

Final Draft

**PARIS21: *PAR*tnership *In* Statistics for development in  
the *21st* Century**

**Task Team: Improved Statistical Support for Monitoring Development  
Goals**

**Summary Report on Six Case Studies**

## Final Draft

### **About this Study**

PARIS21 is an international consortium of users and producers of statistical information dedicated to Partnership, Advocacy, Resource mobilization, Information exchange, and Strategic development. For more information about PARIS21, visit [www.paris21.org](http://www.paris21.org).

The case studies were conducted under the leadership of the World Bank Development Economics Data Group. A number of organizations supported the work, including the European Commission (EC), the World Bank, the United Nations, and the United Kingdom Department for International Development (DFID). The assistance of national statistical offices and United Nations Development Program, World Bank and European Commission country teams in supporting the fieldwork visits is gratefully acknowledged. The EC provided a consultant for each mission to help review the existing documentation and construct case study reports. Many individuals and organizations in the countries concerned contributed valuable comments and information. Mary Strode, Statistical Consultant, prepared this summary report.

All dollar amounts in this study are in U.S. dollars, unless noted otherwise.

## ABBREVIATIONS AND ACRONYMS

EBRP	Bolivian Poverty Reduction Strategy ( <i>Estrategia Boliviana de Reducción de Pobreza</i> )
EC	European Commission
CHS	Continuous Household Survey ( <i>Encuesta Continua de Hogares, ECH</i> )
CSO	Central Statistical Office
CWIQ	Core Welfare Indicator Questionnaire
DFID	Department of International Development (United Kingdom)
DHS	National Demographic and Health Survey ( <i>Encuesta Nacional Demográfica y de Salud, ENDSA</i> )
ICT	Information and Communication Technology
IHS	Integrated Household Survey ( <i>Encuesta Integrada de Hogares, EIH</i> )
EU	European Union
EUROSTAT	Statistical Office of the European Communities
FAO	Food and Agriculture Organization
GDDS	General Data Dissemination System
HBS	Household Budget Survey
HIPC	Heavily Indebted Poor Countries Debt Initiative
IMF	International Monetary Fund
INE	National Statistical Office ( <i>Instituto Nacional de Estadística</i> )
LSMS	Living Standard Measurement Study
MCS	Social Control Mechanism ( <i>Mecanismo de Control Social</i> )
MDGs	Millennium Development Goals
MECOVI	Regional Program of Improvement of the Surveys and Measurement of Living Conditions ( <i>Programa Regional de Mejoramiento de las Encuestas y Mediciones de las Condiciones de Vida</i> )
MICS	Multiple Indicator Cluster Survey
MOE	Ministry of Education
MOH	Ministry of Health
NSS	National Statistical System
PARIS21	Partnership in Statistics for Development in the 21st Century
PHS	Permanent Household Survey ( <i>Encuesta Permanente de Hogares, EPH</i> )
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
ROSC	Report on the Observance of Standards and Codes (IMF)
SCBI	Statistical Capacity Building Indicators
SNIE	National Statistical Information System ( <i>Sistema Nacional de Información Estadística</i> )
SNIS	National Health Information System ( <i>Sistema Nacional de Información en Salud</i> )
STATCAP	World Bank Statistical Capacity Building Program
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme

# Final Draft

<b>EXECUTIVE SUMMARY .....</b>	<b>5</b>
<b>1. Better Planning and Financing of Statistical Systems.....</b>	<b>6</b>
<b>2. Better Management and Organization of Statistical Systems.....</b>	<b>6</b>
<b>3. Better Use and Accessibility of Data .....</b>	<b>7</b>
<b>4. Improvements in Data Collection and Indicator Estimation Methodology.....</b>	<b>8</b>
<b>SUMMARY REPORT .....</b>	<b>10</b>
<b>1. Introduction.....</b>	<b>10</b>
<b>2. The Status of Indicator Estimates.....</b>	<b>10</b>
<b>3. Indicators with Weak Underlying Statistical Systems .....</b>	<b>12</b>
3.1 Problematic Indicators.....	12
3.2 Statistical Capacity Building Indicators (SCBI) Questionnaire .....	14
3.3 Sources of Indicator Information .....	15
<b>4. Underlying Statistical Capacities.....</b>	<b>15</b>
4.1 Population Denominators .....	15
4.2 Surveys .....	16
4.3 Weaknesses in Administrative Data Systems and Registers .....	18
<b>5. Capacity of Statistical Systems .....</b>	<b>19</b>
5.1 Human Resource Capacity .....	20
5.2 Data Processing.....	22
5.3 Capacity to Use Data for Indicators and Analysis .....	22
<b>6. Demand for Statistics .....</b>	<b>23</b>
<b>7. Funding.....</b>	<b>25</b>
<b>Appendix 1. Indicators of Statistical Capacity – Summary .....</b>	<b>30</b>
<b>Appendix 2. Sources of Indicator Data from Case Studies .....</b>	<b>31</b>
<b>Appendix 3. Good Practice Examples of Survey Designs and Programs .....</b>	<b>34</b>

## Executive Summary

Under the umbrella of PARIS21, *PARtnership In Statistics* for development in the 21st Century, a Task Team was formed to examine ways to improve support to statistical systems needed to monitor development goals, at both the national and international level. This report summarizes case studies that have been conducted on six countries, covering a wide geographical range: Bolivia, Burkina Faso, Cambodia, Malawi, Moldova, and Yemen. The case studies were conducted by small teams composed of experts drawn from international and national agencies, between November 2003 and February 2004.

This summary report focuses on ways to improve support to statistical systems in developing countries to strengthen the information required to monitor Poverty Reduction Strategies (PRS) and the Millennium Development Goals (MDGs). It is intended to highlight:

- problems faced by statistical systems in producing statistics to monitor development goals
- actions that could be taken by the international community to improve national capacity in this area
- actions that could be taken by national governments, including changes and improvements in the statistical system.

