

# Preface

**N**ature's Benefits in Kenya: An Atlas of Ecosystems and Human Well-Being represents a step forward in the analysis of poverty in Kenya and its relation to the natural environment. It is the result of a partnership of national and international organizations, some of which were involved in preparing the first high-resolution poverty maps of Kenya. This publication springs from an effort among these partners to overlay the newly created poverty maps with environmental resource maps based on surveys and remote sensing data. The intent is to show the location and status of key environmental resources that are likely to have significant links with poverty. In creating this report, we worked with several purposes and audiences in mind.

One key purpose has been to build the information and analytical base for implementing Kenya's *Economic Recovery Strategy* and other national strategies. The maps highlight the benefits nature provides to people and the connections between poverty and ecosystem services. Our aim is to demonstrate how map-based analysis of poverty-ecosystem relationships can make a difference in policy development and implementation.

Secondly, we hope to encourage the private sector to give greater consideration to the role of environmental resources in alleviating poverty, with particular reference to the potential contribution of improved environmental management and investments in ecosystem restoration and enhancement. Likewise, we wish to assist environmental specialists in undertaking analyses that can shape anti-poverty policies.

The third purpose has been to conduct a multisectoral analysis of poverty-environment linkages. In Chapter 8, we analyze competing demands for diverse ecosystem services—including food crops, drink-

ing water, irrigation water, and wood—across an entire region (the Upper Tana River watershed). We hope that this multidimensional geospatial analysis will inspire comparable studies involving additional environmental resources and other geographic regions of the country. Such an integrated look at poverty-environment relationships, we hope, will encourage increasing collaboration between institutions both inside and outside government.

We believe that now is the right time to put together an atlas that explores poverty through an ecosystem lens. There is a growing demand for integrated data and mapping of environmental resources, poverty, and the complex web of relationships between environment and livelihoods. The Kenyan Government has committed to several national plans, strategies, and international agreements requiring action toward achieving goals for development that are economically, socially, and environmentally sustainable.

Efforts are under way to include environment in poverty-reduction programs, such as the Poverty-Environment Initiative—a joint effort of the United Nations Development Programme, the United Nations Environment Programme, the Government of Kenya, and other national stakeholders. Various agencies, including the Kenyan Ministries of Finance and Planning as well as the Poverty Analysis and Research Unit at the Central Bureau of Statistics, have expressed interest in environmental profiles of high poverty areas. Following Kenya's *State of the Environment Report 2003* and *2004*, the National Environment Management Authority is exploring ways to use its environmental reporting data and expertise to inform national poverty-reduction efforts.

Another significant development is the growing interest of the media and the public in examining resource conflicts and competing demands for ecosystem services. Conflicts between wildlife conservation and cultivation of agricultural crops, competing demands for water resources by upstream and downstream users, and the conversion of public forests to other land uses are issues of particular concern.

We anticipate that the information presented in this atlas will be of value to various national and community-level groups. Kenya's policymakers form one core audience, encompassing national and District decision-makers and the analysts working with them in government, civil society, and the private sector. Other users include policymakers and analysts in international organizations who collaborate with Kenyan decision-makers. We hope that Kenya's students and teachers will use this study to enrich curricula in geography, environmental science, economics, and other disciplines and that the lessons learned in Kenya can be usefully applied to other countries and regions.

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# A Reader's Guide

This publication is not a traditional atlas. Rather, it combines traditional map elements with text-based policy analysis. In other words, it is an atlas with elements of a book. Readers can either use it as an atlas, paging through the maps and captions that interest them, or as a book, reading chapter by chapter.

For readers with specialized interests or limited time, we offer the following guide to this publication:

- ▶ *Local decision-makers interested in a specific region such as a District, large drainage area, or a Constituency.* A Member of Parliament or a District planner may be interested in looking at a set of maps for their respective areas and can use the map and the map captions to start their review. They may find the specific analysis for Chapter 8—looking at the upper Tana region—useful in helping them develop ideas on how to conduct a similar analysis for their location.
- ▶ *National or international decision-makers or analysts.* The box that links the maps to policymaking (Chapters 3 to 7) provides a natural entry point for these users. These boxes refer to broad national strategies and plans (such as the *Economic Recovery Strategy*) or address specific issues (such as wildlife management or charcoal production).
- ▶ *Planners at local and national levels and other decision-makers dealing with cross-cutting issues.* These users may want to familiarize themselves with the framework of ecosystem services (Chapter 1), which could be adapted to land use planning. Chapter 8 may provide ideas on how to examine various poverty and ecosystem indicators simultaneously. Finally, users could draw important conclusions based on the limitations in the presented data and identify priorities for future data collection: Are all relevant regions of Kenya mapped? Do District and national planners need to invest in more up-to-date data? Does

the country need to collect information on other ecosystem services (e.g., hydrological flows or use of ecosystems for food security) because they are important for the economy and livelihoods? We intend to make the underlying data behind these maps available. They can then be used to create online tools and other decision-support products.

- ▶ *Specialists working on issues related to water, food, biodiversity, tourism, and wood.* These specialists will most likely turn first to the chapter dealing with their topic. In most cases, they will have a much more thorough understanding of the issues than provided by the introductory text. However, even these experts will find some new material. For example, the following maps are being published here for the first time: predominant drinking water sources for small administrative areas in Chapter 3; predominant livelihood systems, share of food crops, and number of crops in Chapter 4; wildlife density numbers in the 1970s and 1990s in Chapter 5; spatial distribution of selected charismatic species and coastal ecosystem assets in Chapter 6; woodlots in croplands, and importance of firewood collection and charcoal making for cash income in Chapter 7.
- ▶ *Information specialists and policymakers responsible for strengthening Kenya's data infrastructure and capacity for improved poverty-environment analysis.* The conclusions and recommendations would be the starting point for these users.
- ▶ *Journalists, speechwriters, students, and analysts in search of facts, maps, and other reference material.* Scanning the list of maps at the beginning of each chapter, the boxes with the poverty and demographic profiles, and the bullets in the 'Summing Up' section can provide a quick overview of what topics and indicators are covered. We plan to release a separate online product that will include all the maps and associated map captions in presentation format.
- ▶ *Educators.* They may use the publication to identify specific maps, concepts, or ideas that can enrich curricula or teaching materials. The underlying spatial data should be useful for GIS training and student projects.

All readers should be aware that Chapters 3–7 conclude with two text boxes of particular note:

- ▶ *Linking the maps to policymaking.* This box—highlighted in beige—illustrates how the presented maps could be used for more specific policy analysis or targeting of programs. In some chapters, the box uses broad national strategies and plans as an entry point (chapters on water, food, and tourism). Other chapters address important issues such as wildlife management, preservation of biodiversity, or the charcoal industry.
- ▶ *Creating a demographic and poverty profile for new geographic units.* This box—highlighted in green—emphasizes that the underlying spatial data behind the maps can be used to create demographic and poverty indicators for new units of analysis. For example, we calculated the number of people and the number of poor for the upper watersheds of Kenya's 'water towers,' the communities within 25 kilometers of the most visited national parks, and croplands with high shares of food crops or woodlots in five Provinces. These boxes also examine—in a first rough analysis—certain relationships between poverty and the environment.