 2008). Dercon et al. (2012) find that chronic poverty in Ethiopia is significantly correlated to 'remoteness' in terms of distance to town or poor roads. Bird et al. (2010) note that agro-ecology; institutional, political, and governance failures; service delivery; stigma and exclusion; crime and insecurity; and communication, media, and information and communication technologies are all factors that are mediated by remoteness and as such likely to contribute to spatial poverty traps.

We first look at the location of households in the five classes in terms of being in urban or rural areas. Of all the chronic poor, 97.7 per cent live in rural areas. Of all the non-poor, this is only 71.9 per cent. For Uganda as a whole, 86.7 per cent report to be living in rural areas. Going one step further, we look at the three groups by region. This is visualized in the mosaic plot in Figure 1. The figure clearly shows that chronic poverty is concentrated in the northern region. Here, 45.5 per cent of all the chronic poor can be found. On the other end, the households that never experienced poverty are disproportionately located in the central region: More than 44 per cent of the people that are always above the poverty threshold live there. If one lives in the eastern region, one has a relatively higher chance of falling into poverty. People living in the western region seem to be moving in and out of poverty more than people living in other regions. While the northern region has a large group of chronic poor, the good news is that the relative share of people escaping poverty is larger than the share that falls into poverty. This is different in the eastern region, where the large share of individuals sliding into poverty happens simultaneously with relatively few people escaping poverty. Finally, it is worth noting that, despite the already high presence of non-poor in the central region, many poor households have escaped poverty over time and very few households have slipped back into poverty.

[insert figure 1 about here]

As mentioned, location also affects access to services, such as safe drinking water. Figure 2 provides kernel density plots for time reported to fetch drinking water including waiting time. You can see that respondents cluster their answers around 2 hours and 4 hours. We find that, in general, the non-poor need to spend less time fetching water, except maybe for some non-poor that spend about 2 hours. The median for the non-poor is about 50 minutes, as opposed to about 60 minutes for the chronic poor. The respective means are 63 minutes for the non-poor and 77 for the poor. This is also illustrated by the fact that the chronic poor have higher densities at the extreme right of the distribution, for instance around 4 hours, or 240 minutes. The vulnerable have a high density around 2 hours.

[insert figure 2 about here]

## 5.2 Household demographics

The size and composition of the household are also variables that often feature in poverty regressions. It is thought that increased competition for a given food stock reduces consumption. However, Lanjouw and Ravallion (1995) argue that the negative correlation disappears as one takes economies of scale in household food consumption into account. In terms of production, a larger household may mean more and cheaper labour is available, but Van Campenhout (2014) finds that especially mothers in larger households devote a significant amount of time to non-productive activities. This last feature may be captured better when relating the different types of household in terms of poverty dynamics to dependency ratios.

Female-headedness is also often found to be a good predictor of poverty. The underlying reasons should be sought in differences between male-headed and female-headed households in terms of access to secure land tenure, labour, credit, technology, and extension services (e.g. Quisumbing and Pandolfelli 2010). One of the consequences is that female-headed households employ fewer inputs, such as improved seeds and fertilizer, which has been shown to reduce productivity (e.g. Udry et al. 1995). We will also look at marital status as an alternative way to look at gender-based agricultural gaps. This will enable us to see if, for instance, widowhood is associated with chronic poverty (van de Walle 2013).

We find that indeed, chronic poor households are more likely to be headed by a female. In addition, households that were never poor in our panel, as well as households that are escaping poverty over time, are more likely to be headed by a male. For the other categories, we do not find big differences between male- and female-headed households. We also looked at the age of the household head. We find that average age of the household head is around 40 for households that are chronic poor or have been sliding into poverty. Households that have never been poor or that have moved out of poverty are on average about 4 years older.

Figure 3 gives an idea of the distribution household size and child dependency ratios conditional on the poverty dynamics group of the household. In the left panel (1), we plot box plots for household size for each of the five poverty dynamics classes. In the right panel (2) we do the same for child dependency ratios. For each household we calculate the share of children under the age of 15 within the total household and use this to plot box plots by poverty dynamics category. We find that higher child dependency is associated with chronic poverty, while the non-poor have the lowest median child dependency ratio. Looking at both of the charts together, the chronic poor have relatively large households and high dependency ratios. Those that are never poor have small households and low dependency ratios. Households that slide below the poverty threshold and those that are vulnerable have a surprisingly high dependency ratio given the relatively smaller households. These may be households where one of the parents has died or has left the household. Large households with a high dependency ratio also escape poverty. These may be households that start to benefit from the additional cheap labour provided by children.