Since the purpose of this report is to highlight issues that are common to the six countries examined in the case studies, it is not representative of the situation in all developing countries. The situation will clearly vary from country to country.

Nonetheless, the picture painted of the underlying statistical systems in the six case countries is remarkably similar. The systems are characterized by under-funding, reliance on donor support, particularly for household surveys, and very weak administrative data systems. The basic demographic information needed to underpin key indicators is out of date in some countries, and funding for major activities, such as population censuses, is particularly difficult to secure. Overall, there is a shortfall in funding for the core statistical systems required to provide information both for economic management and for monitoring the MDGs.

Against this backdrop, the following ten recommendations have been distilled from the case studies, categorized broadly into four themes: the planning and financing of statistical systems; organization and management issues; use and accessibility of statistical data; and data collection and estimation methodology.

## **1. Better Planning and Financing of Statistical Systems**

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**Recommendation 1:** *Countries should develop National Statistical Development Strategies, and multi-annual plans for statistical activities. These plans should provide for an adequate and sustainable flow of indicator information for planning and monitoring purposes through 2015 and beyond.*

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The availability of statistics and information required to monitor Poverty Reduction Strategies and the Millennium Development Goals has improved since the late 1990s. Many developing countries now have information available on a number of key indicators, but the studies reveal that two-thirds of the indicators for MDGs 1-7 are from surveys, many of which are dependent on unpredictable donor financing. This leads to a significant risk that surveys will not be conducted at regular intervals or in sequence with the reporting needs of Poverty Reduction Strategies. Assured funding is required over the medium term to avoid delays, interruptions in planning and implementation, and disruptions in the continuity of statistics. Such funding will reduce dependence on uncoordinated donor-led methodologies, and increase country ownership of the statistics and planning processes. Some case studies, notably those for Bolivia, Burkina Faso, and Cambodia, identified duplication and inefficiencies in donor support to statistical systems. A strategy with clearly prioritized needs for statistical activities and development would guide donor support and maximize the utilization of resources.

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**Recommendation 2:** *Countries and partners should finance statistical activities on the basis of National Statistical Development Strategies and multi-annual plans for statistical activities. These plans should contain agreed, clear and prioritized financing plans. Pooled funding arrangements, which avoid duplications and minimize programmatic distortions, are encouraged.*

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The case studies found clear evidence of under-funding of statistical systems. In some cases governments were supporting annual running costs, but little else. Donors supported around half the core activities required to provide the information for many indicators. All six countries studies have a large funding gap for these core activities of between \$1million and \$3 million a year.

## **2. Better Management and Organization of Statistical Systems**

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**Recommendation 3:** *The development of statistical capacity should include organizational change and management development in statistical organizations. Statistical capacity building should not only be considered a matter of developing technical skills. Governments and the donor community may need to consider pay enhancement schemes for specialist skills, such as statistics, in programs of public sector reform. Public sector management development and organizational change programs should be extended to statistical offices wherever possible.*

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Donors have been funding various data collection activities, the provision of technical skills, and some specialized training. However, the systematic development of the national statistical system as a process of managing organizational change has not been well supported although a number of countries have sought to reform their statistical systems as part of civil service reform. Pay scales, incentives, and basic statistical education and training for statistical staff all capacity

## Final Draft

issues. One office in Cambodia, for instance, has been paying its professional staff less than \$1 per day. In such circumstances, it is difficult to expect excellence.

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**Recommendation 4:** *Countries should implement arrangements to ensure professional statistical standards across the entire statistical system. These may include common service agreements, protocols on statistical standards, and training and development activities.*

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The case studies found that capacity in statistical units in line ministries and in local administrative offices is often weak. Staff are poorly paid, poorly trained, and there are issues of motivation and staff retention. Arrangements for common standards, procedures and staff development for statistical staff across government are not in place, or are ineffective.

### **3. Better Use and Accessibility of Data**

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**Recommendation 5:** *Countries should seek to make full use of software that facilitates a central repository of official development statistics, such as DevInfo. Countries should also allocate technical staff to review data quality and availability. Donors should support such initiatives but full country ownership of the system is important*

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Software to maintain a central repository of development indicators, such as the DevInfo program of the UN, has made a big contribution to strengthening demand by improving access, availability, and potentially the quality of indicators and the metadata in countries where it has been introduced. It is important that such tools be fully supported with technical and statistical staff that are able to review data quality and develop and disseminate adequate metadata. This work must be fully embedded in the government statistical system, rather than being managed by international agencies. Ideally web-based, systems of this type should be accessible by users in all ministries and levels of the government administration, from the national to the local.

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**Recommendation 6:** *Provide training and skills development in data use and interpretation in poverty monitoring units and other key institutions. This will improve the connection between data producers and policymakers and will enable staff working in those units to articulate statistical demands and present quantitative information effectively for policy purposes.*

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To strengthen results-based management, the capacity to use statistical data needs to be developed in step with data supply. The nurturing of the real use of statistics by national governments is required for sustainable development of the supply of data. Much of the demand for statistics in the countries studied comes from donors and several of the case studies noted that poverty monitoring units, in particular, do not have the skills to adequately analyze and interpret statistical data. There is an urgent need to strengthen poverty monitoring units and other key institutions, through training and skills transfer, especially in the areas of developing indicators, making projections, setting targets, specifying their requirements, and using statistics.

