

Mapping a Healthier Future

How Spatial Analysis Can Guide Pro-Poor Water and Sanitation Planning in Uganda

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PHOTO CREDITS

- Front cover** **Girl funneling water into jerry can at standpipe in Gulu District.**
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Foreword

Mapping a Healthier Future: How Spatial Analysis Can Guide Pro-Poor Water and Sanitation Planning in Uganda results from a unique, cross-cutting collaboration by Uganda's Ministry of Health, Ministry of Water and Environment, and the Uganda Bureau of Statistics, together with the International Livestock Research Institute (ILRI), and the World Resources Institute (WRI). It builds on previous pioneering work by the Uganda Bureau of Statistics, the Wetlands Management Department of the Ministry of Water and Environment, ILRI, and WRI.

This publication offers a new tool that provides information through sample maps, at subcounty level, which overlay safe drinking water coverage and improved sanitation coverage with poverty hotspots. It illustrates how such data can be used to target efforts to extend coverage, and associated sanitation and hygiene efforts, most effectively with potential impact on our country's poorest communities.

Mapping a Healthier Future makes recommendations—for filling data gaps on sanitation and hygiene, incorporating mapping into local decision-making on interventions, and coordinating government responses to these development issues—which we will draw on as we move forward.

We are confident that the information contained in this document will assist Uganda in improving the reach of safe drinking water, adequate sanitation, and basic hygiene to vulnerable citizens. On behalf of the Government of Uganda, we wish to extend our sincere thanks to our development partners in this effort, the International Livestock Research Institute, the World Resources Institute, and all the stakeholders that contributed to the development of this report.



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Preface

Mapping a Healthier Future: How Spatial Analysis Can Guide Pro-Poor Water and Sanitation Planning in Uganda lays the groundwork for significant improvement in the availability of clean water and adequate sanitation across Uganda. Its approach, based on innovative spatial analysis, also has potential for widespread application in other developing countries.

This publication is the latest result of a fruitful and ongoing partnership between the Uganda government, the International Livestock Research Institute, and the World Resources Institute. The spatial analysis it contains will help decision-makers integrate and target efforts to increase access to clean water and sanitation, and to promote basic hygiene. The findings are aimed at technical and high-level officers working on poverty, health, and water issues at the national and local levels.

Ensuring that decision-makers in developing countries have the tools to identify locations with multiple deprivations—high poverty, low safe drinking water access, and lack of improved sanitation—is essential for the future well-being of these disadvantaged communities. New resource allocations and investments should not bypass them and they should not have to bear a disproportional burden as climate change impacts intensify and spread. We therefore hope that decision-makers will see the value of the sample maps, conduct their own mapping exercises, and apply their findings to interventions in the field. Such data and analysis can inform and facilitate actions that optimize poverty reduction efforts and maximize the use of available resources.

This report builds on previous pioneering work by the Uganda Bureau of Statistics and the Wetlands Management Department of the Ministry of Water and Environment, together with the International Livestock Research Institute and World Resources Institute, to map poverty hotspots and overlay these with wetland usage maps. The resulting data and analysis provided the tools to effectively target wetland-based economic development programs and policies across Uganda, community by community.

This latest collaboration, *Mapping a Healthier Future*, by a team of authors from the Ministry of Health, Ministry of Water and Environment, Uganda Bureau of Statistics, and the two international partners, is also one on which we intend to build.

The high quality datasets and maps were prepared by the Uganda government. The Uganda Bureau of Statistics—which is affiliated to the Ministry of Finance, Planning and Economic Development—produced the detailed and localized poverty maps and the maps depicting sanitation coverage. The Directorate of Water Development supplied the latest data and expertise on safe drinking water coverage. The Health Planning Department at the Ministry of Health provided analysis and coordinated the contributions from the Ugandan partners. Both the International Livestock Research Institute and the World Resources Institute supplied technical support to derive new maps and analyses.

This publication encapsulates an area of critical importance at the interface of people and environmental health. We hope that the analyses and policy implications it contains will inform national strategies and local poverty reduction efforts in Uganda and beyond.

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Executive Summary

Improving water supply, sanitation, and hygiene is central to Uganda's successful development. Such measures would affect all Ugandans and are important to every sector of the economy, but they are particularly relevant to the poor. The availability of safe drinking water, adequate sanitation, and basic hygiene can improve health, lower mortality rates, and increase work and educational achievements. In particular, better sanitation and hand-washing are among the most effective means to reduce morbidity and mortality from diarrheal diseases, which disproportionately affect the poor.

