

Chapter 5

Strengthening Statistical Systems

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5.1 Introduction

Chapter 1, “Poverty Measurement and Analysis,” and chapter 3, “Monitoring and Evaluation,” of this book have emphasized the central role of measurement and the data needed for poverty reduction strategies. This chapter describes the role of the national statistical system in meeting the information needs of the Poverty Reduction Strategy Paper (PRSP) and, where the system is unable to meet those needs, provides guidance on the strengthening of capacity.

The preparation of the PRSP is a data-intensive process that focuses attention on the capacity of the statistical system to deliver the data. It provides an important opportunity not only to identify the demand for poverty-related data, but also to highlight areas where investment and improvements are needed. The PRSP process also emphasizes data quality and requires an assessment of the different data collection systems and processes. The PRSP demands a comprehensive approach, requiring information and analysis at the level of the macroeconomy for individual sectors, including both productive and social sectors, and at the household or individual level. Examining data sources and undertaking such a comprehensive analysis can help to identify gaps in coverage and inconsistencies in data series, highlighting instances of duplication and waste of resources devoted to data collection.

In order to take advantage of this opportunity, however, it is important to ensure that senior managers of statistical agencies are involved in the PRSP preparation process from an early stage. Statisticians’ direct involvement in the team is necessary to help analysts access and use the existing data, explain and interpret data from different sources, select appropriate indicators, and help design the monitoring system. Experience from a number of countries indicates that where statisticians are involved as full members of the PRSP team from an early stage, not only is the level of analysis enhanced, but opportunities for improving statistical systems are also more easily identified (see case study E.1).

Because of the wide range of information needed to develop a full understanding of the nature and incidence of poverty and the need to monitor progress at both the microeconomic and macroeconomic levels, very few, if any, countries will have all the data they need immediately available. In general, therefore, the PRSP process should identify the most important data deficiencies, specify the impacts these have had on the analysis of poverty, and describe how these factors have affected the selection of indicators and the design of the monitoring system. The preparation of an interim PRSP provides the opportunity to carry out an initial analysis of the statistical system and identify the main strengths and weaknesses. The full PRSP will need a more detailed assessment and a description of the steps that countries propose to take to improve the availability of information and the quality of the main indicators.

This chapter focuses on the assessment of a statistical system as a whole, taking a broad view of the range of organizations involved and the types of data needed for a PRSP. The emphasis is on national data, but in almost all cases the challenge is not only to monitor what is happening at the level of the whole country, but also to provide data at a sufficiently low level of aggregation to monitor poverty and identify appropriate interventions suited to specific environments and localities.

In making an assessment of the national statistical system and in developing a poverty-focused information strategy, the chapter makes use of the Data Quality Assessment Framework (DQAF) developed by the International Monetary Fund (IMF). This provides a formal framework for assessing the operations of a statistical system and emphasizes the importance of providing users of the data with the information they need to assess data quality and make the best use of the outputs provided. This chapter also refers to the IMF’s General Data Dissemination System (GDDS); more information on both DQAF and GDDS is provided in section 5.4 and technical note E.1.

5.2 Overview of the Statistical Process

The starting point of the analysis is to identify the data that are needed for the PRSP. In general, as identified in the other data chapters, data are needed for a number of purposes, including the following:

- general advocacy, supporting the social debate about strategies, targets, and policies and promoting participation generally;

- detailed analysis for resource allocation and program and project design;
- program monitoring and budget management;
- impact assessment of selected policies and programs; and
- promotion of greater transparency and accountability by government.

The information and data needed for all these purposes are generated by the statistical system, and figure 5.1 shows the processes that are involved. Data are obtained about a number of different social and economic agents that include households and individual people, private for-profit enterprises (both financial and nonfinancial), public sector agencies and other organizations involved in service delivery (for example, agencies providing health and education services), and other not-for-profit organizations and entities such as community groups, religious bodies, and so forth.

As indicated in the middle column of figure 5.1, the data are collected by different statistical agencies. Most countries have a national statistical agency that has primary responsibility for the collection and dissemination of statistical data, but a number of other organizations are also likely to carry out some data collection. For example, in many countries the central bank has responsibility for collecting monetary statistics and may well cover other areas such as banking and balance of payments. The Ministry of Finance is usually concerned with collecting and analyzing data on the financial operations of government, and other ministries may well collect data in their specific areas of concern, such as health, agriculture, or education.

Statistical data are disseminated and made available to users in different forms. Figure 5.1 lists examples of different kinds of statistical products and outputs. For example, economic data on the real economy is usually published in the form of national accounts, together with more detailed statistics on production and prices. Social statistics include data on health, education, population, and poverty outcomes. Other types of statistics will be important in different countries and may include data on the environment, governance, and the justice system.

In summary, therefore, the function of the national statistical system is to collect data on a number of different topics from a wide range of economic and social agents, to process and analyze these data, and to disseminate summary information in a form amenable to use by a wide range of different users. In the remainder of this chapter, we look at how the strengths and weaknesses of the system can be assessed from the point of view of the PRSP and how priorities for improvement can be identified. We look at system performance from two points of view: the adequacy of the outputs and the organization and management of the system as a whole.

5.3 Data Sources

5.3.1 Censuses and surveys

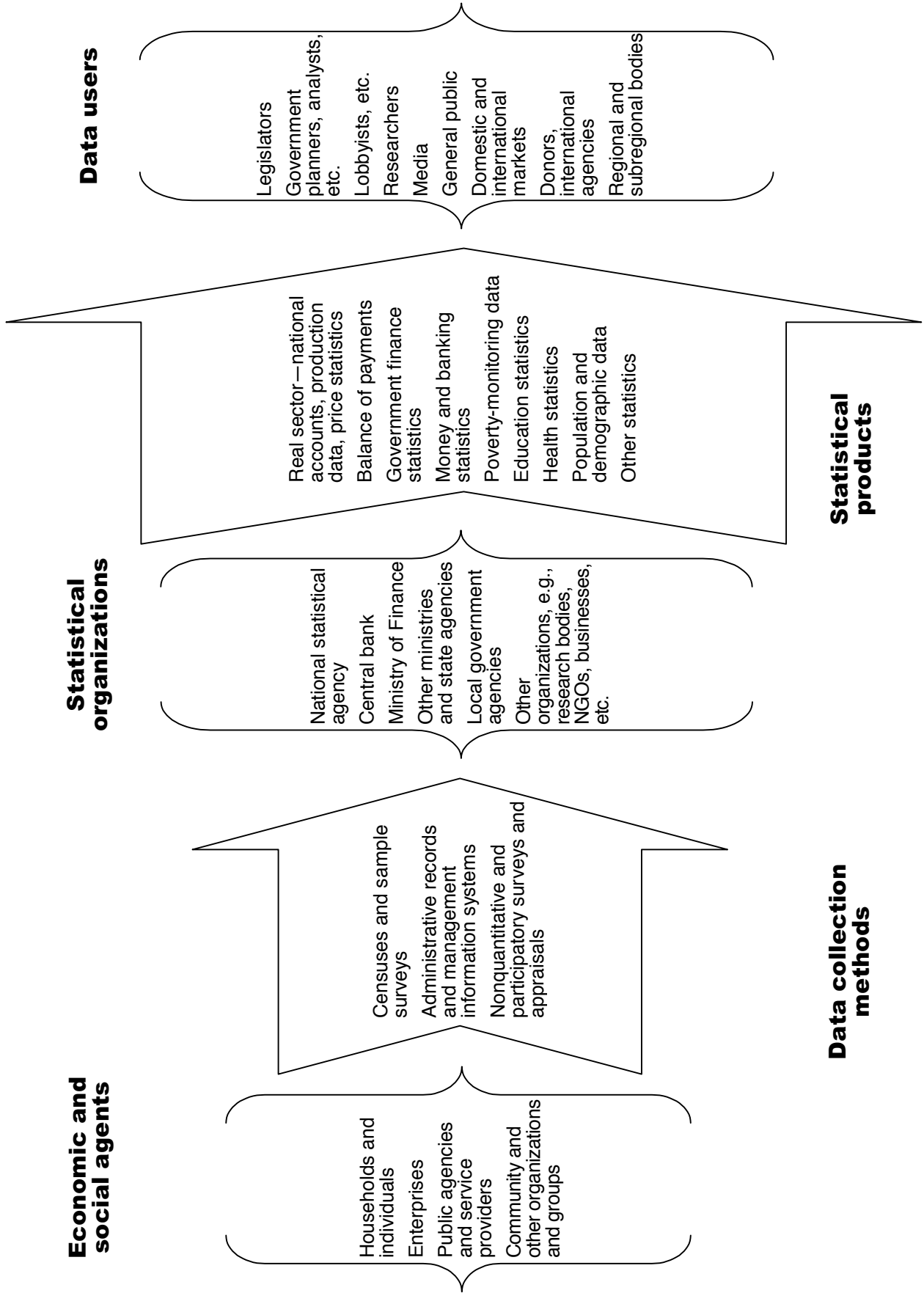
In most countries, the national statistical agency will be responsible for large-scale and regular data collection processes. These will include censuses of population, agriculture, and businesses; sample surveys (especially those that use households as the unit of enumeration); and other kinds of data collection, such as price collections. Even in fairly centralized systems, however, many other central government ministries and departments will also collect data. In some cases these agencies may carry out specialized data collections, such as a school census or a survey of small businesses.