[insert figure 3 about here]

For marital status of the household head, respondents could choose from five mutually exclusive types of marriage: married monogamously, married polygamously, divorced, widow or widower, and never married. The results are presented as a table of proportions where the rows sum to 1 (Table 3). This allows us to judge the fraction of the total in each type of marriage accounted for by each of our poverty transition groups. Thus, although the chronic poor account for only about 12.3 per cent of the population, they account for almost 20 per cent of individuals living in households where the head has never been married. However, at the same time, households where the head is never married are clearly more likely to be non-poor, as are households where the head has divorced. We also see that widowed households are underrepresented in the non-poor segment. In addition, households headed by widows appear to have a hard time keeping consumption smooth, as is evident by the large proportion classified as vulnerable. Divorced household heads have been more successful in moving out of poverty and are underrepresented in the group of chronic poor households. Polygamously married households have been less successful in escaping poverty. Just as widowed household heads, they seem to have a hard time keeping consumption smooth between the different years.

[insert table 3 about here]

## 5.3 Activity

Table 4 looks at what households report to be their major source of earnings at the beginning of the panel. While in general 35.8 per cent of Ugandans fall in the non-poor category, only 25.7 per cent of the Ugandan subsistence farmers are in the non-poor subgroup. It seems the group of vulnerable households is disproportionately represented within the group of subsistence farmers. Subsistence farming is indeed a very risky activity, and subsistence farmers have few assets to insure against adverse shocks such as bad weather outcomes or disease. Individuals that are living in households that report to be engaged in commercial farming appear more likely to be non-poor. Wage employment also seems to be an activity that is prevalent among the non-poor. But among the wage employed, there is also an over-representation in the group of people that have fallen into poverty.

[insert table 4 about here]

Ugandans engaged in nonagricultural enterprises are also likely to fall into the non-poor category. The clearest results are for those who mention their main source of income is property—virtually all are non-poor. People that depend on transfers are also non-poor. Transfers are likely to correlate with social capital, and hence the lower probability that households fall into the vulnerable group or in the group that falls into poverty. Finally, a significant group of people reported to be depending on handouts. As expected, these are especially the chronic poor or individuals that are vulnerable. It is, however, also interesting to note that 17.2 per cent of the individuals that report organizational support as their main source of income are never poor in the four-wave panel.

## 5.4 Education

In traditional poverty profiles, the education level of the household head is often significant. Indeed, skills are important for the self-employed, and schooled labour is likely to be better rewarded. It is less obvious how schooling affects poverty dynamics in the short run. Lack of education has been linked to intergenerational poverty (Harper et al. 2003). Education is also among the initial characteristics associated with chronic poverty in rural communities in Ethiopia (Dercon et al. 2012).

Table 5 looks at the highest education level reported by the household head. We see that 17.6 per cent of all Ugandan household heads have never attended school. However, within the group of individuals in households that have always been poor, the share of households that are headed by someone without formal education is 37 per cent. On the other hand, the share of household with heads without schooling in the subgroup of the non-poor is only 7.8 per cent. In the second row, we see that the majority of household heads have finished primary education. Primary education also seems insufficient to keep the household permanently out of poverty. Everything above primary education leads to a higher-than-average chance to be in the non-poor class.

[insert table 5 around here]

## 5.5 Health

Illness and health shocks have been reported to affect poverty dynamics. For instance, Barrett et al. (2006) note that serious human health shocks causing permanent injury or illness or death were among the most frequently cited reasons for households falling into poverty in quantitative data from Madagascar and Kenya. But the bidirectional nature of the poverty relationship between poverty and health may trap households in persistent poverty, as ill health can be a catalyst for poverty spirals and in turn poverty can create and perpetuate poor health status (Grant 2005).

Health status is likely to be a function of the distance the nearest health facility. Figure 4 reports on distance to nearest health facility. By health facility we mean either a private clinic, a government or non-governmental health unit or hospital. There seems to be some pattern in the data. Households that are never poor in any of the waves of the panel dataset reported lowest median distance to health facilities. At the other extreme, we find that households that live in chronic poverty reported highest median distance to health facilities. Distance to health facilities likely reflects location, as we have seen that the chronic poor tend to live in more remote areas.

[insert figure 4 about here]

Figure 5 looks at average days that household heads reported being inactive due to illness in the last six months in the 2005/06 UNPS wave conditional on subsequent poverty transitions. For most of the categories, the number of days lost is on average about 8.5 days. We see that people that have lost relatively few days due to illness are more likely to be in the subgroup that subsequently escapes poverty. On the other hand, the households that report the highest number of days lost by the household head due to illness are those that are in the subgroup of households that eventually fall into poverty or are living in chronic poverty.

