CHAPTER 1. INTRODUCTION

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Hundreds of millions of people struggle with poverty around the world. Their plight may be obvious to the eye, but statisticians have had to labor hard to create reliable, consistent, and comparable measures of poverty. Being poor is generally viewed in terms of deprivation of some of life's basic needs, such as food, shelter, clothing, basic education, primary health care, and security. But accurately measuring these indicators is no simple task, and philosophers still debate specifics of definitions. Balancing philosophical understandings against the practical needs and constraints faced by national statistical offices has been challenging, but great progress has been made in the past several decades. This handbook is dedicated to furthering the process of improvement.

Governments around the world define and measure poverty in ways that reflect their own circumstances and aspirations. Income is universally an important element, even while most agree that money metrics are too narrow to capture all relevant aspects of poverty. Still, the challenges of measuring poverty narrowly defined by a lack of money are substantial in themselves, and statistical offices have adopted a wide array of methodological approaches. These methodological choices can matter greatly, and the ultimate users of data are usually left unaware of which choices were made and how they matter. Without that knowledge, it is impossible to make fully reliable comparisons of

poverty rates across countries, or even to confidently compare rates for a single country across different years.

To assist countries in responding to the increasing demand of poverty monitoring, the United Nations Statistics Division (UNSD) launched in 2003 a *Special Project on Poverty Statistics* with the ultimate goal being the preparation of this *Handbook on Poverty Statistics: Concepts, Methods and Policy Use*. The next section describes the process put into place to prepare the Handbook and the following one defines its scope and contents, together with suggestions on how best to use the Handbook.

1.1   A broad consultative process

Four regional workshops--in Latin America and the Caribbean (May 2004), Africa (July 2004), Asia and the Pacific (October 2004), and in the ESCWA countries (November 2004)--on poverty measurements were conducted to support the drafting of the handbook's chapters. The specific objectives of the workshops were to discuss the content of the handbook with countries to incorporate practical regional perspectives and to identify common problems countries face in this area. UNSD also implemented a global survey of poverty measurement approaches in 2005 to gauge the range of ways poverty is measured. A questionnaire based on current measurement practices was developed and sent to all countries worldwide (see Chapter 9 for a more details on the survey and the questionnaire in the Annexes at the end of the book). An expert group

consisting of authors and chapter reviewers met in New York in June 2005 to comprehensively review the first draft of the handbook.

This review of national poverty measurement practices from around the globe showed that the basic needs approach to poverty assessment has gained highest acceptance among the developing countries. Basic needs are grouped broadly into food and non-food, while the income approach to measurement involves estimating the costs of the two groups. The review however, showed a wide range of practices. For example, the data reveal that 63 percent of 91 respondent countries apply the absolute concept of poverty (41 countries responded that they use the absolute concept of poverty only and 16 other said both absolute and relative). Likewise there is a wide range of practice among the 69 countries (for who adjusting for adult equivalent was applicable) who indicated whether or not they make adjustments for adult equivalence in their poverty analyses with 23 countries (33 percent) making some kinds of adjustments for age and/or sex. Noteworthy is the difference in the minimum calorie requirement for an individual which ranges from below 2000 kilocalories to close to 3000 kilocalories in some cases. The thresholds spread almost uniformly between these two values, with a slight mode (17 countries) having a threshold between 2100 and 2300 kilocalories.

A complement of the income-based basic needs approach is the so-called minimum basic needs (MBN) or unmet basic needs (UBN) approach. In the latter, non-monetary indicators representing different dimensions of poverty are chosen, estimated, and monitored. A few numbers of countries the UNSD surveyed also collect data on

"unmet basic needs." Methods here are still being developed, and there is much less uniformity of practice than there is around the analysis of income and spending-based poverty measures. The three broad categories of basic needs often considered are dwelling characteristics, access to safe water, and access to sanitation facilities. Basic education and economic capacity (e.g., GDP growth rate) are sometimes included in an expanded UBN set of indicators. Most commonly, statisticians calculate an index of deprivation that combines the degrees of access to the various components.

Together, the data show a broad consensus about the guiding principles underlying poverty measurement in monetary terms. They also revealed, however, considerable variation in how the principles are implemented in practice. Reliable and comparable data are critical for poverty reduction policies. Much progress has already been made in improving data collection and measurement methods around the world, and this handbook seeks to add to these improvements.

1.2 Roadmap

The handbook focuses on issues confronting developing countries. It provides these countries with practical measurement options, taking regional and local specificities into consideration to the extent possible. While it does not offer new concepts or methods, the handbook's strong methodological component will serve as a foundation for empirical work conducted at the country level.

The target audience of the handbook are statisticians at government offices who possess an intermediate to strong background in statistics, with significant familiarity with common statistical modeling techniques such as regression or principal components analysis. Some chapters of the handbook require an advanced level of statistical theory whereas others are targeted to policy makers with minimal statistical literacy.

The publication is composed of nine chapters covering both theoretical and applied work. On of the fundamental addition of this Handbook to the traditional manuals on poverty statistics is its emphasis on practical issues while also addressing keys methodological issues in poverty measurements.