A wide ranges of literature exists on good practice and international recommendations for the design and implementation of different kinds of censuses and surveys. Technical note E.2 provides a number of references for the most important data collection exercises relevant to PRSPs.

Censuses

Censuses are usually complete enumerations of all the units in some population, such as all the people in a country (population census), all agricultural enterprises (agricultural census), or all business establishments in specified industries (economic census or a census of business activity). They are usually very large, expensive, and complex data collection exercises carried out at fairly infrequent intervals; for example,

Figure 5.1. The Statistical Process



Source: From various resources developed by authors.

most countries carry out population censuses only once every 10 years. The main purposes of a census are to (a) provide information about the structure of the population under study; (b) provide data at low levels of aggregation (the complete enumeration allows for the publication of information at very low levels of aggregation, subject only to the need to preserve the anonymity of individual respondents); and (c) provide a frame from which future samples can be selected.

From the point of view of the PRSP, the population census is probably the single most important source of data. While it is unlikely that it will be possible to change the timetable for carrying out censuses in countries, there is clearly an advantage in preparing the PRSP when recent census data are available. Population data are important, both in their own right and in providing the denominators for a number of important poverty indicators. Data derived from projections made from a baseline that is 10 or more years old are likely to be subject to substantial errors.

Sample surveys

Household surveys are a crucial source of information for poverty analysis. Usually, they collect information using a standard questionnaire from a sample of households selected at random from the population that is of interest for the analysis. National sample surveys use random processes to select households that are representative of the population as a whole, but other surveys may focus on specific interest groups, such as rural households, slum dwellers, members of a specific indigenous group, and so on. The use of random selection of the sample is important for two important reasons. First, it guards against bias in selection and provides an automatic mechanism for ensuring that the sample really is representative of the population as a whole. Second, random selection provides access to powerful statistical tools that not only provide unbiased and consistent population estimates, but also allow for estimation of the level of sampling error.

Sampling error is, in effect, the price that is paid for relying on data from only a sample to estimate characteristics for a population. Population estimates generated from different samples will vary. Using random sampling, statistical theory allows the distribution of the sample estimates to be derived, and this in turn provides an estimate of the likely range within which the true, but unknown, population parameter lies.

The design of household surveys usually involves a tradeoff among cost, speed, sample size, and the complexity of the information to be collected. In general, two kinds of approach are possible:

- **Large-scale, fairly rapid monitoring surveys** that attempt to monitor indicators of welfare in a population but that usually cover a limited set of data and may not provide the data needed to support causal analysis. Technical note E.3 provides details of the World Bank's Core Welfare Indicators Questionnaire (CWIQ), which provides a mechanism for carrying out rapid monitoring surveys.
- **More complex household surveys**, usually covering a much wider range of questions designed to understand household decisionmaking, but covering a smaller sample. The Living Standards Measurement Survey (LSMS), an example of such an approach, is described in more detail in technical note E.4.

5.3.2 Administrative data and management information systems

A substantial amount of information is also collected during the course of regular administrative processes. Figure 5.1 refers to these as management information systems (MIS). Typically, data are collected on a routine basis—for example, where people using a public service are required to make some payment, or perhaps apply for a license. The information is needed to manage the system, to account for revenue and expenditure, and to ensure that the legislative requirements are being met. At the same time, however, it can be used to generate statistical information. All countries make use of this kind of information. For the purposes of the PRSP, some important management information systems will include the following:

- school records, which will provide information on the educational system, including indicators such as enrollment, academic outcomes, and progress through the educational system;
- health records, providing information on access to and use of health facilities, morbidity and mortality data for important diseases, the use of preventive health services, and important outcomes such as the nutritional status of children;
- budget and expenditure records, providing information on the allocation and use of financial resources;
- social security records, providing information, for example, on changes in employment;
- fiscal and monetary data collected through the banking system to monitor macroeconomic conditions and stability; and
- taxation and customs receipts to monitor changes in government revenue and to provide information on external trade, business operations, and other economic data.

Of course, administrative data and management information systems are not only maintained by the central government. The records of local government also will be important sources of data, especially where there has been decentralization of service delivery and management. Records will be kept by nongovernmental agencies and civil society organizations as well, where, for instance, they are involved in the implementation of government or donor-funded programs and projects. Such systems, for example, could provide information on the extent and coverage of safety net programs or access to and use of financial services.

Data derived from MIS have important advantages and disadvantages for use in the PRSP. The overwhelming advantage is almost always one of cost, together with timeliness and frequency. Since the administrative systems are already in place, the costs are generally restricted to the compilation and analysis of the data. The main disadvantage is usually the coverage of the data. Information derived from the records maintained by a service delivery system, such as clinics or schools, will cover only those people and households that make use of the service. It cannot always be assumed, for example, that the population attending health clinics is the same as the population at large. Key groups may not have access because of problems such as distance or cost in addition to social and cultural reasons. It is important, therefore, occasionally to validate the information derived from MIS with data obtained from censuses and surveys.

Technical note E.5 provides information on the advantages and problems associated with the use of these types of data. It also provides examples of how the use of modern computer technology can improve the quality of the information and help to link together datasets from different sources.

5.3.3 Qualitative data and participatory assessments

The third type of data collection method shown in figure 5.1 covers a wide range of other information sources that have been grouped together under the general heading of qualitative data and participatory assessments. While these kinds of data are rarely considered to be part of a formal statistical system, the information they provide is nevertheless of the utmost importance for the development of a comprehensive poverty reduction strategy. Technical note E.6 describes some kinds of participatory assessment and offers advice on how quantitative data and qualitative information can be linked together in a poverty assessment.

5.4 Assessing Strengths and Weaknesses: Data Outputs

5.4.1 Data needs for the PRSP

Understanding indicators

The design and implementation of the PRSP generate many demands for different kinds of data. Data are needed to generate debate, allocate resources, design interventions, monitor progress, and report on outcomes. A key part of the process is to set goals with specific targets to be reached within an agreed-on timeframe. In order to measure progress, we need a number of different indicators, and because one

indicator can rarely reflect the extent to which a given goal has been realized, several indicators, both intermediate and final, are usually used for each goal.

Indicators can be broadly classified into two groups: *intermediate* and *outcomes/impact*. When an indicator measures an outcome or the effect of an intervention on individuals' well-being, we call it an "impact" or "outcome" indicator. For example, literacy may be considered a final goal, so an indicator measuring, say, the proportion of people of a certain age who can read a simple text and write their name would be an outcome indicator. Technical note E.7 lists the International Development Goals (IDGs) and the indicators selected for the goals; these may provide a starting point to consider outcome and impact indicators at the country level.

When an indicator measures a factor that determines an outcome or contributes to the process of achieving an outcome, we call it an "input" or "output" indicator, depending on the stage of the process—in short, an "intermediate" indicator. For example, many inputs may be needed to raise literacy levels: more schools, better-qualified teachers, training materials, and so on. A measure of public expenditures on classrooms and teachers' salaries would be an input indicator, while measures of classrooms built and teachers trained would be output indicators. What is important is that inputs and outputs are not goals in themselves; rather, they help to achieve the chosen goals. Table 5.1 gives examples of intermediate and final indicators for a set of possible goals (expanding economic opportunity, enhancing the capabilities of poor people, and reducing vulnerability).

Exogenous factors that are likely to affect final indicators but that do not themselves represent either final indicators or intermediate indicators as discussed above—such as rainfall and commodity prices—should also be measured. Both final indicators (outcome and impact) and intermediate indicators (input and output) are important. Monitoring final indicators helps to judge progress toward the targets set. However, these indicators generally change slowly over time and are the result of many factors, some outside the control of policymakers and program administrators. Monitoring intermediate indicators, on the other hand, gives a more timely picture of what is happening. These indicators generally change as a result of factors that governments and other agents control, and they are easier to collect information on. Monitoring inputs and outputs can help identify which of the several factors influencing an outcome are not on track and indicate what corrective action could be taken. Finally, it should be noted that many factors that affect quality of life cannot be easily quantified but are not for this reason less important. So, where feasible, qualitative and subjective indicators should be added—for example, whether or not people perceive themselves as being poor, the level of satisfaction with service delivery, or the quality of the services they use.

The characteristics of a "good" indicator

A good impact or outcome indicator (a "final" indicator) is one that

- provides a direct and unambiguous measure of progress—more (or less) is unmistakably better;
- is relevant—it measures goals or factors that have an impact on the goals;
- varies over time across areas and groups and is sensitive to changes in policies, programs, and institutions;
- is not easily blown off course by unrelated developments and cannot be easily manipulated to show achievement where none exists; and
- can be tracked (better if already available), is available frequently, and is not too costly to track.