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**Recommendation 7:** *Improve the availability and use of local and sub-national statistics obtained from administrative system and surveys. This may require training of statistical staff and data users, and improvements in the documentation of methodologies. If feasible, household surveys, such as CWIQ, may improve sub-national statistics, particularly where data obtained from administrative systems are weak. Communication between sectoral ministries, local offices and national offices may need to be improved.*

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## Final Draft

There is increasing demand for statistics and information at more local levels to inform the development process. International indicator monitoring systems, such as that used for the MDGs, were not designed for this purpose, and relevant indicators need to be developed, with common definitions and methodologies that are conveyed to local statistical units. Because of the large sample sizes needs, household surveys may not be able to produce local level data, although some surveys may be designed to provide district-level estimates (such as the Core Welfare Indicator Questionnaire (CWIQ)). Improvements in data obtained from administrative systems are needed. Local statistical systems must be strengthened, and coordination and communication within the statistical system must be improved.

### **4. Improvements in Data Collection and Indicator Estimation Methodology**

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**Recommendation 8:** *Countries should strengthen the wider statistical system and develop programs to improve record keeping and statistical capacity in line ministries and in local offices. This would help reduce over-dependence on surveys, produce sustainable capacity, and provide information for the MDGs that are currently missing. Donors should support these efforts. In addition to training staff, countries should incorporate appropriate incentives into their administrative systems to improve the reliability of data. Methods to systematically cross-validate data from administrative records with survey data and to independently audit data from administrative systems should be introduced.*

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The case studies reveal that more survey-based estimates of indicators are becoming available, but that estimation of indicators based on data collected through administrative systems is still very weak. Administrative systems in most countries studied have been unable to supply reliable information for indicators such as HIV prevalence, disease incidence, completion of primary education, and the environment. There are a number of difficulties. Staff involved often do not receive adequate training or support, coverage is often poor and quality control mechanisms are weak. General levels of service delivery capacity may be low, particularly in the poorest countries, and limited transport and communications infrastructure may also constrain data quality. Service delivery managers may misreport data due to the linkage with performance measurement and resource allocation, and external verification or auditing of data quality by independent agencies may be required.

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**Recommendation 9:** *Countries should adopt a statistical strategy that provides a rolling prioritized plan of key statistical activities over a 10-year cycle, to include the population census. Ideally, donors should be involved in the development of these strategies and be prepared to support activities over the 10-year cycle. This would help improve the security of funding, avoid quick fixes, and help countries develop better coordinated and more flexible systems.*

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More reliable methods of ensuring that censuses can be funded are necessary to maintain statistical infrastructure and to maintain the quality of all indicators. For many indicators, accurate population denominators are needed to produce estimates. Population data in most developing countries are derived from population censuses, which are also used to validate information derived from administrative data and to provide a sampling frame for many household surveys. The studies reveal that a regular decennial census is a fundamental requirement but that funding is often difficult to obtain since they are relatively expensive, and infrequent. One of the case study countries had not undertaken a census in 15 years; others are concerned that funding will not be available for their next census.

## Final Draft

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**Recommendation 10:** *Countries should take the lead and agree, publish and use common methodologies and standards for statistical activities and the compilation of indicator estimates. Donors and technical experts should respect these standards and the need for temporal comparability when delivering programs of technical assistance, particularly household surveys. This activity should involve all parts of the statistical system, including line ministries and user groups. Sector working committees, including users, could be developed to agree upon common standards and definitions.*

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The use of inconsistent methodologies and definitions constrains the use of many indicators, particularly where monitoring changes over time are important. Problems have been caused by inconsistent methodologies used in different surveys, and inconsistent recommendations of technical experts. Steps are needed to improve the comparability and standardization of survey methods and instruments in particular.

## Summary Report

### 1. Introduction

Under the umbrella of PARIS21, *PARtnership In Statistics for the 21st Century*, a Task Team was formed to examine ways of improving statistical support needed to monitor development goals, at both the national and international levels. This report summarizes case studies that were conducted in six countries—Bolivia, Burkina Faso, Cambodia, Malawi, Moldova, and Yemen—by small inter-agency teams between November 2003 and February 2004. The objectives of the case studies were to identify changes in national statistical systems that will improve the availability and use of data for monitoring development goals; and to document the capacity and current practices of national statistical systems in relation to key development indicators.

The countries were selected by reviewing a number of criteria, including geographical and income group coverage, and the availability of existing documents and studies. In addition, the country's Statistical Office needed to agree to the study, and be committed to the objectives of PARIS21, including the willingness to make improvements to existing systems.

The methodology used by each team included the review of relevant publications and documentation, consultation with key stakeholders in each country, and completion of the Statistical Capacity Building Indicators (SCBI) questionnaire by the Director of each statistical office.<sup>1</sup> The key themes of the case studies were the sources and methodologies for estimating key indicators; demand for indicators, particularly by policymakers; statistical capacity; and government and donor support.

### 2. The Status of Indicator Estimates

Accurate monitoring of the Millennium Development Goals (MDGs) and Poverty Reduction Strategies (PRS) relies on the availability of country data. This study focuses on the availability and quality of national data to produce reliable indicators both for the MDGs and for PRS monitoring and the national level. The study does not focus on the compilation of indicators by international agencies for the global monitoring of the MDGs; this is the focus of a previous study of the same PARIS21 Task Team.<sup>2</sup>

The six case studies cover a wide geographical range of countries, but the picture painted of the underlying statistical systems is remarkably similar. The systems are characterized by underfunding, heavy reliance on external support for household surveys and very weak administrative data systems. The basic demographic information needed to underpin the indicators is out of date in some countries, and the census funding needed is difficult to secure. Overall, there is a shortfall in funding for the core statistics required to provide information for economic management and monitoring the MDGs. At present, approximately two-thirds of the necessary funding for the next few years appears to be secured for the countries studies. The case studies all recommended that countries develop a sequenced program of statistical development, and that countries need to investigate ways to meet the financing gap.

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<sup>1</sup> SCBI was developed under the PARIS21 task team on SCBIs, led by the IMF. For more information about the indicators, visit the PARIS21 website <http://www.paris21.org>

<sup>2</sup> See the PARIS21 website. Findings from this study were presented to a conference on Improving Statistics for Measuring Development Outcomes, held in Washington, D.C. on June 4, 2003 (see <http://worldbank.org/data/intconference.html>) and to a conference of the UN Committee for the Coordination of Statistical Activities (CCSA) in Weisbaden on May 27-28, 2004.