The central role of safe water and sanitation in addressing poverty in Uganda is reflected in national policy. The national framework for poverty eradication highlights the links between water, sanitation, and poverty reduction efforts. To implement the plans and policies related to safe drinking water coverage, Uganda's policy-makers have established ambitious targets for 2015. As a result, the government and development partners have made large investments in the water sector, and significant pro-poor benefits have been achieved. However, much work still remains to be done in order to ensure safe drinking water access and basic sanitation across Uganda.

One of the premises of the current report is that assuring future pro-poor benefits from water and sanitation investments will require more detailed poverty information. This is where maps such as those introduced in this publication can be helpful to decision-makers. Detailed information on the location of poor communities can help decision-makers target these vulnerable areas for investment, thereby improving health while keeping implementation costs reasonable.

One of the principal challenges in planning and implementing effective pro-poor interventions in water and sanitation is coordinating multiple actors across many sectors and using many different data sets. This report offers new tools to meet this challenge. Examining subcounties in Uganda that have fallen behind in reaching 2015 targets, the report illustrates how integrating various spatial and demographic data on poverty, water, and sanitation can strengthen efforts to promote health. Stand-alone water supply interventions have less impact on health outcomes than well-coordinated interventions that improve water supply, sanitation infrastructure, and hygiene behavior simultaneously.

The unique information presented in this report is critical to achieving greater results and identifying additional pro-poor interventions to reach Uganda's 2015 national targets. To this end, the authors identify the types of analyses available to Ugandan stakeholders, in order to encourage readers to develop their own poverty, water, and sanitation maps.

AUDIENCE AND AIMS

This report is intended for technical and high-level officers working both on poverty issues and in health and water departments at national and local levels.

- *For decision-makers concerned with reducing poverty*, the report demonstrates how comparing levels of poverty in a location with maps of access to safe drinking water, enhanced sanitation facilities, hygiene behavior, and other environmental health indicators can inform strategies to fight poverty.
- *For decision-makers in the water and health sector*, the publication shows how information on the location and severity of poverty can assist in setting priorities for interventions and how to integrate data sets about water supply, sanitation infrastructure, and hygiene behavior to support coordinated interventions.

KEY FINDINGS AND RECOMMENDATIONS

Findings

While the maps and analyses discussed in this report are primarily illustrative in nature, they support the following conclusions:

- *Poverty maps and maps of water and sanitation indicators can provide insight into the relationship between poverty, water, and sanitation;*
- *Maps showing water and sanitation indicators at the subcounty level can be used by planners to identify disadvantaged areas and examine equity issues;*
- *Combining map-based census data related to water, sanitation, and hygiene can guide more integrated campaigns to decrease the incidence of water-borne diseases; and*
- *The type of analysis presented in this report is most useful for identifying subcounties with similar poverty, water, and sanitation characteristics in order to guide geographic targeting.*

Recommendations

Strengthening the supply of high-quality data and analytical capacity can improve future planning and prioritization of water, sanitation, and poverty reduction efforts. Priority actions for policy-makers include:

- *Fill data gaps on sanitation and hygiene indicators; regularly update water, sanitation, and hygiene data; and continue supply of poverty data for small administrative areas; and*
- *Strengthen data integration, mapping, and analysis.*

Promoting the demand for such indicators and spatial analyses will require leadership from several government agencies. The following actions will help link relevant maps and analyses with specific decision-making opportunities:

- *Incorporate poverty information into water, sanitation, and hygiene interventions and in regular performance reporting for the water and sanitation sector;*
- *Incorporate water, sanitation, and hygiene behavior information into poverty reduction efforts;*
- *Promote more integrated planning and implementation of water, sanitation, and hygiene interventions; and*
- *Incorporate poverty maps and maps of water, sanitation, and hygiene indicators into local decision-making.*

REPORT OVERVIEW

Mapping a Healthier Future: How Spatial Analysis Can Guide Pro-Poor Water and Sanitation Planning in Uganda presents maps and analyses designed to inform the policies surrounding poverty reduction efforts in Uganda and to help reach the 2015 national targets on safe drinking water and improved sanitation.

Introduction: gives an overview of the links between water issues and poverty and sets the Ugandan policy context for pro-poor water and sanitation interventions.

Safe Drinking Water Coverage and Poverty: provides an overview of the national pattern of safe drinking water coverage; introduces a series of maps linking this subject to poverty rates to illustrate how poverty maps can inform future investments in safe drinking water infrastructure in order to make them more pro-poor.

Improved Sanitation, Hygiene, and Poverty: takes an in-depth look at policies and concerns surrounding sanitation and hygiene. Maps are included showing location-specific indicators of sanitation and hygiene coverage and poverty to help guide the discussion on resource allocation.

Conclusions and Recommendations: summarizes observations from the map analyses and proposes recommendations for decision-makers regarding poverty reduction and water supply, sanitation, and hygiene in Uganda and in other developing countries.