For example, an indicator such as vehicle operating costs is influenced not only by factors reflecting policies and programs, such as the roughness of roads, but also by unrelated factors such as the international price of gasoline. Thus it is not a good indicator of progress achieved in the roads sector.

A good intermediate indicator is one that refers to key determinants of an impact or outcome and that varies across areas or groups or over time. For instance, if all schools had more or less the same teacher-student ratio, that ratio would not be a particularly useful intermediate indicator to monitor differences in quality of education across regions, although it could still be useful to monitor changes over time.

Table 5.1. Examples of Intermediate and Outcome Indicators

<i>Goal</i>	<i>Intermediate indicator (input and output)</i>	<i>Outcome/Impact indicator</i>
Reduce extreme poverty and expand economic opportunities for the poor	<ul style="list-style-type: none"> • Expenditure on employment programs for the poor • Number of beneficiaries of employment programs for the poor 	<ul style="list-style-type: none"> • Incidence of extreme poverty: percentage of population whose consumption falls below the poverty line • Poverty gap ratio • Income expenditure of the poorest 20% of the population as a share of the total income expenditure of the whole population
Enhance the capabilities of poor men and women.	<ul style="list-style-type: none"> • Expenditure on primary education as a share of total expenditure in education • Expenditure on primary health care as a share of total expenditure on health • Number of new schools built • Number of primary school teachers trained • Percentage of population below the poverty line with access to health care facilities • Number of doctors per 100,000 inhabitants 	<ul style="list-style-type: none"> • Literacy rates • Learning achievement • Gross/net enrollment rates in primary/secondary education • Dropout and repetition rates • Infant, child, and under-five mortality rate • Maternal mortality rate • Malnutrition rate
Reduce the vulnerability of the poor	<ul style="list-style-type: none"> • Expenditure on safety net programs • Number of households/individuals receiving transfers from the government • Number of households receiving food aid as a percentage of drought-affected households 	<ul style="list-style-type: none"> • Number of households made food secure • Percentage of vulnerable group (for example, AIDS orphans) protected • Additional income provided through safety net programs

Source: From various resources developed by authors.

5.4.2 Assessing data quality

Assessing how well the statistical system generates the data needed for PRSP indicators requires an inventory of data outputs, setting out what indicators are produced. However, simply having information on whether or not a particular indicator is available is not sufficient. To complete the assessment we need to know how the indicator was collected, what it covers, how accurate or reliable it is, how often it is published, the time period to which it refers, and the level of aggregation. The whole range of factors that determine how well a particular indicator is suited to some use is referred to as data quality. There are many different possible definitions of data quality, but overall “the quality of the statistics refers to all aspects of how well these statistics meet users’ needs and expectations” (Kotz and others 1988).

In the past, quality in statistics might have been seen to be synonymous with accuracy, but today a consensus is emerging that quality is a much wider, multidimensional concept. However, no internationally agreed-on definition of data quality exists. To further a common understanding of data quality, the IMF has set up a data quality reference site on the Internet. It has also become clear that one practical need has been for more structure and a common language for assessing data quality. Such an assessment tool could serve to complement other frameworks (for example, the IMF’s Special Data Dissemination Standard and GDDS) to guide statistical agencies in assessing whether national data are adequate for different purposes, and to provide a basis for assessing and reporting on the observance of standards and codes. With these needs in mind, therefore, the IMF, in collaboration with other agencies, has been developing a DQAF.

The DQAF that is emerging reflects the growing literature on the subject, practical experience in dealing with the statistical systems of both industrial and developing countries, and feedback from several rounds of consultations. It comprises a generic assessment framework and specific assessment frameworks for the key sets of statistics, focusing initially on the main macroeconomic aggregates. The generic framework, which brings together the internationally accepted core principles/standards or

practices for official statistics, serves as the umbrella under which the dataset-specific quality assessment frameworks are developed. The framework follows a cascading structure that flows from five main dimensions that have been identified as critical constituents of data quality (see box 5.1). For each of these interrelated, and somewhat overlapping, dimensions, the framework identifies pointers, or observable features, that can be used in assessing quality. These pointers to quality are broken down into elements (principal identifiers of the quality dimension) and, further, into more detailed and concrete indicators. Below the indicator level, especially in the dimensions dealing with methodological soundness and with accuracy and reliability, the specific frameworks tailor these pointers to the individual datasets.

Because quality assessment depends on users' requirements, the weight given to any one of these dimensions will depend on the use to which the data will be put. It is not possible, therefore, to provide an absolute measure of quality for any indicator; rather, it is necessary to provide users with the information needed for them to make an assessment of quality, depending on their intended use. Table 5.2 provides some examples of the different aspects of data quality that may be required for PRSPs. The aspects of quality listed in the rows of the table are discussed in more detail below.

Data coverage

Data coverage, that is, what information is generated by the statistical system, refers to the published indicators as well as information on the scope of the data system and the reference time period. For a particular indicator it is important to know not only what information has been collected, but what group or population it covers and for what time period. For example, school enrollment may be defined as the percentage of children in a specified age group that are attending school. In order to use the indicator, it is also important to know which schools are covered (for example, are all schools included or just those operated by the government?), what grades are included, what point in time the data refer to, what ages are included, and whether the information has been collected from all the relevant schools or just from a sample.

Box 5.1. The Dimensions of Data Quality

The five dimensions identified in DQAF are as follows:

Integrity

This dimension is intended to capture the notion that statistical systems should be based on firm adherence to the principle of objectivity in the collection, compilation, and dissemination of statistics. The dimension encompasses the institutional foundations in place to ensure professionalism in statistical policies and practices, transparency, and ethical standards.

Methodological soundness

This dimension of quality covers the idea that the methodological basis for the production of statistics should be sound and that this can be attained by following international standards, guidelines, and agreed-on practices. In application, this dimension will necessarily be dataset-specific, reflecting differing methodologies for different datasets (for example, the 1993 System of National Accounts for national accounts and the fifth edition of the IMF's *Balance of Payments Manual* for balance of payments).

Accuracy and reliability

For most users, accuracy and reliability are among the most sought-after attributes of data. We are all concerned that the data we use portray reality sufficiently at all stages of dissemination—from “flash” to “final” estimates. This dimension therefore relates to the notion that source data and compilation techniques must be sound if data are to meet users' needs.

Serviceability

Another area of concern for users is whether the data that are produced and disseminated are actually useful. This dimension of quality relates to the need to ensure that data are produced and disseminated in a timely fashion, with an appropriate periodicity; provide relevant information on the subject field; are consistent internally and with other related data sets; and follow a predictable revisions policy.

Accessibility

Users want understandable, clearly presented data and need to know how data are put together, and users must be able to count on prompt and knowledgeable support from data producers for their questions. This quality dimension thus relates to the need to ensure that clear data and metadata are easily available, and that users of data receive adequate assistance.

Source: Carol S. Carson. 2000. “Toward a Framework for Assessing Data Quality.” IMF, Washington, D.C.

The IMF’s GDDS provides a framework for assessing data coverage and identifying priority areas for improvements. This is discussed in more detail below. For the indicators that are needed for the PRSP, it is recommended that information about the source, coverage, reference period, and method of data collection be put together in a systematic way. This kind of information is referred to as metadata, that is, information about indicators that helps the user to interpret specific values and that also indicates possible limitations on use.

Methodological soundness

Methodological soundness ensures that the methodological basis for the data—related to the concepts and definitions used, the methods of data collection, and the ways in which the data are summarized and reported—is sound and reflects good practice. A particular requirement is consistency among different data collection processes so that real changes can be identified over time (time series analysis) and among different domains of study or strata at the same point in time (cross-sectional analysis).

In order to promote consistency, countries are encouraged to adopt and use international recommendations for the classification of variables and for frameworks for analysis. At the international level, several frameworks and classifications for specific types of data important for PRSPs have been developed and are in use in many countries. At the same time, countries also have access to internationally agreed-on recommendations on good practice for statistical activities and for the compilation of indicators. Technical note E.8 gives a list of those recommendations that are likely to be the most important for poverty analysis.

In the area of economic statistics, a number of frameworks exist to provide a basis for the collection and classification of data on different types of transactions.¹ There are no equivalent comprehensive frameworks for the social and demographic data, but guidelines do exist for compilation, standard classification systems, and examples of best practices that are frequently cited and widely used by statisticians to organize the collection and presentation of social and demographic statistics.

Accuracy and reliability

An indicator is a statistic that has been derived from a set of data in order to measure a specific phenomenon. As such, it is subject to errors that can arise from a number of different sources, including those described below.