## Final Draft

Since the late 1990s, the availability of national data has improved in all six countries studied. Master plans or strategic plans are now being developed in several countries to maintain a regular program of data collection for indicator and monitoring systems.

Nonetheless, study teams have been unable to identify more recent national sources for some indicators than those that exist in international databases. This implies that international agencies have been using modelling or estimation techniques on historic data series. This study does not provide information on the likely accuracy of the modelled data.<sup>3</sup>

The data series underlying the monitoring systems can be categorized into different types of statistical data collection processes, each feeding a particular set of indicators and following a common pattern in the six countries. The three main types are censuses; sample surveys; and administrative data systems, which are the by-product of administrative activities carried out by government departments. All the case study countries depended heavily on sample surveys for the bulk of indicator estimates. Even when administrative data systems exist that could provide this information, the quality is generally thought to be poor and in need of validation from surveys. As a short-term solution, surveys are an effective method of collecting information, but in the longer term the use of data from administrative systems will provide more responsive estimates. Ultimately, both will be needed.

No studies have been carried out to look at the relative cost-effectiveness of surveys versus administrative data systems. The studies experienced difficulties in costing the administratively-based components of monitoring systems, while the cost of household surveys is well known, and the methodologies tried and tested. Surveys are required to corroborate data from administrative sources, but a disproportionate amount of donor resources may have been allocated to relatively unsustainable surveys in past years. The Malawi case study points to capacity constraints in some areas of surveys analysis, and from the point of view of sustainability of funding, surveys will continue to be dependent on donor funding and be vulnerable to the changes in the aid program and erratic financing (see section 4). The Malawi study also points to the difficulties in improving data obtained from administrative systems which are constrained by weaknesses in infrastructure and general administrative capacity.

Whichever systems are appropriate, it is important that systems are not imposed by agencies simply to collect indicator estimates for international use; in line with the Rome Declaration,<sup>4</sup> resources should also be allocated to strengthen the countries' own monitoring systems. The strengthening of monitoring systems is part of good results-based management. It feeds the output and impact indicators used in many PRSs, and produces sub-national information increasingly being demanded.

The surveys that feed the indicator system are primarily living standard measurement study surveys (LSMS) or integrated household surveys (IHS), which provide poverty and living

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<sup>3</sup> There is one instance from Cambodia where the international data source on maternal mortality was found to use modelled data based on sources more outdated than the current national data. The more recent national data uses the sisterhood method, whereas the international estimates use the WHO model. Also in Cambodia, international data on poverty indicators were out of date for protocol reasons, because the World Bank and the Cambodian Government have not reached agreement on the poverty levels.

<sup>4</sup> "Rome Declaration on Harmonisation, Harmonising Donor Practices for Effective Aid Delivery." ISBN 92-64-19982-9, OECD 2003. On February 24-25, 2003, heads of multilateral and bilateral development institutions and representatives of the IMF and other multilaterals agreed to enhance harmonization of practices in financial institutions and partners countries to reduce transaction costs and to build upon countries' own systems. See <http://www.oecd.org/dataoecd/54/50/31451637.pdf>

## Final Draft

standards information.<sup>5</sup> The Demographic and Household Survey (DHS) or Multiple Indicators Clusters Survey (MICS) provide high-quality information for many of the health and demographic surveys, while censuses provides much of the demographic information, as well as the denominators for those indicators expressed as ratios. The census is the main reliable source of subnational level statistics in most of the countries studied.

Most countries in the studies conducted the LSMS surveys on a four- or five-year cycle, and the DHS on a five- or six-year cycle. Some case study countries had concerns about the programming of these surveys and the difficulties caused when the two surveys occur in the same year. In Cambodia, the National Health Survey, a localized version of the DHS, was not fully used as a source of official statistics, as the survey was not conducted by the central statistical agency, while in Bolivia, the MICS survey suffered a similar problem of not being recognized as an official source of statistics. These situations may be an obstacle to developing a permanent national capacity, developing standard definitions, and in agreeing upon the “official” estimate when several sources exist for the same indicator.

As monitoring systems mature, greater reliance is being placed on records kept by departments of health and education. If well run, these can provide annual data inexpensively and also provide the subnational information required for the monitoring of poverty reduction strategies. It is notable that Malawi has been strengthening its administrative data systems, after a considerable period of neglect, while the administrative data system in Moldova may be deteriorating, according to evidence provided by the case study report. One legacy of the former Soviet states is a relatively strong legacy of record keeping, and strengthening these existing administrative data systems might be an effective use of resources. Bolivia has had a huge demand for local statistics, with its 314 municipal government accounting units responsible for measuring and monitoring the results of the HIPC initiative. A pilot program to collect information at the local level is currently being implemented (MECOVI-municipal).

### **3. Indicators with Weak Underlying Statistical Systems**

#### **3.1 Problematic Indicators**

Analysis of the cases studies suggests that statisticians are having the most difficulty providing information for the following MDG indicators:

- Calorific intake (Indicator 5)
- School completion (Indicator 7)
- HIV/AIDS and contraceptive use (Indicators 18, 19)
- Orphans school attendance ratio (Indicator 20)
- Incidence and treatment of malaria (Indicators 21, 22)
- Environmental indicators (Indicators 25--29), for which very little data exists.

Most, if not all, of these problematic indicators require information from reasonably sophisticated administrative data systems. For the health indicators, information can be collected on malaria and HIV from demographic and health surveys. In some countries, these are accompanied by HIV testing. A more constant and reliable source, however, would be well managed health information

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<sup>5</sup> See another study conducted under the same PARIS21 Task Team titled “Household Surveys and the Millennium Development Goals” ([www.paris21.org](http://www.paris21.org)) for more information on the role of household surveys in providing data to monitor MDGs.