Chapters 2 and 3 delineate the key issues in poverty analysis based on income and consumption measures. They summarize the literature on advanced theories on poverty indices with a focus on their implications for empirical studies. Chapter 2 begins by noting the diversity of approaches to poverty measurement that are employed around the world. In seeking a basis for achieving greater uniformity, the chapter introduces issues around the setting of poverty lines and adjustments made for the age and gender composition of households. One way to achieve greater comparability of measures is to use "international poverty lines" such as the $1/day per person lines incorporated in the United Nations Millennium Development Goals. The $1/day lines have strengths and limits, but ultimately they cannot replace a country's own poverty assessments. The conclusion to chapter 2 highlights areas of concern in improving (and unifying) country-specific approaches.

Chapter 3 starts off with a basic discussion of poverty measurement for readers unfamiliar with the subject. However, readers with experience on poverty measurements or users of poverty statistics would find these sections useful for understanding some fundamentals of assessing poverty, which supports the more in depth discussions that occur in Chapters 5 and 6. The chapter describes commonly-used poverty measures such as the headcount, poverty gap, and the squared poverty gap. The first part of the chapter shows how the measures weigh different degrees of deprivation. The second part of the chapter describes a new and complementary approach to poverty measurement based on the time before exit from poverty due to steady income growth. The conclusion argues that publishing simple statistics such as the median income of the poor population can be a useful addition to traditional poverty measures.

Chapter 4 discusses current practices of measuring poverty in developing countries, summarizing the experiences of individual nations presented during the four regional workshops organized in support of the handbook. The steps involved in measuring poverty are discussed and analyzed systematically, and practical difficulties met in implementing some of the steps are pointed out. Alternative ways of solving or circumventing some of these difficulties are proposed, with particular reference to food poverty statistics. The chapter highlights the major sources of non-comparability of poverty statistics, exploring ways for harmonizing the practice of measuring poverty across countries to improve comparability of poverty statistics.

Chapters 5 and 6 study the sources of data for poverty statistics, herein referred to as survey and non-survey sources. Chapter 5 is written primarily for statisticians at national statistical offices who have the responsibility of developing standards and methods for data collection based on sampling techniques used by themselves or by other government entities such as line ministries. The chapter focuses on techniques and broad statistical considerations for generating reliable, comparable estimates of income, consumption, and other monetary and non-monetary assets. It describes methods and data for measuring poverty with cross-sectional household surveys. It starts by examining several issues that are independent of the type of survey used: cross-survey comparability, measurement error, and variance estimators for complex sample designs. It then analyzes the different types of cross-sectional surveys available, in terms of their suitability for poverty analysis. The chapter also considers the need for information on prices when measuring poverty and the difficult issues involved in assessing individual welfare and poverty from household data.

Chapter 6 is designed for a broader set of users, including non-survey statisticians and other statisticians/data analysts without a strong background in modern statistical theory. This chapter deals with certain limitations of household surveys for gathering data relating to all the dimensions of poverty and where poor people can be found. It reviews the relevance of various administrative and non-household survey sources for filling in the gaps and for amplifying existing survey data on poverty in the context of the Millennium Development Goals. The chapter also addresses the policy debate surrounding use of national account for compiling poverty levels. Conceptual and

empirical differences between estimates of household consumption based on national accounts versus household surveys are examined. Adjustments necessary to reconcile the two estimates are then presented. Statisticians who compile data in line ministries and statistical assistants in community-based registries, for example, will find practical guidance on how best to utilize their data. In general, the chapter cautions on the limits of non-survey data in poverty analysis.

In targeting data analysts and policy makers, Chapter 7 discusses poverty profiling and poverty mapping and Chapter 8 focuses on poverty dynamics. Both chapters present analytical techniques with country-level illustrations on how to use poverty statistics to formulate national policy. Familiarity with interpretation of basic statistical concepts, such as ratio, rate, and bias, is required. Some initial knowledge of policy-targeting issues is also necessary to fully benefit from these two chapters' findings. The main focus of Chapter 7 is the formulation of poverty reduction policies. It shows how various statistical tools, specifically poverty profiles and mapping, can be used to strengthen the impact of government programs and spending on poverty alleviation. The chapter thus provides some country-specific examples to illustrate how poverty profiles can be constructed and how they can be utilized to design policies. The chapter also provides a review of methodology used in the construction of poverty mapping, another important tool used by many governments to target the provision of basic services, in particular education and health.

Chapter 8 continues the discussion begun in Chapter 7 by analyzing changes in poverty over time. It examines three important conceptual issues in poverty analysis: the relationship between income inequality and poverty at a single point in time and income mobility over time, the distinction between chronic and transient poverty, and the measurement of income growth among the poor. It discusses the relative merits of panel data and repeated cross-sectional data, and the problem of measurement error in income and expenditure data. It concludes by providing practical country examples of how to analyze poverty dynamics using data from Indonesia, Papua New Guinea, Russia and Vietnam.

Chapter 9 concludes the handbook by recommending some basic steps that should be followed for improving accuracy of poverty statistics while fostering a harmonized approach for collecting and comparing data across time and space.