Table 5.2. PRSPs, Data Uses, and Required Characteristics

<i>Uses of data quality</i>	<i>Advocacy, social debate, participation</i>	<i>Analysis, resource allocation, design</i>	<i>Program monitoring, budget management</i>	<i>Impact assessment</i>	<i>Transparency and accountability</i>
Integrity	Must be seen to be free from political manipulation	Need for detailed information on methods	Need for detailed information on methods	Need for detailed information on methods	Must be seen to be free from political manipulation
Methodological soundness	Broad concepts, simple constructs	Program-specific, complex constructs	Program-related, agreed-on performance measures	Program and policy related, compare changes over space and time	Broad concepts, simple constructs
Accuracy and reliability	Limited	High	High	High	Limited
Serviceability	Need to identify most significant trends, timeliness a lower priority	Trend data needed, timeliness very important	Need for data at regular intervals, timeliness very important	Data needed infrequently, timeliness a lower priority	Data to identify most significant trends, timeliness a lower priority
Accessibility	Outputs made accessible to poor and other groups	Need for access to detailed datasets	Need for access to detailed datasets	Need for access to detailed datasets	Widespread dissemination accessible to general public

Source: From various resources developed by authors.

- Measurement error, in which the variable of interest cannot be measured with absolute accuracy. For example, we may measure household well-being by asking the members of the household to list all expenditures over a specified period of time. However, the responding data will almost certainly include some errors because people make mistakes in recording and forget or deliberately conceal some kinds of expenditures.
- Estimation or calculation error, in which the statistical techniques or estimation procedures introduce some systematic error into the indicator.
- Selection error, in which the way respondents are selected introduces some bias into the results. For example, a household survey that is carried out during normal working hours may not include respondents who are at work and, hence, the results may not be representative of the whole population.
- Sampling error that results from indicators that are obtained from a sample of respondents rather than the whole population.

Systematic errors may introduce some bias into the reported indicators, or they may be random, thereby increasing the variation of the indicator around the reported mean. In most economic and social statistics, some kind of error is likely, and indicators need to be interpreted with this in mind. The main requirement is for the providers of the information to take as much care as possible to keep errors at a minimum and to provide users with the information needed to assess the likely size and impact errors. In general, increases in the accuracy or precision of indicators can be achieved, but at some cost, both in terms of time and resources. Assessing the tradeoffs among accuracy, timeliness, and cost for different indicators is an important component of the design of a poverty-monitoring system.

Serviceability

This aspect of data quality is concerned with the relevance of a specific indicator or dataset to the needs of the users as well as other aspects, such as the scope, timeliness, and frequency of indicators. Requirements will vary with both use and type of indicator. For example, variables that do not change rapidly over time, such as measures of population change and mortality rates, may need to be monitored only at fairly infrequent intervals—annually or perhaps only once every five years. Other variables that change rapidly, such as consumer and other prices, will need to be monitored much more regularly.

Data accessibility

Reliable, timely, comprehensive statistics are crucial to informed public decisionmaking and help to provide discipline in public debate. They may also have economic value to individuals and companies, who use them to make plans and evaluate market positions. In the PRSP process, statistics are needed to identify the causes and locations of poverty, to set goals, and to monitor progress toward those goals. For these purposes and others, it is important that the outputs of the statistical system be readily accessible to the public.

For the PRSP, the public should have ready access to official statistics, which should be timely. A regular publication program, in print or through electronic media, is the most common means of disseminating statistics. Whatever approach is chosen (and it is desirable to release data in as many formats as possible), data should become available to all interested parties simultaneously. It is useful for countries to describe how data are released and the steps taken to ensure equal access by all potential users.

One way dissemination can be improved is through the use of advance-release calendars. These inform the public of the planned date (and even time) of release for specific sets of data. The use of advance-release calendars increases transparency and helps to enforce a useful discipline on the statistical system.

Integrity

Integrity refers to the policies and practices that ensure the reliability of statistics and foster public confidence in the objectivity and professionalism of the statistical system. There are four main steps to increase the integrity of official statistics:

- Disseminate the terms and conditions under which official statistics are produced, including those relating to the confidentiality of individually identifiable information.
- Identify internal government access to data before release.
- Identify ministerial commentary when data are released.
- Provide information about revisions and advance notice of important changes in methodology.

While these steps cannot guarantee that statistics are free from tampering or that their presentation is not subject to political influence, they provide some safeguards and increase the amount of information available by which the public can judge the quality of the data.

5.4.3 The general data dissemination system

The review of data outlined above has been formalized by the IMF with support from the World Bank in the form of the GDDS. The system covers not only macroeconomic and financial data but also social and demographic data. The purposes of the GDDS are to

- encourage countries to improve data quality;
- provide a framework for evaluating needs and setting priorities for data improvement; and
- guide countries in the public dissemination of comprehensive, timely, accessible, and reliable economic, financial, and sociodemographic statistics.

Member countries of the IMF voluntarily elect to participate in the GDDS. Participation requires committing to using the GDDS as a framework for statistical development; designating a country coordinator; and preparing metadata² that describe (a) current practices in the production and dissemination of official statistics and (b) plans for short- and long-term improvements in these practices. Participants are requested to update their metadata as significant changes in their statistical practices or plans for improvement take place, but at least once a year.

Principal features of the GDDS

The GDDS framework is built around (a) data characteristics, (b) quality, (c) access, and (d) integrity. The framework is intended to provide guidance for the overall development of economic, financial, and sociodemographic data. The framework is designed to be flexible enough to meet the needs of different countries and the developmental requirements of their statistical systems.

The data dimension includes coverage, periodicity (the frequency of compilation), and timeliness (the speed of dissemination), and the system provides recommendations on good practice for compiling and disseminating data in five categories or sectors:

- *real sector*—covering national account aggregates such as GDP, production, and price indexes and labor market indicators;
- *fiscal sector*—government revenue and expenditure and government debt;
- *financial sector*—broad money and credit aggregates, central bank aggregates, interest rates, and the operation of key financial institutions such as a stock market.;
- *external sector*—balance of payments, international reserves, external trade, external debt, and exchange rates; and
- *sociodemographic data*—population, health, education, and poverty.

The data dimension in the GDDS is closely linked to the quality dimension described in section 5.4.2. For the access and integrity dimensions, the focus is on the development of policies and practices in accordance with the dissemination of readily accessible and reliable data. Information on access and integrity of the data and, especially, the agencies that produce and disseminate the data, is essential in building the confidence of the user community in official statistics.

GDDS and the PRSP process

Box 5.2 sets out some of the ways in which the GDDS can be used as a powerful tool for the assessment of statistical capacity in the PRSP process. Case study E.2 provides an example of how the GDDS can be used to document the current capacity of the national statistical system within the framework of the PRSP. Case study E.2 also shows how the monitoring and evaluation needs of the PRSP can be included in the metadata for poverty statistics in the sociodemographic component.

The GDDS has developed quickly. By January 2001, 71 countries had appointed GDDS country coordinators, of which 22 had posted metadata on the IMF's Dissemination Standards Bulletin Board; metadata for several more countries were in the process of being finalized before posting.

At the same time, the GDDS is being increasingly used as a framework for statistical development generally. Although it emphasizes macroeconomic, financial, and monetary statistics, the inclusion of sociodemographic data provides the link to the PRSP process. From this perspective, the main advantages of using the GDDS as a framework are the following:

- No alternative system that brings together both social and economic statistics is available.
- The process of compiling the metadata provides a systematic way of assessing the performance and capacity of statistical systems and prioritizing plans for improvement.
- A large number of countries is interested in participating; there seems to be a great demand to use GDDS.

There are, of course, some disadvantages to using the GDDS as a framework. The main disadvantages are the following:

- The conceptual development of GDDS reflects an emphasis on economic and financial data.
- The format for compiling and presenting the metadata has been developed for economic and financial statistics; it is less well suited to social and demographic statistics (for example, no over-all framework exists for sociodemographic data).
- Not all areas of statistics are covered, and there are some important gaps, including environmental statistics.

5.5 Assessing Strengths and Weaknesses: Organization and Management

The effectiveness of a statistical system is determined by the outputs and products it produces, but it also depends on the system's functional and organizational structure. The purpose of this section is to identify the main components of a statistical system to provide a basis for assessing capacity and identifying where improvements and investments are needed, which is discussed in detail in section 5.6.

Before priorities for investing in the national statistical system can be identified and specific capacity strengthening activities undertaken, the current capacity of the system needs to be assessed. This will involve a process of identifying strengths and weaknesses and setting out opportunities and challenges.

It is recommended that such an assessment be divided into two parts: (1) the internal organization, covering aspects such as structure, human resources, infrastructure, coordination mechanisms, and management processes, and (2) the external environment, which includes elements such as the legislation

Box 5.2. The GDDS and the PRSP Process

The GDDS has two components that indicate its importance as a framework for assessing the statistical system as part of the PRSP process. First, it is comprehensive and designed to help countries prioritize plans for improving their statistical systems. Almost all the areas of importance to the PRSP are already included. Second, the formal process of preparing the metadata ensures that the data systems underlying the PRSP indicators are well documented.

The sociodemographic data component specifically includes poverty as a data category and thus provides the framework for documenting how the various indicators are to be generated. Important macroeconomic and government financial statistics are documented under the real and fiscal sectors.

