

Uganda has invested considerable time and effort in poverty research in recent years, much of it based on nationally representative household surveys undertaken by the Uganda Bureau of Statistics (UBOS) throughout the 1990's. These surveys have provided a wealth of information on living standards and changes in welfare levels, and have provided the basis for analysis on the driving factors behind these changes (e.g. Appleton, 2001, Deininger and Okidi, 2002, Appleton et al., 1999). One drawback of the household survey results is that they are statistically representative only at the aggregate level, i.e. for Uganda's four (large) Regions. Given that the area of these Regions is so big and heterogeneous with respect to biophysical and socio-economic endowments, these poverty estimates do not adequately show the high variability of poverty levels that exist within Regions, nor do they lend themselves to comprehensive analysis of the factors behind these highly variable poverty rates.

This report provides an extensive set of maps showing several measures of poverty at a relatively disaggregated, localized level for the first time for Uganda. These maps are referred to as poverty maps (for a summary of experiences and development of poverty maps in other countries, see Henninger and Snel, 2002). Poverty mapping, defined as the spatial representation and analysis of indicators of human well-being and poverty within a Region, is rapidly becoming an important instrument in many countries for investigating and solving social, economic and environmental problems. Such maps provide decision-makers with the tools they need to identify areas where development lags and where investment in infrastructure and services could have the greatest impact on people's lives.

Poverty maps are important tools in the implementation of poverty reduction initiatives, both at the international as well as national level. Poverty maps help improve the targeting of public expenditures by identifying where the poorest populations are located. Poverty maps provide a powerful, visually-oriented framework for integrating data from various sources, including surveys, Censuses, and satellite imagery, as well as social, economic and environmental data. This helps define and describe poverty. By integrating spatial measures of poverty with other data, spatial patterns of well-being can be compared with educational levels, access to services, market integration and other possible contributing factors, leading to a more complete understanding of different dimensions of human well-being. National and international emergency response and food aid programs have begun to make use of new poverty mapping technology. In several countries, high-resolution poverty maps contribute to state- and local-level policymakers and the decisions they make. In countries where poverty maps are available and widely distributed, transparency of public decision-making has raised public awareness of poverty and empowered local groups to participate more fully in antipoverty debates.

A spatial framework allows the use of new units of analysis. Instead of using administrative boundaries, analysts can designate ecological boundaries, and capture information such as community- or watershed-level characteristics, for example: identifying spatial patterns through the use of poverty maps can provide new insights into community versus individual household-level causes of poverty. Another example is whether physical isolation and poor agro-ecological endowments trap whole communities in poverty, or whether high initial levels of inequality or poverty in a certain locality reduce the options for growth in the

future? The dominant view in the development community is that inequality is not only a final outcome of the growth process, but plays a central role in determining the pattern of growth and poverty reduction (Bourguignon 2004). Tentative empirical verifications through "growth regressions", with inequality variables amongst the explanatory variables, have yielded ambiguous, or even contradictory results. These verifications have been attempted using cross country regressions, and are only relevant on average. By generating County-level poverty, growth and inequality estimates, poverty mapping presents the opportunity to verify the existence of a relationship between poverty, growth and inequality for specific countries such as Uganda.

Improved targeting of anti-poverty programs and interventions is an important objective behind producing these poverty estimates. Geographic targeting of subsidies, for example, is successful elsewhere as it optimises the amount of resources reaching the poor while minimizing leakage to the rich. High-resolution poverty maps also support efforts to decentralise national resources and support localised decision-making. This is in part because a map is a powerful tool that allows people to easily visualise spatial relationships and which is effective in providing an additional return on investments in survey data. This data often remains unused and unanalysed after the initial report or study is completed. It is crucial to remember that poverty maps only provide information and not answers. Thus, widespread dissemination of this information is critical, so that it can be linked with more detailed contextual information on key socio-economic, environmental and policy relevant indicators (e.g. access to public services and education) and thus used to improve poverty-related decision-making.

Whereas the focus of this report is on the spatial representation of poverty, the methodology employed also allows us to disaggregate poverty by non-spatial characteristics as well. For example, the approach taken now permits us to derive accurate poverty estimates for small target populations such as people with disabilities or child-headed households. Sample surveys are unable to provide poverty estimates for such vulnerable groups because of their small numbers.