## Final Draft

systems. HIV data are difficult to collect from surveys, while malaria requires diagnosis at the time of the illness and medical knowledge, and this specialized medical expertise is difficult to find in those recruited for survey fieldwork.

An example from Burkina Faso illustrates the discrepancies in results that can be obtained from sentinel site data and a national survey such as the DHS.<sup>6</sup> In 2003, HIV prevalence estimates obtained from sentinel sites was 4.2 percent, while DHS obtained a rate of only 1.9 percent. Different explanations can be offered: the coverage of sentinel surveillance system tends to be urban rather than rural, while the coverage of the DHS is national. Malawi uses data from sentinel sites for this indicator and believes that data are reliable. However, the sample size is too small to enable calculation for the 15--24-year-old age group.

School completion and grade repetition are very complex issues and are difficult to measure in surveys. Most countries calculate this by a proxy method, which is to take the number of children in the final year, and to adjust this by the proportion of repeaters in the year. A system of some complexity is required to produce this information directly, by tracking the records of individual pupils. Some middle-income countries, such as South Africa, find this MDG indicator challenging and are unable to provide the information. As the Bolivia study reports, "The indicator of permanence until the eighth grade is not easily available."

Environmental statistics are relatively undeveloped in most of the six countries studied. Few of the case studies found examples of convincing information for these indicators. The exceptions are safe water sources and sanitation. Most of the case study countries had information on water and sanitation, but few collected it in a form that fits the indicator definition precisely. A considerable body of environmental statistics may be available in the case study countries, but they are drawn from a wide variety of national and international sources and for the most part lie outside the government statistical units examined by the case study teams. There is a need to integrate environmental statistics in national statistics and planning processes.

Of these statistically problematic indicators, calorific intake is not normally measured by data from administrative processes. In Bolivia, academic exercises have used the MECOVI (LSMS) data to produce estimates of the availability of food among Bolivian households, but the study stopped short of estimating the proportion of undernourished population. Malawi data relies on data produced by the Food and Agriculture Organization (FAO). The process of converting food consumption items into calories is not straightforward, and requires considerable technical skills and information on calorific conversion rates that are not widely available.

To determine where weaknesses lie and where priorities for improvements should be made, heads of statistical offices in the case study countries were asked to complete the Statistical Capacity Building Indicators (SCBI) Questionnaire in respect to several key statistical series. The possible scores for each attribute range from 1 (undeveloped) to 4 (highly developed). The results of the SCBI data-based indicators appear in appendix 1; a reduced version appears in table 1.

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<sup>6</sup> HIV sentinel surveillance involves repeated periodic HIV prevalence sampling in selected groups and in selected locations, with the purpose of monitoring trends of HIV infection over time. Sentinel HIV surveillance methods are designed to be an inexpensive way of providing data for rational planning, targeting, implementing, and monitoring of national AIDS program prevention activities. Health facilities are recommended as collection sites. From [http://www/wpro.who.int/themes/focuses/theme1/focus4/surveillancereport/sr-10/hiv\\_sentinel\\_in\\_Cam\\_1.htm](http://www/wpro.who.int/themes/focuses/theme1/focus4/surveillancereport/sr-10/hiv_sentinel_in_Cam_1.htm)

### 3.2 Statistical Capacity Building Indicators (SCBI) Questionnaire

With respect to data accuracy and reliability, health and education statistics were rated largely undeveloped (receiving scores at close to 2) while statistics for GDP, household income and expenditure, and population were rated as developed (with scores at close to 3). Both health and education statistics need development in the accessibility of results, according to the ratings. Education statistics appear to be methodologically weaker than the other series, while health statistics scored less well in the categories relating to statistical integrity (independence of statistical operations, and culture of professional ethics and standards). The results appear to confirm the assessments made by the study teams.

**Table 1. Summary Results, Indicators of Statistical Capacity in Selected Statistical Series**

(Mean score of the 3 to 5 case study countries depending on statistical series, with 1=underdeveloped, 2=largely undeveloped, 3=developed, and 4=highly developed)

	GDP	Population	Household income & expenditure	Education	Health
Prerequisites	2.4	2.8	2.2	2.4	2.2
Integrity	3.2	3.3	2.8	2.8	2.4
Methodological soundness	2.8	3.4	3.0	2.3	2.8
Accuracy and reliability	2.6	2.8	2.6	2.2	2.2
Accessibilty	2.7	2.9	2.5	2.1	2.0
No. of participating countries	5	5	3	4	4

*Note:* The table summarizes the ratings by heads of statistical offices in the case study countries.

*Source:* PARIS21 Country Case Study reports of Bolivia, Burkina Faso, Cambodia, Malawi, and Yemen.

Table 2 is an illustration taken from the Bolivian MDG country report and replicated in the case study report. The pattern is very similar to the overall assessment summarized in table 1. However, in the case of Bolivia, education statistics are rated higher, possibly because the statistical data are taken from the MICS and LSMS surveys, rather than being derived from government administrative sources. Health statistics, environmental statistics, and gender indicators are rated as weak.

**Table 2. Bolivian Capacities for Statistical Monitoring of MDGs**

MDG	Data collection	Quality of surveys information	Capacity for statistical monitoring	Capacity for statistical analysis	Use of statistics for public polices	Monitoring and evaluation mechanisms
Reduce poverty	GOOD	HIGH	GOOD	HIGH	GOOD	HIGH
Primary education	HIGH	GOOD	HIGH	HIGH	HIGH	GOOD
Gender equity	GOOD	GOOD	WEAK	WEAK	WEAK	WEAK
Infant mortality	GOOD	GOOD	GOOD	GOOD	WEAK	WEAK
Maternal health	WEAK	GOOD	WEAK	WEAK	GOOD	WEAK

## Final Draft

HIV/AIDS and other diseases	WEAK	WEAK	WEAK	WEAK	WEAK	WEAK
Environment sustainability	WEAK	WEAK	WEAK	GOOD	WEAK	GOOD

Note: Shaded box=Weak capability

Source: "Segundo Informe. Progreso de los Objetivos de Desarrollo del Milenio, Bolivia 2000."