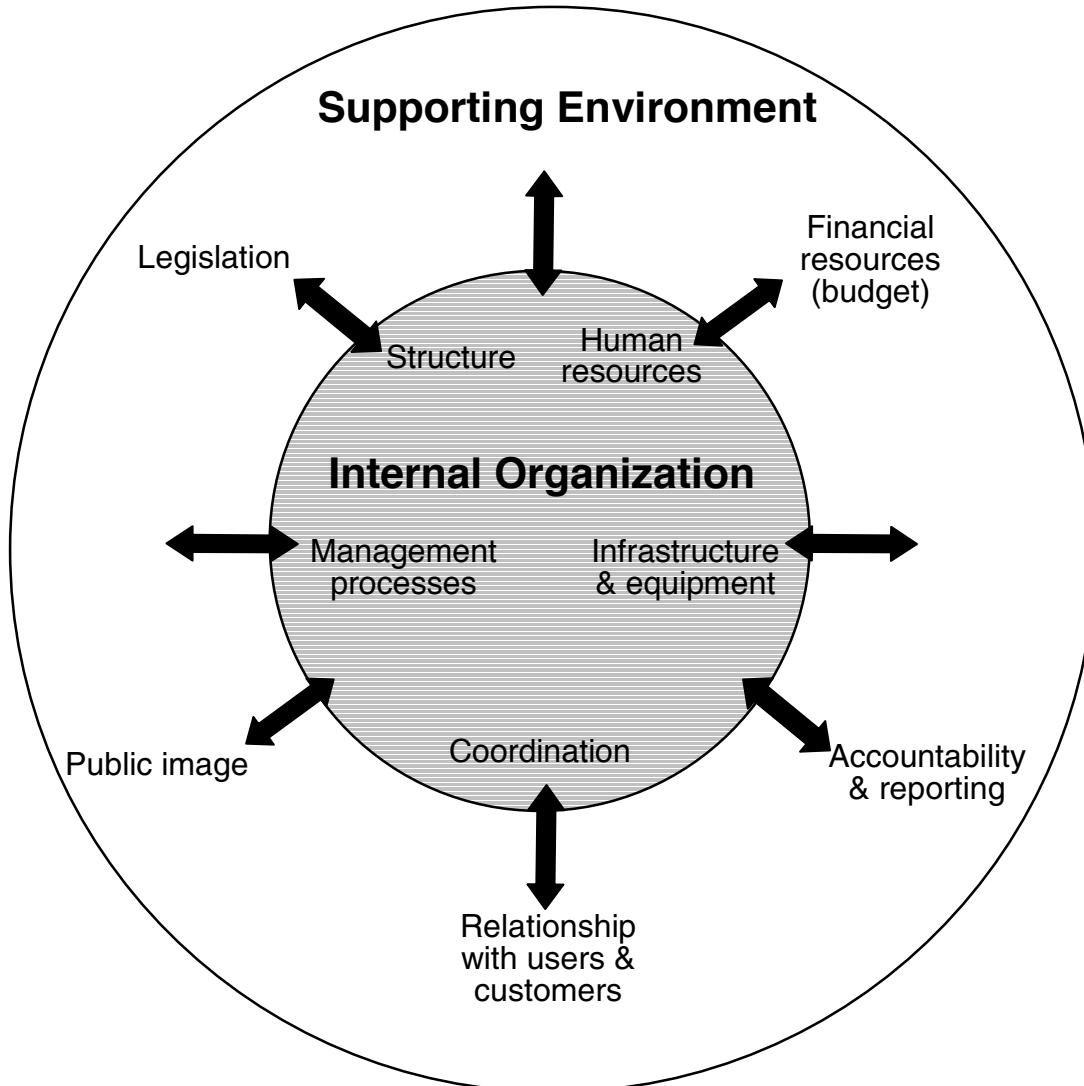
the system operates under, the availability of financial resources, mechanisms for reporting and ensuring accountability, relations with users and customers, and the general public image. Figure 5.2 illustrates the overall approach.

5.5.1 Internal organization

The structure of the national statistical system

While the information needs and priorities of a country and the capacity of its statistical system vary, many of the main elements can be found in most systems. The main functions of a statistical system are to collect data from a variety of sources, process and analyze this information, and disseminate it in different forms suited to the needs of different users. Other than scale, the key difference between a national statistical system and an individual researcher is that official statisticians largely collect data and produce statistical products for the use of others. This separation between data generation and use puts important demands on the statistical system. The analysis of structure, therefore, should be carried out in terms of the capacity of the system to fulfill the required functions and, ultimately, to provide the data that users want and need.

Figure 5.2. Components of a National Statistical System



Source: From various resources developed by authors.

The main components of a national statistical system are considered under the following headings:

- **Policy management and coordination.** Who is responsible for overall policy, for setting priorities, and for coordination and management of the system?
- **Quality management.** Who is responsible for ensuring the quality of the data produced?
- **Data collection, compilation, and dissemination.** Which agencies are responsible for the collection, compilation, and dissemination of data in the main areas of concern to the PRSP?
- **Database management.** Who has the responsibility for maintaining databases in the main areas?
- **Communications.** What mechanisms and processes exist for communicating between data providers and users?

Case study E.3 provides some examples of different structures of national statistical systems. In particular, the case study contrasts systems that are centralized with those that operate on a more decentralized basis. The case study also discusses some of the advantages of the national statistical agency operating as an independent agency rather than as part of the ministerial structure.

Coordination and management

A key requirement for any statistical system, especially a more decentralized one, is to have effective procedures in place for coordination and management. Effective management is required to set strategy and agree on targets, ensure that the system is responsive to the needs of customers, mobilize financial and other resources, maintain a supportive external environment, manage human resources, and ensure consistency in systems and operations. An important component of the analysis of statistical systems will be a review of organization and management, using these headings. Case study E.4 provides an example of an organization and management review for a statistical agency in Africa.

Human resources

The statistical system's human resources—the people who work for the component organizations and the skills and expertise they possess—represent the most valuable and often the scarcest resource. To be effective, a modern statistical system needs a wide range of skills and expertise, including the following:

- general management,
- financial management,
- human resource management,
- technical statistical analysis,
- survey design and management,
- cartography,
- communications, publications, and design, and
- computer systems analysis and programming.

The analysis of the human resource development needs of a statistical agency will start with a summary of requirements, determined by current and planned activities and targets, schemes of service that set the qualifications required for staff at different levels, and the analysis of strengths and weaknesses. A human resource development strategy and training needs analysis will then match the current situation against requirements, with an identification of priority areas for investment. Case study E.5 gives an example of a review of training and human resource development needs in an African statistical system.

Infrastructure and equipment

The main functions of a statistical agency are data collection, data processing and analysis, and dissemination of statistical products in different formats. Infrastructure and equipment need to be adequate to meet the needs of these tasks, with particular emphasis on data handling and processing. Because poverty-related data are derived from household and other types of sample surveys, based on

direct enumeration, to meet the needs of the PRSP the statistical system also needs to have access to adequate infrastructure and equipment to support these kinds of surveys.

Modern computer technology has the potential to substantially increase the efficiency of a statistical agency and to reduce costs. In particular, it provides opportunities for reducing delays in data processing, for dramatically reducing the cost of data dissemination through the use of technologies such as the Internet and CD-ROMs, and for expanding the scope for linking together different datasets.

Management systems

The manner in which a statistical agency is managed, including the mechanisms for setting goals, measuring progress, assessing staff performance, and communicating at all levels, greatly influences performance and outputs. Box 5.3 indicates some of the areas that need to be addressed.

5.5.2 The external environment for statistics

As illustrated in figure 5.2, the effectiveness of a national statistical system and the extent to which it can meet the needs of the PRSP process are factors of both the external environment in which it operates and its internal organization. In this section we look at the key components of the external environment.

Statistical legislation

The rules under which a statistical system operates are usually spelled out in legal statutes and administrative rules. Although each country will have its own set of rules and principles, over the last century a number of general principles have been established from experience. They also have been discussed and validated internationally and are applicable for a wide range of different environments.³

The governing principles and practices for operating an effective statistical agency are summarized below.

- Maintain a relationship of mutual respect and trust with those who use a statistical agency's data and information. In particular, the agency must maintain credibility for itself and its products. It must be objective and be seen to be free of political interference and manipulation. While the national statistical agency must be accountable for its operations and for the resources it uses, in many models it may operate autonomously in carrying out its charter.
- Maintain a relationship of mutual respect and trust with those who supply data and with all data subjects whose information it obtains. It must ensure appropriate confidentiality of individual data and inform respondents that individual records are not to be made available to other agencies for any other purpose.

Box 5.3. Changing Management Values

In common with other government departments, many statistical agencies in developing countries are run with a top-down management style. Although agencies have adopted many aspects of modern management, including the formulation of a clear vision of what they would like to achieve, the achievement of this vision requires managers to behave differently so that important changes can be implemented. It is not easy to empower staff to take responsibility at the operational level. Empowered staff can make suggestions, openly disagree with management decisions, and demonstrate skills and innovations that their managers may not possess. It is easier to run an ordinary bureaucratic public sector organization in which staff do not question directives and instructions or expect to be listened to.

If statistical systems are serious about making profound changes, however, they must not only change some systems and products, but also recognize the need to change the organizational culture. Managers will need assistance in implementing change of this nature and actively driving such changes. They will need both formal training and on-the-job advice.