[insert figure 5 about here]

## 5.6 Shocks and coping

The poor are known to be more vulnerable to shocks, due to their lower ability to insure (Dercon 2004). Shocks can have lasting effects if they destroy productive assets, such as when droughts reduce livestock, or health shocks that destroy human capital. If households are left with too few productive assets to replenish the gap left by shocks, they are likely to fall into an asset-based poverty trap (Carter and Barrett 2006). We also look at how the households deal with shocks ex post conditional on their wealth dynamics category.

Table 6 look at shocks reported at the onset of the panel. More in particular, respondents were asked if they experienced any of a series of shocks in the previous five years. We again report column percentages. Hence, while 35 per cent of all shocks are drought related, this increases to almost 40 per cent in the group of the chronic poor. Still, drought also features prominently in the group that subsequently escapes poverty. A substantial share of the non-poor report to have been exposed to drought shocks, but this share is only about 5 percentage points lower than the overall share that reports drought-related shocks. Floods, hailstorms, and also pest reports do not seem to differ too much between the different groups.

Bad seed quality is reported more among the non-poor than average, although care needs to be taken as relatively few farmers report bad seed quality as a shock. This may be because especially farmers that are always above the poverty line are more commercially oriented and buy seed, instead of recycling seeds. As such, they are also more prone to counterfeit seeds. But probably the most significant result in this table is the disproportionate number of people within chronically poor households that report being affected by civil strife. Poverty that is associated with civil war seems to be very persistent (Goodhand 2003). The non-poor clearly faced different shocks. They report more than average losses related to robbery and theft. This category also shows up relatively more in the category of households that slide into poverty. The death of a family member is also disproportionately mentioned among those that fall into poverty over the period covered by the panel.

[insert table 6 about here]

Finally, the dot chart in Figure 6 shows how the different categories of households reportedly dealt with shocks. The top of the chart shows that the non-poor most often used savings to cope with shocks. This is also reported as a main source of ex-post insurance for a substantial part that have slid into poverty over the course of the panel. The chronic poor deal in a completely different way with shocks. For instance, they can not rely on savings to deal with shocks. Instead, the poor seem to rely on employment and migration, but most of all simply have no choice but to reduce consumption. The graph also shows the importance of social capital to deal with shocks for vulnerable households. There is also some indication that informal borrowing during the first round of our panel is associated to an increase in the chance that households descend into poverty.

[insert figure 6 about here]

# 6. Conclusion

In this chapter, we reassess the evolution of poverty over the past ten years in Uganda. Official figures suggest substantial poverty reduction, but independent researchers note that the benefits of economic growth have been shared unequally. In addition, casual observation does not correspond to the rosy picture that official figures suggest. Other indicators that define wellbeing in a broader way, such as adult literacy and maternal health, also put Uganda at a much lower level than what would correspond to officially disseminated poverty levels.

One possible explanation for this divergence lies in the poverty line. The poverty line that is currently in use to estimate official poverty in Uganda was constructed more than a decade ago, using data from a 1993/1994 survey. In addition, this poverty line relies on a single food consumption basket for Uganda, despite the fact that Uganda consists of a diverse set of regions, each with their own diets. These diets are also exceptional in their difference in cost to obtain a certain level of kilo-calories. Lumping all regions together and assuming they require the same amounts of each commodity disregards the cultural and agro-climatic diversity that typifies Uganda. We therefore follow Arndt and Simler (2010), and construct poverty lines that better reflect local diets, which results in poverty estimates and patterns that are more realistic than the official ones. For instance, they are much more in line with the levels and evolution of other non-monetary poverty indicators. A case in point is the nutritional status of children in the west, a region highly dependent on the cost inefficient non-tradable food crop matooke. According to the Uganda Demographic Household Survey 2011, height-for-age scores are worst in the western region, except for the Karamoja district. Ssewanyana and Kasirye (2010) also find that the highest rates of stunting are in the southwestern sub-region. This at least indicates that the situation in terms of poverty is less rosy than official figures suggest.

We then use panel data to look at changes in poverty over time. While our analysis shows the situation has improved over time in the northern region, a disturbingly large proportion of the chronic poor remain. In addition, a substantial proportion of vulnerable households resides in the northern region. In the western region, relatively few households are escaping poverty and relatively more households are falling into poverty. This is in contrast to the central region, where, despite the already high presence of non-poor, many poor households have escaped poverty over time and very few households have slipped back into poverty.