### 3.3 Sources of Indicator Information

The six case studies have been used to produce a table of the typical data sources for each of the indicators, and the usual source of funding of the data source. Appendix 2 presents a picture of the sustainability of the indicators, and the extent to which countries are currently capable of monitoring MDGs 1--7 from their own resources.

There are 36 separate indicators in all (of the 32, two have sub-components). Of these, 17 are dependent primarily on externally-sponsored surveys; a further 5 rely on both government and external support (primarily administrative data verified by a DHS/MICS); and 13 are collected primarily by government processes. One remains unclear—the orphans schooling ratio—and is likely to depend on special studies. In some cases, the DHS surveys have been able to provide information, but full coverage of orphans in household surveys is difficult to obtain, as many reside in institutions or are excluded from concepts of usual household members.

This suggests that two-thirds of indicators are measured with support of surveys that are externally funded. This finding illustrates the vulnerability of the statistical system and monitoring systems to changes in external funding priorities.

## 4. Underlying Statistical Capacities

The case studies identified a number of methodological weaknesses in deriving indicator information.

### 4.1 Population Denominators

The first weakness relates to the denominators used to calculate ratios. These denominators are very important in the case of the health and education indicators, such as mortality rates and school enrollment ratios. The denominators required are population estimates, often based on one-year age group data. The population census is the only reliable source for these population estimates. Not only does the census provide vital population statistics and the basis for population projections, but it is part of the statistical infrastructure, providing the sampling frames on which surveys depend.

A number of the case study countries had not had a census for a considerable period of time. In Moldova, the population census is 15 years old, which means that important demographic changes have not been measured. There is a vital registration system, but there is a high degree of uncertainty around these records because of significant migration; since 1989, an estimated 600,000 Moldavians have left the country.

Almost all the case studies mentioned problems with denominators in calculating ratios. In Bolivia, where the last census was in 2002, yearly population estimates are not available. In Malawi, both the Ministries of Health and Education used their own population estimates to calculate indicator denominators. In some cases, this resulted in estimates showing more children being enrolled in schools than the central statistical agency estimates are in the total population. One cause is thought to be the result of poor age reporting in both the census and in school

## Final Draft

registers. The main reason for not using the central statistical office data was its inaccessibility, particularly in single-year age groups, and the difficulties in accounting for migration.

In Burkina Faso, the case study found that projections were made using a fixed growth rate, rather than by using any sophisticated modelling, leading to highly unreliable results. The census is currently eight years old, and the inter-census survey was cancelled because of lack of funding. The next census due in 2006 has attracted only a small proportion of the necessary funding. As the case study report notes, "Uncertainties in total and sub-national population estimates by sex and age are a significant source of uncertainties in estimating many important population-based indicators in education, health, in numbers of employed and unemployed, and in national aggregates of household income and consumption."

Other common causes of poor population denominators are inadequate methods of estimating births, internal and external migration, and possibly deaths as a result of the AIDS pandemic.<sup>7</sup> Only in Moldova was there any use of vital registration records to update census results, and these records were felt to be deteriorating in quality. In other countries, the case studies found very low coverage and quality of these systems. Malawi mentioned government attempts to strengthen vital registration but the team felt this would not be likely to offer an alternative data source for some time to come. In Bolivia, bureaucratic obstacles and onerous fees for obtaining birth and death certificates were blamed for under-registration; only about one-third (36 percent) of deaths and two-thirds (63 percent) of births were estimated to be registered. In all countries, rural populations must travel long distances to register and may not have the financial resources to do so. Given the infrequency of the census data and the importance of population data in many key indicators, it is important that a complementary system be strengthened to produce reliable population estimates in intermediate years.

### 4.2 Surveys

In Burkina Faso, surveys seem to be the main source of many of the indicators because of coverage issues associated with administrative sources and weak statistical capacity (human resources, infrastructure, network), especially at regional level. Surveys are extremely useful. However, their technical limitations (including higher sampling errors for responses such as causes of deaths, and limited scope for disaggregation) need to be understood, and the implication of heavy reliance on surveys to the development of other ongoing statistical production activities needs to be considered.

Not only were surveys heavily used, but survey estimates suffered from a lack of comparable methodologies. All the case studies mentioned this as a problem, with the exception of Bolivia,<sup>8</sup> where the MECOVI program has used standardized survey instruments over a number of years.<sup>8</sup> Some examples of good practice in survey design are given in appendix 3, which illustrates the operation of the MECOVI in Paraguay and an annualized survey program using a modular approach being used in several African countries. However such programs rely on continuity of

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<sup>7</sup> The UNFPA/PARIS21 International Expert Group Seminar on Population Censuses, held in Pretoria in November 2003, cited inadequate methods of estimating mortality in sub-Saharan Africa and recommended that countries carefully review the assumptions made on trends in the incidence and prevalence of HIV/AIDS included in population projections made by international organizations (Summary Report, p.10) [http://www.paris21.org/htm/task/census/report\\_pretoria\\_2003.pdf](http://www.paris21.org/htm/task/census/report_pretoria_2003.pdf)

<sup>8</sup> Bolivia joined the Regional Programme for Improvement of the Surveys and Measurement of Living Conditions (MECOVI) in 1999. This is a multi-donor regional program that has carried out annual LSMS type surveys annually in Bolivia since 1999. It has built up a sustainable human resource capability in the country to manage significant surveys from a management and technical point of view.