The values an organization deems important are demonstrated not only through the management style but also by the way things are done. If staff are valued, they will be provided with reasonable working conditions. If customers are valued, products will be accessible and will meet a real demand. If resources are valued, equipment and the environment will be maintained before they fall into disrepair. Managers and staff consistently display organizational values by their everyday behavior. It is suggested, therefore, that putting change into effect requires a sustained commitment from senior management. Progress must be demonstrated by action at all levels, not just by pronouncements from the top.

- Maintain close contact with users and policy analysts in planning its statistical program and activities.
- Widely disseminate data and be open about the data provided and the means by which they are collected.
- Provide information relevant to issues of public policy.
- Commit to quality and scientific and professional standards to facilitate a correct interpretation of the data. Statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.
- Support professional advancement and training of staff.
- Establish an active research program.

Most countries have a formal statistical law that describes the structure of the national statistical system, spells out the responsibilities and functions of a central statistical agency, and governs the relationships between data suppliers and users, including the provision of individual information, the rules for the obligatory supply of information, and guarantees of confidentiality and nondisclosure. These aspects of the law are common to statistical legislation in almost all countries. In a number of cases, however, especially where the statistical agency has gone through some kind of recent restructuring (for instance, in which it has been set up as an independent agency), the law has a number of additional clauses. Key components of modern statistical legislation include the following types of provisions:

- Some legislation guarantees that the statistical agency can publish information free from political interference, subject to the need to meet normal professional standards.
- Some requires the statistical agency to publish and disseminate information, either without charge or for a fee. This may include a requirement for the agency to prepare and publish an advance publication calendar stating what is to be produced and when.
- Some guarantees the independence of the statistical agency from political control so that the management has the freedom to publish information as it sees fit, subject to the need to account for the use of public resources and to meet professional standards. The legislation may establish, for example, that the head of the statistical agency may not be dismissed except in specific circumstances and with the agreement of some external body.
- Certain legislation establishes a process requiring the statistical agency to account for its actions and outputs on a regular basis. This may involve setting up a statistical commission or perhaps requiring an annual report to be presented in Parliament.

Case study E.6 provides examples of modern statistical legislation in different countries. In the short run, it may not be easy to revise the statistical legislation; such a process needs careful planning and involves widespread consultation with the main stakeholders, discussions with parliamentary draftsmen, and the allocation of parliamentary time. However, in circumstances in which the legislation is out of date, the penalties are unrealistic, and the structure of the system is under review, it will be important to go through the legislation and identify where changes are needed.

Budgets

Poverty-related statistics are a public good; consequently, most statistical activities are financed from government revenue, and financial resources are allocated through the budget. The capacity of the statistical system, therefore, is determined to a large extent by the level and stability of the financial resources it receives. Because full cost recovery from users is not possible, the ability of the system to meet needs is determined by the success of managers in getting resources that compete with the other demands on the budget. In many countries statistical systems operate within a vicious cycle of limited resources in which output does not meet need, resulting in a lack of political support to increase resources.

The PRSP is an important opportunity to break out of this vicious cycle. By focusing on a principal area of statistics, with associated political and civil society support, it provides the opportunity for

managers of the statistical system to make the case for increased funding and for a sustained increase in budget resources. If this is to be successful, however, a number of factors must be addressed.

- Because the value of statistics generally increases when consistent data are collected over time, it is important to develop a budgeting system that provides for the sustained operation of data systems. Managers need to develop programs that can be financed within the context of the medium-term expenditure framework.
- Budget resources must be used efficiently to produce agreed-on outputs. The most successful national statistical systems are ones where increased resources result in improved outputs. In a number of countries, statistical agencies now have performance agreements with the treasury in which resources are provided in exchange for an agreed-on set of core statistics (see case study E.7 for some examples).
- While donor funds are important for statistical activities in many countries, the existence of a large number of separate donor-funded projects outside the budget can have a destabilizing effect, leading to reduced central support in the future. Over time, the number of stand-alone statistical projects financed from aid funds is likely to decrease, and more assistance is likely to be provided through the central budget or as part of sectorwide projects. Managers of statistical systems, therefore, need to be aware of this trend and improve their budget management.

Accountability and reporting

A significant requirement of statistical systems is to be accountable for the resources they use and to provide regular reports on activities, outputs, and future plans. Since the main resources used to finance statistical activities are provided from tax revenue, this accountability and reporting must be open, transparent, and regular. In part, this is the flip side of the performance contract discussed previously. In return for adequate resources, the managers of statistical systems must provide information on how those resources have been used, what products have been produced, and what plans are in place to improve performance.

Several countries have adopted different procedures for improving the accountability and reporting of the statistical system. Some examples include the following:

- The head of the statistical agency is required to make an annual report to Parliament, setting out the established targets and the performance of the agency.
- The agency reports to an independent statistical commission or board, which has the responsibility of ensuring that professional standards are observed and resources are used efficiently.

Relationships with users and customers

A statistical agency provides products and services for a number of different users or customers. Most countries lack an effective market for official statistics; prices do not convey much information, and the managers of the agency need alternative mechanisms for setting priorities and identifying where investment and improvements are needed.

In this situation, customer relations are very important, and in the context of the PRSP it is vital that processes be established that provide for regular consultation between data providers and users. An important starting point is for statistical agencies to know who their customers are; in addition, mechanisms must be established that provide for regular consultation and exchange of views. Case study E.8 provides some examples of good practice in this area.

Improving the public image of the statistical system

Ultimately, a statistical agency will be effective only if it develops and sustains a good public image—the data it produces must be perceived as objective, reliable, and useful, and its resources must be used effectively. In many countries, the opposite situation is all too common; the products from statistical agencies are not trusted and are seen as being late, inaccurate, and possibly subject to political manipula-

tion. Changing this image can be a long-term task, but the PRSP presents an important opportunity both to raise the image and to improve the effectiveness of statistics.

Other actions that have helped to improve the image of statistics in different countries include the following:

- improving public confidence by being more open about methods, techniques, and the means by which resources are used;
- using public relations campaigns linked to specific events such as a population census to emphasize the need for reliable, trustworthy, and timely data;
- improving the design and structure of statistical reports, abstracts, and other products to make them easier to use;
- providing training and special briefings for data users to help them use the data more effectively;
- providing briefings for journalists and other media personnel; and
- using external processes such as the GDDS to provide more information to users and a framework against which progress can be assessed.

5.6 Developing a Poverty-Focused Information Strategy

Chapter 3, “Monitoring and Evaluation,” reviews the steps required for designing an outcome monitoring system and an evaluation strategy for the PRSP. In this section we describe the steps required to put together a poverty-focused information strategy, specifically identifying both short- and long-term interventions to develop and strengthen the statistical system. The emphasis is on improving the supply of data and indicators to meet the needs of the PRSP that have been identified elsewhere.

The strategy needs to be built on two main building blocks: first, the current and expected future demands for information and indicators that will be generated by the PRSP and, second, the assessment of the strengths and weaknesses of the statistical system outlined in the previous sections of this chapter. In particular, the strategy should build on existing strengths, address specific weaknesses, and identify the important tradeoffs between what is desirable and what is feasible to resolve.

In developing the strategy, it should be remembered that the PRSP will not be the only source of demand for statistical data in a country. The national statistical system must continue to meet demands for information and indicators from other sources, including national and local governments, participants in both national and international markets, civil society organizations, the media, and international agencies. Although poverty reduction is usually the main priority for national development, the information strategy for the PRSP should not be developed at the cost of ignoring the needs for other kinds of data.

5.6.1 Ownership and participation

Stakeholders

One of the most important aspects of the design and development process is the need for a participatory approach in each phase of the process, one in which all stakeholders are involved. This approach could significantly improve the efficiency and effectiveness of the design process as well as the quality of the output. It also enhances the sense of responsibility for, and ownership of, the system designed. To achieve this, stakeholders need to be clearly defined and their involvement coordinated.

In general, the stakeholders will be the users of statistical data together with the organizations that allocate and provide the financial resources. Figure 5.1 identifies the users of statistical data to include the following:

- legislators, including members of national parliaments, regional and local councils, and so forth;
- government planners, analysts, and other officials working at national and local levels, including the staff of quasi-autonomous agencies such as central banks;

- lobbyists and people working for organizations such as NGOs, community groups, and similar bodies;
- researchers;
- media, including print, television, and radio journalists;
- general public;
- participants in both domestic and international markets, especially managers of businesses; and
- representatives of donors and international agencies.

Other stakeholders include the agencies responsible for financing statistical activities, especially the Ministry of Finance and organizations responsible for budget management.

Participatory approach

In the same way that the PRSP itself is developed through a participatory process, if the poverty-focused information strategy is to have wide acceptance and ownership, it is important that the process that develops the strategy be open, inclusive, and participatory. This can be accomplished through a variety of methods. Case study E.9 provides some examples of how information strategies have been developed in different countries.