We also investigate how poverty dynamics are correlated with household demographics, We find that chronic poor households are more likely to be headed by a female. Higher child dependency is also associated with chronic poverty. Households headed by widows appear to have a hard time keeping consumption smooth and households where the head is never married are more likely to be better off. Divorced household heads have been more successful in moving out of poverty.

If we look at the main source of income at the start of the panel, we find a significant group of people that reported to be depending on handouts. As expected, these are especially the chronic poor. It seems the group of vulnerable households is disproportionately represented within the group of subsistence farmers, underlining the riskiness of rain-fed agriculture. Ugandans engaged in commercial agriculture of non-agricultural enterprises are likely to be better off.

We then look at education and health. We find that households that live in chronic poverty reported highest median distance to health facilities. Another striking feature is that long periods of illness (in terms of days lost due to illness) are correlated with sliding into poverty. Finally, we find some interesting results with respect to shocks and how households subsequently deal with these shocks. While the chronic poor seem to have no other option than to reduce consumption, the non-poor draw on savings. Social networks also seem important for vulnerable households.

# References

Appleton, S. (2003). ‘Regional or National Poverty Lines? The Case of Uganda in the 1990s’. *Journal of African Economies*, 12(4): 598-624.

Arndt, C. and K.R. Simler (2010). ‘Estimating Utility-Consistent Poverty Lines with Applications to Egypt and Mozambique’. *Economic Development and Cultural Change*, 58(3): 449-74.

Barrett, C.B., P.P. Marenya, J. McpPeak, B. Minten, F. Murithi and W. Oluoch-Kosura (2006). ‘Welfare dynamics in rural Kenya and Madagascar’. *Journal of Development Studies*, 42(2): 248-77.

Bird, K., A. McKay and I. Shinyekwa (2010). ‘Isolation and Poverty: The Relationship Between Spatially Differentiated Access to Goods and Services and Poverty’. ODI Working Paper 322. London: Overseas Development Institute.

Boateng, E.O., K. Ewusi, R. Kanbur and A. McKay (1992). ‘A Poverty Profile for Ghana, 1987-1988’. *Journal of African Economies*, 1(1): 25-58.

Byekwaso, N. (2010). ‘Poverty in Uganda’. *Review of African Political Economy*, 37(126): 517-25.

Carter, M.R. and C.B. Barrett (2006). ’The economics of poverty traps and persistent poverty: An asset-based approach’. *Journal of Development Studies*, 42(2): 178-99.

Daniels, L. and N. Minot (2015). ‘Is Poverty Reduction Over-Stated in Uganda? Evidence from Alternative Poverty Measures’, *Social Indicators Research*, 212(1): 115-33.

Deininger, K. and J. Okidi (2003). ‘Growth and Poverty Reduction in Uganda, 1999--2000: Panel Data Evidence’. *Development Policy Review*, 21(4): 481-509.

Dercon, S. (ed.) (2004). *Insurance Against Poverty*. Oxford: Oxford University Press.

Dercon, S., J. Hoddinott and T. Woldehanna (2012). ‘Growth and Chronic Poverty: Evidence from Rural Communities in Ethiopia’. *Journal of Development Studies*, 48(2): 238-53.

Gibson, J. and S. Rozelle (2003). ‘Poverty and Access to Roads in Papua New Guinea’. *Economic Development and Cultural Change*, 52(1): 159-85.

Goodhand, J. (2003). ‘Enduring Disorder and Persistent Poverty: A Review of the Linkages between War and Chronic Poverty’. *World Development*, 31(3): 629-46.

Grant, U. (2005). ‘Health and Poverty Linkages: Perspectives of the chronically poor’. Background Paper for the Chronic Poverty Report 2008-09. Chronic Poverty Research Centre.

Harper, C., R. Marcus and K. Moore (2003). ‘Enduring Poverty and the Conditions of Childhood: Lifecourse and Intergenerational Poverty Transmissions’. *World Development*, 31(3): 535-54.

Jamal, V. (1998). ‘Changes in Poverty Patterns in Uganda’. In Hansen, H.B. and M. Twaddle (eds), *Developing Uganda*.Kampala: Fountain Publishers.

Kakande, M. (2010). ‘Poverty Monitoring’. In Kuteesa, F., E. Tumusiime-Mutebile, A. Withworth and T. Williamson (eds), *Uganda's Economic Reforms: Insider Accounts*. Oxford: Oxford University Press.

Lanjouw, P. and M. Ravallion (1995). ‘Poverty and Household Size’. *Economic Journal*, 105(433): 1415-34.

Lawson, D., A. Mckay and J. Okidi (2006). ‘Poverty Persistence and Transitions in Uganda: A Combined Qualitative and Quantitative Analysis’. *Journal of Development Studies*, 42(7): 1225-51.