1.1 Uganda Poverty Mapping Effort

Examples above are just some of the motivating factors behind a multi-agency effort, aimed at producing high-resolution poverty maps in Uganda. Other motivating factors include the desire to see data already collected become more useful and better used, and to invest in capacity building within UBOS to improve their data collecting instruments and analysis based upon them in the future. ILRI

initiated, with support from Rockefeller Foundation, an international workshop that included participants from UBOS and Makerere University. The workshop examined the possibilities for undertaking a poverty mapping

initiative in Uganda. These would be similar to those undertaken with support from the World Bank and the International Food Policy Research Institute (IFPRI) in many other countries (throughout Latin America and in S. Africa, Malawi, Mozambique and Madagascar). This led to the establishment of a research team within UBOS. Technical support came from The World Bank, ILRI, from the Poverty-Monitoring and Analysis Unit (PMAU) of the Ministry of Finance and from the Economic Policy Research Centre (EPRC). With the team established and financial support and encouragement from the Rockefeller Foundation secured, the poverty mapping analysis began in 2001.

The intended audience for this report is a broad one. It is aimed at Ugandan policy makers - all those involved, from national to local levels - in addressing the large economic and social development challenges facing Uganda. In particular, potentially important users of these poverty maps include all persons involved in the Poverty Reduction Strategy Process (PRSP) and Poverty Eradication Action Plan. The 1992 poverty estimates provide important baseline information that allows the tracking of progress towards the goals of reducing poverty and inequality. The information in this report will contribute to a better-informed policy debate regarding Uganda's future development possibilities. Distribution of this report will include not only government officials, but also non-government and civil organizations, as well as economic and social researchers, educational institutions and donors.

This report is intended to be the first in a series of planned reports. The intention is to present the results of the analysis to a broad audience, with further analysis using the poverty estimates (e.g. to look at the relationship between poverty and community or household characteristics) to follow in subsequent volumes. Readers interested in more detail on the econometric method and data used should refer to Appendix 1.

The report is organised as follows: Chapter 2 provides an overview of the data, concepts and methods used. Each of the different poverty measures sits alongside a specific map example with suggestions as to how to use and interpret each of the different poverty measure maps (a 'reader's guide' to the maps). Considerably more interpretation is possible with each map, but the goal of this report is to lead readers to pose new questions and conduct further research on the factors behind these differential poverty rates.

There is very little interpretation of the information presented in this report. In Chapter 3, however, we do present some observations of key findings, along with the data tables for 1992, followed by a brief summary of results by Region.

Chapter 4 presents the 1992 maps. They begin with the Uganda-wide maps, followed by those that 'zoom in' on each Region. There are two sets of rural poverty maps per Region – the first at the District-level and the second showing the County-level estimates. Subcounty-level poverty maps for the largest urban areas in each Region are also presented. Two measures of poverty are given — the headcount index (percent of the population below the poverty line) and the poverty gap (the distance poor people have to go to reach the poverty line, measured as a percent of the poverty line). A third poverty measure, a measure of consumption/expenditure inequality called the Gini coefficient, is not mapped but this information is included in the tables found in Chapter 3 and on the CD-ROM that comes with this book.

The 1999 maps, provided in Chapter 5, again start with the Uganda-wide rural poverty incidence and poverty gap maps at the District and County-level. Although the maps are accessible, the underlying data are not presented but are available upon request from UBOS.

Box 1.1. Organization of the maps in this report

This report covers the following administrative units in Uganda: Regions (4), Districts (56), and Counties (238 – 149 rural and 89 urban). The maps are found as follows in Chapters 4 and 5:

Two poverty measures exist for each area described below:

- A – Poverty Incidence: Percent of Rural Population below the Poverty Line
- B – Poverty Gap: Gap for Rural Poor to reach Poverty Line

Chapter 4:

- Uganda Poverty Density 1992 County Level
- Uganda 1992 - District Level
- Uganda 1992 - County Level
- Central Region 1992 - District Level
- Central Region 1992 - County Level
- Kampala 1992 Subcounty Level
- Masaka 1992 Subcounty Level
- Western Region 1992 - District Level
- Western Region 1992 - County Level
- Mbarara 1992 Subcounty Level
- Eastern Region 1992 - District Level
- Eastern Region 1992 - County Level
- Jinja 1992 Subcounty Level
- Northern Region 1992 - District Level
- Northern Region 1992 - County Level
- Arua 1992 Subcounty Level

Chapter 5:

- Uganda Change in Poverty 1992-1999 County Level
- Uganda 1999 - District Level
- Uganda 1999 - County Level
- Central Region 1999 - District Level
- Central Region 1999 - County Level
- Western Region 1999 - District Level
- Western Region 1999 - County Level
- Eastern Region 1999 - District Level
- Eastern Region 1999 - County Level
- Northern Region 1999 - District Level
- Northern Region 1999 - County Level