Typically, the detailed work of developing the strategy will be overseen by some kind of national steering committee that includes representatives of the main stakeholders. It will be important to ensure that participation in this committee is at a sufficiently senior level to ensure commitment by all the key participants. Many countries have stressed that this committee not be composed of government officials only, but should also include representatives from other sectors, such as civil society organizations and academia.

5.6.2 Developing the strategy

In accordance with the PRSP generally, the information strategy has four main components:

- identifying where the strategy is starting from—an assessment of the strengths and weaknesses of the statistical system as described earlier;
- setting goals and targets that outline what the system is going to achieve within an agreed-on timeframe;
- deciding on priority action areas to achieve the targets; and
- putting in place mechanisms to monitor progress and to keep all stakeholders informed.

An important decision that will need to be made at an early stage entails the timeframe that should be used for the strategy. On the one hand, it will be important to concentrate on short-term needs, as the PRSP has a specific one- to three-year time period, especially where this is linked to the Heavily Indebted Poor Countries (HIPC) debt relief process. On the other hand, many statistical activities take place over a longer cycle, with population censuses, for example, usually carried out only once every 10 years. To deal with both aspects, it is recommended that countries develop a sequenced information strategy that has both short- and long-term components. In general, the short-term focus will be on meeting the immediate data needs of the PRSP, mainly through making better use of existing data systems and helping to improve dissemination and analysis. In the longer term, the emphasis is likely to be on making appropriate investments to develop new data systems and address constraints in human resources, equipment, and management systems. Case study E.10 provides an example of such a sequenced information strategy.

Short-term priorities and actions

The short term in this context is likely to cover a period of one year. Within this timeframe it is unlikely that the statistical system will be able to design, implement, and disseminate information from an important new information system. The planning cycle for an important new data initiative such as a

Living Standards Measurement Study (LSMS) or a household income and expenditure survey is likely to be in excess of two years from the initial planning to the dissemination of results. In the short term, therefore, the emphasis is expected to be much more on making existing data processes work better rather than on setting up important new data collection processes.

The key requirement is to meet the immediate needs of the PRSP for indicators for the paper itself and to monitor progress through annual reports and at formal reporting points such as the HIPC completion point. At the same time, however, improving existing data systems by, for example, reducing delays in publications, strengthening analysis, and widening dissemination can help improve the image and public standing of the statistical system and build up a constituency for more investment in the future. As noted already, national statistical systems in many poor countries are constrained by a lack of resources, but there is little support to increase resources because the statistical output is so limited. Concentrating on improving the quality of a few important data series can be effective in altering public perception, changing the vicious to a virtuous circle. In this scenario, the statistical system is responsive to demand, improving in both quality and efficiency, and, consequently, wide support exists for increased investment.

The kinds of short-term improvements in data quality that could be achieved in many countries include the following:

- improving processing of administrative data in key sectors such as health and education to reduce delays in making information available to users and to improve the reliability of the data;
- making survey data easily available to researchers so that key questions on targeting and resource allocation can be addressed;
- improving the design of statistical publications to make them more accessible to users and to include more analysis and interpretation for nonspecialist users;
- disseminating data through the Internet and in electronic format to reduce delays in the printing of reports and abstracts;
- publishing preliminary results from surveys and other data collection processes so that important data can be made available sooner;
- putting together a database of important data series from different sources; and
- publishing more information about data sources and methods (for example, the GDDS metadata) and making sure that users are kept informed about changes in methods, coverage, and so on.

Longer-term investments in statistical capacity

In the longer term, for perhaps 3 to 10 years in the future, the focus of the strategy is likely to be wider, covering most aspects of statistical development. It is suggested that the strategy cover the following areas:

- ***Improving data collection and processing systems and methods.*** Countries should develop a strategic program for data collection, setting out priority areas for censuses, sample surveys, and other field-based statistical inquiries. The aim is to establish a program that reflects the priorities of the stakeholders, not simply donors' needs. Such a program can then develop capacity for design, implementation, and data processing with an agreed-on timetable for publication and dissemination. Although it still may be desirable to include some capacity in the program for responding to ad hoc requests, the principal aim is to apprise all stakeholders of what is planned and to ensure that national priorities are not hijacked by donor agencies or others just because they have immediate financing. Such a program should identify specific milestones for monitoring progress.
- ***Improving organization, management, and strategic planning.*** Here the emphasis is on improving management and organization of the statistical system. The aim is to address the weaknesses identified in the assessment of internal organization and management. A key part of improving management is to strengthen the processes for financial management and budgeting.

- **Developing human resources.** This strategy involves developing an appropriate human resource development plan that improves internal and external communications, makes the best use of scarce skills and expertise, and provides for regular upgrade through training and education. The human resource development plan should be integrated with the strategic plan and with management processes. It should ensure that each member of the staff is aware of what he or she is required to achieve, how goals are assessed, and what resources staff members can call upon to support their personal development.
- **Strengthening the statistical infrastructure and equipment.** This component of the strategy is concerned with the development of a program to upgrade the facilities and equipment of the statistical system to improve capacity and take advantage of new information technology. The strategy should cover hardware (computers, networks, and communications facilities), software, and the staff's capacity for installation, and use and maintenance of the equipment. Other aspects include equipment to support data collection, including transport, data recording, and data capture.
- **Improving statistical products and public relations.** The focus here is on improving relations with customers and users through better communications and then translating this into improved products and outputs. It aims at improving the format and design of products, making them more accessible to users, and facilitating the use of the data for planning and decisionmaking. Modern computer and printing facilities offer new opportunities for customizing the design of products for specific users. The use of electronic dissemination and the Internet can also dramatically reduce the cost of publication. Moreover, statistical agencies will need to develop appropriate release and publication policies. Factors that need to be considered include how to formally release data so that all users can have access as soon as possible and what charges, if any, should be imposed.
- **Institutional arrangements.** As the complexity of the statistical system develops, it may be necessary to review the organization's structure. Within the strategic plan, it may be useful to include specific targets for institutional development. In a number of countries, changes have been made to make the central statistical agency independent of direct political control. Although the agency is still part of the central government, it is no longer formally part of an individual ministry and may well have a status similar to that of the central bank. Such independence offers the advantage of reducing the possibility of political manipulation of statistical output and improving public confidence in the various products. This change can also help increase the openness and accountability of the system by, for example, providing for an independent review and institutionalizing the reporting process. Case studies E.7 and E.8 provide ideas on different mechanisms for independent review and monitoring of the statistical system.
- **Legislation.** Significant changes in the organization of the statistical system may well require new legislation, but even if this is not envisaged, it could be useful, in the context of the strategic plan, to review existing statistical legislation to determine if it needs to be updated. Changing legislation is not easy and takes some time to plan, so it is important to ensure that the timetable is well organized. In addition to the traditional aspects of statistical legislation, factors that should also be considered include protecting the independence of the system from political interference, providing for a regular process of reporting, accounting for the use of resources, and ensuring that the system publishes data on a regular basis.
- **Budgeting.** The operation of a statistical system requires that adequate financial resources be made available through the budget to meet the running costs and provide for investment. In a number of countries governments are moving toward a system of medium-term expenditure frameworks that set out the course of public expenditure over a multiyear period. In this context, the strategic plan should describe how the statistical system will operate. It may be useful, for example, to consider establishing a performance contract between statistical agencies and the treasury in which specific statistical products are provided on a regular basis in return for an agreed-on budget provision.

5.6.3 International and donor support

In general, the donor community seems increasingly interested in supporting data-related activities, particularly in the context of poverty reduction and PRSPs. All donors subscribe to the IDGs and many

have specific programs to support capacity building in statistics. Recent years have witnessed an increasing interest in measuring the impact of poverty reduction activities, and this is now being translated into specific budget, program, and project support for statistics. In this section we review some of the donor programs and other initiatives in this area.

PARIS21

PARIS21 is a new international process by a global consortium of policymakers, statisticians, and users of statistical information in support of development. It is not a new international agency, but rather works through existing agencies. It aims to build statistical capacity as the foundation for effective development policies by helping to develop well-managed statistical systems that have appropriate resources. In the longer term, it seeks to help promote a culture of evidence-based policymaking and monitoring in all countries, especially in poor developing countries. This in turn will serve to improve transparency, accountability, and the quality of governance.

The consortium promotes and assists strategic planning to meet the information needs of national development frameworks. It is a source of international expertise and encourages South-South cooperation. It assists lesson learning and the sharing of best practices, fostering more effective dialogue and coordination in international technical cooperation and creating and disseminating advocacy materials. PARIS21 aims to raise awareness and demand for statistics and analysis. While the consortium has only limited funds for regional workshops, its membership includes both bilateral and multilateral development agencies. The goal is to build on existing national, regional, and international work and to generate a real increase in resources devoted to building statistical capacity. PARIS21 acts as a catalyst, stepping aside as the development partners take this work forward on a country-by-country basis.

Members of PARIS21 include people from governments, regional and international organizations, professional bodies, and academic institutions. In November 2000, PARIS21 had nearly 400 members from more than 100 countries representing 196 agencies. More than two-thirds of country members are from developing countries. Membership is open to anyone with practical experience and a desire to collaborate to improve policymaking through reliable, pertinent statistics.