Mukherjee, S. and T. Benson. (2003). ‘The Determinants of Poverty in Malawi, 1998’. *World Development*, 31(2): 339-58.

Quisumbing, A. R. and L. Pandolfelli (2010). ‘Promising Approaches to Address the Needs of Poor Female Farmers: Resources, Constraints, and Interventions’. *World Development*, 38(4), pp. 581-92.

Ravallion, M. (1998). ‘Poverty Lines in Theory and Practice". Washington DC: World Bank.

Ravallion, M. and B. Bidani (1994). ‘How Robust Is a Poverty Profile?’. *World Bank Economic Review*, 8(1): 75-102.

Ravallion, M. and M. Lokshin (2006). ‘Testing Poverty Lines’. *Review of Income and Wealth*, 52(3): 399-421.

Ssewanyana, S.N. and I. Kasirye (2010). ‘Food security in Uganda: a dilemma to achieving the millennium development goal’. Research Series 113614. Kampala: Economic Policy Research Centre.

Stifel, D. and B. Minten (2008). ‘Isolation and agricultural productivity’. *Agricultural Economics*, 39(1): 1-15.

Tarp, F., K.R. Simler, C. Matusse, R. Heltberg and G. Dava (2002). ‘The Robustness of Poverty Profiles Reconsidered’. *Economic Development and Cultural Change*, 51(1): 77-108.

Udry, C., J. Hoddinott, H. Alderman, and L. Haddad (1995). ‘Gender differentials in farm productivity: implications for household efficiency and agricultural policy’. *Food Policy*, 20(5): 407-23.

Van Campenhout, B. (2014). ‘Fertility, agricultural labor supply, and production: Instrumental variable evidence from Uganda’. IFPRI discussion papers 1406, Washington DC: International Food Policy Research Institute.

Van Campenhout, B., H. Ssekabira and D. H. Aduayom (2014). ‘Consumption bundle aggregation in poverty measurement: Implications for poverty and its dynamics in Uganda’. WIDER working paper WP/2014/150. Helsinki: UNU-WIDER.

World Bank (1993). ‘Uganda: Growing out of Poverty’. World Bank Country Study 12029. Washington DC: World Bank.

van de Walle, Dominique (2013). ‘Lasting Welfare Effects of Widowhood in Mali’, *World Development*, 51: 1-19.

1. For the most recent official estimate, we take the poverty estimate based on the 2012/13 Uganda National Household Survey (UNHS). The data on which these estimates are based were obtained from the Uganda Bureau of Statistics (UBOS) in August 2014. As is mostly the case with UNHS data obtained from UBOS, the dataset came with a compiled welfare aggregate based on consumption expenditure and a set of official poverty lines. Using the same methods we used to replicate official poverty figures in previous rounds of the UNHS, we estimate national headcount poverty to be 19.5 per cent in the UNHS 2012/13. This is lower than official poverty estimates at the time of the UNHS 2012/13 dissemination and reported in the press (22.1 per cent). [↑](#footnote-ref-1)
2. Matooke is a variety of starchy banana, commonly referred to as cooking bananas. [↑](#footnote-ref-2)
3. A poverty measure is consistent if two indiciduals at the same welfare level are considered equally poor. [↑](#footnote-ref-3)
4. We use consumption expenditure per capita as a proxy for welfare, as is common in poverty measurement and analysis. [↑](#footnote-ref-4)
5. No UNPS survey has been done in 2012/13. [↑](#footnote-ref-5)
6. Technically, this can be explained by the fact that poverty lines are based on the consumption patterns of the poorest households (eg. the poorest 50 percent). If poverty lines are constructed at higher aggregate levels, such as the national level, all the poor are lumped together and the poverty line is calculated on the basis of the poorest of the poor in society at large, leading to a single low poverty line. If allowed for some degree of spatial disaggregation, these poor are likely to be distributed over spatial domains, generally leading to higher poverty lines. [↑](#footnote-ref-6)
7. This group comprises household that are poor in 2005/06 and non-poor in all subsequent rounds, those that are poor in 2005/06 and 2009/10 and non-poor in 2010/11 and 2011/12, and those that are poor in 2005/06, 2009/10 and 2010/11 and non-poor in 2011/12. [↑](#footnote-ref-7)
8. This group comprises household that are non-poor in 2005/06 and poor in all subsequent rounds, those that are non-poor in 2005/06 and 2009/10 and poor in 2010/11 and 2011/12, and those that are non-poor in 2005/06, 2009/10 and 2010/11 and poor in 2011/12. [↑](#footnote-ref-8)