



INTRODUCTION

In recent years we have witnessed a revolution in mapping the distribution of poverty. This revolution has been made possible by a number of important breakthroughs. Increasingly, major household survey efforts are being undertaken with an explicit spatial framework, making it easier to merge survey results into geographic databases. The computer technology that drives Geographic Information Systems (GIS) has become simpler to use as well as more powerful, making it easier for people to create maps and spatial databases out of information that otherwise would remain as tables of numbers. Data mining techniques have enabled researchers to discover statistical relationships linking poverty with information found in censuses and other sources. And the number of household surveys has grown considerably. Finally, econometric techniques have been developed and refined, notably by economists working at The World Bank, that permit the estimation of poverty rates at much higher spatial resolution than generally available before.

These advancements have led to a rapidly expanding array of poverty maps. Several dozen countries now benefit from precise geographic information about the distribution of poverty, measured in a variety of different ways, within their territories. Continental-scale measures are available as well—malnutrition has been mapped in Africa, for example, and unmet basic human needs have been mapped across Latin America. It has even become possible to visualize the spatial distribution of poverty worldwide by integrating large collections of subnational maps of infant mortality.

These maps, and the spatial databases underlying them, open up lines of investigation into the relationship between poverty and geography that could only be weakly approximated before, because poverty information was not organized along geographic lines. Now we can begin to better understand the interaction between poverty and such geographic factors as coastal proximity, climatic conditions, elevation, access to transportation networks, exposure to natural disasters, and other important drivers. Poverty maps are vital to the success of this critical area of scientific research.

Poverty maps are also being used in creative new ways to support practical efforts to reduce poverty. The maps permit more effective targeting of poverty reduction efforts by enabling decision makers and the public to visualize the problem they are attempting to solve. They permit more precise delivery of disaster relief services to vulnerable populations. They enable planners

to identify priority areas for intervention. They make it possible to better tailor poverty reduction activities in ways that take into account important geographic differences, for example, with respect to ecosystem services. As more countries begin to generate poverty maps at multiple points in time, it has become possible to track the progress of implementing poverty reduction goals. Because maps can communicate complex patterns in powerful, visually compelling ways, their monitoring dimension can be especially useful.

In spite of these great advances in the production and use of poverty maps, their full potential has not yet been realized. Some countries lack adequate combinations of survey and census data. Others lack the ability to utilize available data to the full extent necessary. As a result, most countries still do not have poverty maps. Moreover, many of the maps produced thus far are not readily available to researchers and planners, limiting the capacity of maps to shed new light on the science and practice of poverty reduction. With funding from the Japan Policy and Human Resource Development Fund, CIESIN (The Center for International Earth Science Information Network), a center within The Earth Institute at Columbia University, has welcomed the opportunity to collaborate with The World Bank to simplify access to poverty mapping data, to demonstrate the power of geographic analysis of poverty, and to help fill critical data gaps.

This report is one output of that collaboration. It demonstrates the breadth of poverty mapping that has taken place in recent years, shows some of the geographic patterns that have emerged, and identifies some of the ways these maps have been put to use in efforts to mitigate poverty. Our purpose: to shed a spotlight on the pioneering work that has been done in this area, and to inspire continued innovation and progress.