The consortium has established a number of task teams to work on specified areas; it also organizes both regional and national meetings. Additional information can be obtained from the secretariat based in Paris, within the Development Cooperation Directorate of the Organisation for Economic Co-operation and Development.

World Bank Trust Fund for Statistical Capacity Building

The Trust Fund for Statistical Capacity Building is a worldwide technical assistance program managed by the World Bank on behalf of donors to help member countries improve their statistical systems. The trust fund helps member countries realize their full potential to produce, process, and disseminate timely, reliable, and comprehensive data for economic and social policymaking. It has a key role in promoting the PARIS21 agenda and in mobilizing resources for relevant projects. It also enhances the coordination and strengthens the partnership among the key players in international development and among technical assistance providers in the area of statistics.

The Trust Fund for Statistical Capacity Building supports global, country, and region-specific activities (including technical advice, workshops, publications, training and retraining, and project follow-up supervising and advisory services). It focuses on (a) assessing and reviewing the statistical capacity needs of member countries, (b) developing a strategic plan for statistical development linked to the PRSP and other national development strategies, and (c) restructuring or modernizing the statistical system of the country so it can eventually become self-sustaining.

Other source of assistance

A number of bilateral and multilateral agencies provide support and assistance for statistical capacity building. Some of the agencies active in the field are described below.

- The IMF provides technical assistance programs and training in economic, financial, and monetary statistics and supports the use of the GDDS as a framework for setting priorities for development.
- The U.N. Statistical Department coordinates work on international standards and classifications.
- The U.N. regional commissions help to coordinate statistical developments in their regions and to promote good practice.
- The U.N. specialized agencies support statistical development in their areas of concern, including the United Nations Population Fund; United Nations Educational, Scientific, and Cultural Organization; Food and Agricultural Organization of the United Nations; World Health Organization; United Nations Environment Program; United Nations Children’s Fund; and others.
- The World Bank’s lending program and other grants provide support for statistical activities. The World Bank Institute offers training in a number of related areas, particularly through the Poverty Analysis Initiative.
- The European Commission, with statistical activities coordinated by Eurostat, focuses on regional cooperation and the potential for action in light of the Cotonou agreement with the ACP (African, Caribbean, Pacific) states.
- A number of bilateral donors provide support for statistical capacity building; countries active in this field include Canada, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and the United States (through the U.S. Agency for International Development as well as international training programs).

5.6.4 Monitoring progress with the strategic plan

Indicators of statistical capacity

Section 5.6.3 reviewed the process of developing a strategy to strengthen the statistical system. A key part is to identify specific goals, targets, and milestones that can be used to monitor progress. We suggest that this can be done using the short- and long-term actions identified in section 5.6.2, together with specific targets for strengthening organization and management as described in section 5.5. Here it is useful to identify changes in terms of internal organization, which can largely be implemented by management and modifications to the external environment, requiring the support and involvement of other stakeholders.

Specific indicators and milestones will need to be developed for each country and each main participant in the national statistical system. In terms of data outputs and improved dissemination, the GDDS provides a framework for documenting priorities for improvement and setting a timeframe for action. Possible indicators of progress could include the following:

- improvements in specific data series in terms of timeliness, coverage, or level of disaggregation introduced and implemented;
- new data series developed and published;
- international standards for specific data items met;
- new data products produced—for instance, presenting existing data in new ways, or including new types of analysis and discussion; and
- improvements in response rates for specific surveys.

More general targets for data dissemination might include the following:

- a publication calendar, with specified release dates for the introduction of and adherence to different series; and
- introduction of new methods of dissemination, including the release of data through the Internet and the publication of detailed information in electronic formats.

Targets and indicators for improvements in organization and management will inevitably vary from country to country, but the areas to be considered may include the following:

- development and introduction of formal planning processes, including, for instance, an output-focused budget process with individual goals and targets for staff;
- stronger human resource management systems, with a regular training needs analysis and an annual training and human resource development plan; and
- stronger internal communications and team building.

Externally, targets will need to reflect the time required to involve stakeholders and manage the change process. Areas of concern may include the following:

- setting up regular consultations between users and providers of statistical data;
- establishing processes for receiving regular feedback from customers;
- updating statistical legislation; and
- developing and improving links with the media.

Reporting and accountability

Reporting and accountability focus on establishing formal processes for reporting on the progress achieved in implementing the strategic plan and on ensuring transparency and accountability in the use of public resources. Section 5.5.2 described some mechanisms to improve accountability and reporting. Here the emphasis is on putting these into effect. In addition to formal annual or other reports, statistical agencies can issue periodic press releases for dissemination through newspapers, radio and television, and the Internet. In this way, stakeholders in all parts of the process stay informed of progress in statistical development and the availability of new or revised datasets, aggregates, and indicators. This open dialogue could promote statistical awareness and interest in the wider community, which in turn could encourage cooperation in responding to statistical inquiries and build confidence in the national statistical system.

Notes

1. For example, the U.N. System of National Accounts for the real sector, IMF recommendations on balance of payments statistics, government finance statistics, and so forth. Technical note E.8 provides more details.
2. The term “metadata” denotes information or data about published statistics. The metadata provide the information required by users to determine how the data were collected and how they can best be used.
3. Technical note E.9 sets out the Fundamental Principles of Official Statistics adopted by the United Nations.

Guide to Web Resources

The United Nations Statistics Division provides a wide range of statistical outputs and services for producers and users of statistics worldwide. Available at <http://www.un.org/depts/unsd/index.html>.

UNECA (United Nations Economic Commission for Africa) is the regional arm of the United Nations, mandated to support the economic and social development of its 53 member states, foster regional integration, and promote international cooperation for Africa’s development. Established in 1958 and based in Ethiopia. Available at <http://www.uneca.org>.

The Economic and Social Commission for Asia and the Pacific (ESCAP) is the main organization for U.N. activities in that region. Available at <http://www.unescap.org>.

The Economic Commission for Latin America and the Caribbean (ECLAC) is headquartered in Santiago, Chile. It was founded for the purposes of contributing to the economic development of Latin America, coordinating actions directed toward this end, and reinforcing economic relationships among the

countries and with other nations of the world. Available at <http://www.eclac.org/English/statistics/statistics.htm>.

The Economic Commission for Western Asia (ECWA) was established in 1973 with objectives of enhancing the sustainable development of member states, promoting regional cooperation and policy coordination among member states and highlighting the linkages among the economic, social, cultural, technological, and environmental dimensions of development. Available at <http://www.escwa.org.lb/escwa/divisions/statistics.html>.

FAOSTAT (Food And Agricultural Organization Statistic Department) is an on-line, multilingual database currently containing more than 1 million time-series records covering the following areas: food balance sheets, fertilizer and pesticides, land use and irrigation, forest products, fishery products, production, trade, population, agricultural machinery, and food aid shipments. Available at <http://apps.fao.org>.

ILO (International Labour Organization) regularly collects, compiles, and publishes basic labor statistics, including the economically active population, employment, unemployment, underemployment, average earnings and hours of work, time rates of wages and normal hours of work, labor cost, consumer price indexes, household expenditure and income, occupational injuries and diseases, and industrial disputes (strikes, lockouts, and other action resulting from labor disputes). Available at <http://www.ilo.org/public/english/bureau/stat/index.htm>.

The International Monetary Fund's Dissemination Standards Bulletin Board (DSBB) provides access to the Special Data Dissemination Standard (SDDS), the General Data Dissemination System (GDDS), and the Data Quality Reference sites (DQRS). Available at <http://dsbb.imf.org>.

The World Bank Data Group provides national statistics for countries and regions, including data profiles and country-at-a-glance tables as well as methods, modeling tools, and technical assistance in statistics. Available at <http://www.worldbank.org/data>.

The World Health Organization (WHO) provides health and health-related statistical information. Available at <http://www.who.int/whosis>.

The Statistical Office of the European Communities (EUROSTAT) European Union Statistics Department provides the European Union with statistics that enable comparisons between countries and regions. Available at <http://europa.eu.int/comm/eurostat>.

The International Statistical Institute (ISI) is one of the oldest functioning international scientific associations in the world. Established in 1885, the institute is an autonomous society that seeks to develop and improve statistical methods and their application through the promotion of international activity and cooperation. Available at <http://www.cbs.nl/isi>.

Statistical committee of the Commonwealth of Independent States (CIS) was established in 1991 for coordinating activities of participating statistical organizations of the CIS countries, developing and implementing a unified statistical methodology on the basis of mutual consultations, securing comparability and continuity of statistical elaboration, facilitating wide-scale information exchange in the framework of the CIS, organizing seminars, and creating and maintaining a common statistical database. Available at <http://www.cisstat.com>.

Statistics Directorate of the Organisation for Economic Co-operation and Development (OECD). Provides statistical data on member countries as well as some selected non-member countries. Available at <http://www.oecd.org/std>.

The World Trade Organization (WTO) is the only global international organization that deals with the rules of trade between nations. Its mission is to help producers of goods and services, exporters, and importers conduct their business. Available at <http://www.wto.org>.

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