## Final Draft

external support. As with the Bolivian program, the availability of indicator information is jeopardized if the external support is withdrawn.

In Burkina Faso, the EP I and II (Priority Surveys) and the EBCVM (LSMS) were all conducted at different short periods of the year, so seasonality in consumption affected the results. Another example illustrated in box 1 shows the vast difference in results from six surveys, each using its own measurement method for the same variable. Differences of this magnitude render the results almost useless. As the Burkina Faso report notes, "Differences in basic concepts, definitions, and measurement methods across surveys are the most likely source of inconsistent results from different surveys for many key MDG and PRSP indicators." Another definition that was found to vary from survey to survey was literacy; the last grade completed in school was often used as a surrogate. "The inspection of survey questionnaires revealed that the definition of literacy varies across surveys and the results are not directly comparable."

The Malawi team reported that surveys change methodologies frequently, leading to results that are not comparable. Moreover, the fieldwork is entirely funded by donors, and significant external technical support is still required to calculate poverty estimates and other statistics.

The Cambodia study team noted the same problem: "There is usually more than one officially used estimate for the same indicator. This is exacerbated by the different methodologies and sampling schemes used for health surveys. These methodologies are heavily influenced by who is providing technical assistance." The Malawi study team reported: "Users regard the DHS as the most important and reliable source of health and inter-censal demographic data in Malawi." However the DHS is entirely dependent on external technical support and financing, and often leaves little local capacity in place, particularly when the contracted agencies undertaking the analysis are external to the central statistical offices and ministries of health.

### Box 1. Inconsistencies of Data Based on Different Data Sources

Different surveys can yield contradictory information on policy-relevant data such as anthropometric indices. This type of discrepancy is illustrated in the following table, which compares data from two surveys in Burkina Faso, the Demographic and Health Survey and EP (Priority Survey or Enquete Prioritaire). In 1998, height for age below 2 standard deviations for children under 5 was 36.8 percent, according to DHS. By contrast, it was 24.1 percent, according to EP II.

The trend over time can also differ across surveys. DHS indicates an increasing tendency of underweight children (weight for age) between 1994 and 1998, while EP suggests a different picture. Intensive post-survey analyses with field retesting could be used to identify differences in measurement methods that could account for such differences.

Per cent of children under 5 with low:	1993	1994	1998	1998	2003
	DHS	EP I	DHS	EP II	EBCVM
- height for age *	29.4	53.0	36.8	24.1	44.5
			[35.0-38.6]		
- weight for height *	13.3	18.0	13.2	18.2	19.0
			[11.7-14.6]		
- weight for age *	29.5	47.0	34.3	44.4	42.3
			[32.6-36.1]		

\* Below 2 standard deviations

# Final Draft

Source: PARIS21 Burkina Faso case study report.

The study team in Yemen also noted that changing survey methodologies also impair the comparability of indicator information. This problem is being recognized and the 2005 survey is being designed with a view to minimizing comparability problems with previous surveys.

The study teams found that most surveys in most countries were well conducted, particularly in countries that have benefited from externally-supported household survey programs that have continued over long periods, such as the MECOVI in Bolivia and the Household Living Conditions Survey in Burkina Faso. In Bolivia, the office was thought competent to carry out more complex operations, although in Cambodia, which has a more limited experience, surveys questionnaires were thought to be overly complex and too long. Problems were noted in Moldova, as many former Soviet countries have longstanding surveys that are not always conducted according to international norms and standards, and which require overhaul. The Moldova Household Budget Survey has a high non-response, and excludes the autonomous region of Transnistria. The sampling frame is outdated, based on a census that is 15 years old, and the credibility of the results suffers from having no published sampling errors. Moldova has a Multiple Indicators Clusters Survey (MICS), but this is not considered to be an official source of statistics, as it is not conducted as part of the Annual Statistical Program of Works.

### ***4.3 Weaknesses in Administrative Data Systems and Registers***

The case studies identified the wider statistical system, outside the central statistical office, as the weakest part of the system in all the countries studied. Staff were more poorly remunerated, had fewer opportunities for training, and were difficult to retain in posts, the case studies found. In Yemen, statistical staff in ministries were found to be largely untrained. Central statistical staff provided little supervision or validation of the results of their activities. Validation is also a problem in Moldova, which has a deteriorating administrative data system with an outdated legal basis for registration. This encourages misreporting; yet with no recent census, statisticians are unable to locate sources to validate data from administrative data systems, including vital registration data.

The Task Team concluded that results obtained from the administrative data systems were not robust in the countries studied. In Malawi, coverage of health events was not exhaustive. In Burkina Faso, religious schools were omitted. In Bolivia, private school information was based on estimates, as the private sector tended not to complete the paperwork. In Bolivia, information systems for health and education are linked to the operational arms for the service delivery of the relevant ministries, the study team noted. The possibility of linking allocating resources and rewards to development outcomes creates the *incentive compatibility problem*. The Malawi team noted a similar problem, reporting that both medical staff and school principals may be tempted to misreport information in the hope of gaining more resources.

Those responsible for recording vital events often have not received appropriate training, or are given few incentives for carrying out their duties. In rural areas of Malawi, the existing system of vital event registration operates through the village chief. Incentives for good record keeping are not clear and they are unlikely to be well informed about the medical causes of death. Similarly, data from the Ministry of Health administrative systems have quality problems. Information is filled out by medical staff, and there are limited resources for statistical staff in the statistical unit of the Ministry of Health to do quality checks and follow-ups. The Malawi team also reported difficulties in recruiting and retaining staff in district statistical units.

## Final Draft

Burkina Faso is experiencing similar difficulties, the case study suggests. Many registration offices are inaccessible, and in any case there is no incentive to register births or deaths. These factors, coupled with a high illiteracy rate, result in very low levels of registration.

Yet administrative data systems, if well kept, can have advantages. In particular, they are a constant source of local data and statistics. Poverty Reduction Strategy programs increasingly require monitoring at local levels, and surveys are unable to provide the required information. For example, in Burkina Faso, the Priority Action Programme will link concrete actions to 120 indicators with input and intermediate indicators, many of which will have to come from administrative sources. In Malawi, the new system of district-level data collection and reporting developed under the Decentralization Secretariat combines data from both survey and administrative sources. In Bolivia, 134 municipalities are responsible for monitoring HIPC resources. These examples illustrate why surveys must be complemented with administrative data systems for effective PRS monitoring. Considerable resources have been put into surveys--- but little support, as yet, has been extended to countries' own administrative systems. It is hoped that the follow up to the Rome Declaration will encourage the strengthening of such systems.

### **5. Capacity of Statistical Systems**

Many countries are in the process of reforming their statistical laws and improving statistical planning processes. Most have a Statistics Council that manages user- producer relations. However, many of these councils are not functioning. Alternative mechanisms may need to be sought to prioritize user needs and to provide feedback to users. Some studies mentioned stakeholder workshops and technical user-producer groups as having been successful in determining user priorities. In any event, sustainable consultation methods tied in with PRS processes will be required to keep statistical output relevant.

Moldova is in the process of changing its statistical law and developing a multi-annual survey plan. The new law gives the Central Statistical Office the responsibility of coordinating the statistical system by determining the methodologies to be used. An annual program of work listing all activities and precise time frames is prepared after consultation with all central government institutions. The work program takes into account the priorities set in the Multi-Annual Integrated Statistical Programme (MISP). The MISP for 2004-07 is currently under preparation.

In Burkina Faso, coordination in the statistical system is undertaken by a National Statistical Coordination Council. The Council was established in 1997; however, it has not been functioning as mandated. The National Observatory for Poverty and Sustainable Development (ONAPAD) has partly taken on the role of evaluating and advising on methodologies and data quality for the PRSP/MDG indicators. It has paid special attention to compliance with international definitions and methodologies. The study team noted that a similar practice is being adopted system-wide, in addition to improving planning and prioritizing of activities in the statistical system.

Cambodia has made major improvements in the last 10 years, particularly in the areas of management, training, dissemination, and service to users, the study team found. Other improvements are still needed, especially in the areas of poverty, social, and financial statistics. The Cambodia report notes that senior staff in the statistical office must spend a considerable amount of time working with external partners to obtain funding for new work. The report notes that the Cambodia government would be unlikely to accept a loan for statistical improvement, but has accepted a UNDP-backed \$1.4 million project to integrate the statistical system and improve capacity in the system, called Capacity Development in National Statistical System.

## Final Draft

In Malawi, the central statistical office has a small core of relatively well-trained staff, guided by a statistics plan for 2002-06. The statistical Common Service was recently revived; this promises improved management of statistical personnel across government, and better knowledge-sharing between different ministries and institutions involved in the production of statistical data, the study team noted.

In Bolivia, the law determining the statistical system established the National Statistical Institute (INE) and the National Council for Statistics, in addition to several Technical Committees for Statistical Coordination. However, the study team found that the Council and Committees have not worked effectively since their creation in 1996. Line ministries, apart from those representing Planning and Coordination, Defence, and Finance, are not represented on the Council. The National Statistical Institute, instead, coordinates the statistical activities of all organizations producing official statistics, and is entitled to dictate methodological norms for all of them. A new law is currently under preparation, and at the end of 2003 a government memorandum for the Institutional Reform of the Public Service included INE as one of the institutions to be reformed. The Revision of the Poverty Reduction Strategy Paper for 2004--07 identifies proposals to strengthen the statistical system; INE is currently preparing a program for strengthening the whole statistical system.

### ***5.1 Human Resource Capacity***

Many of the case studies noted serious human resource constraints in the statistical systems under review, including training, remuneration, and wastage as trained staff leave the government service for more lucrative jobs in the private, international, or NGO sectors. In many African countries the death of staff from HIV is also a serious problem, but the case study reports did not specifically mention this.

Recruitment and training is a recurring problem, the studies noted. In Malawi, relatively few specialists in statistics graduate from the University of Malawi, and an in-service training program is adopted to provide graduates in numerate disciplines with the relevant skills. The Malawi Central Statistics Office Strategic Plan has an associated training plan. However, funds are hard to identify for staff development and training, both locally and internationally, and the plan cannot be fully implemented. At present, there is little involvement of staff from line ministries in staff training programs, although the new common service agreement offers the possibility of staff transfers to benefit from training provided in the central statistical office. There is increasing need for qualified statisticians in line ministries and in district statistical units, where turnover appears to be higher than in the central administration.

In Moldova, staffing levels have decreased by 16 percent in the past five years because of cuts in the Territorial Statistical Offices. Wage levels are not competitive when compared with the private sector; the average salary is \$73 per month, and there is no provision for salary increases or incentive bonuses for qualified specialist staff. Staff employed in data processing earn much less and do not have public servant status. Those working in local offices also earn much less than headquarters staff: on average, \$56, compared with \$81 per month for headquarters' staff. Moldova cannot attract sampling specialists on the salaries paid, and thus cannot estimate sampling errors. This impairs data quality and the reliability of the output of the statistical system.

In Burkina Faso, staffing levels have remained constant in the last five years, although since 1995 about 25 percent of staff have been lost. The number of technical staff has declined by around 40 percent in the last eight years, while non-technical staff have grown in number. This is mainly

## Final Draft

due to staff leaving for more remunerative jobs, recruitment freezes, cessation of training for technical staff, deaths, and retirement. At the level of sector ministries, there are very few statisticians responsible for statistics. In the health, education, and agricultural sectors, the study team found four statistical staff in all, while for the regional offices there are generally no qualified staff. The ratio of statisticians to non-statisticians is around 11 percent in agencies outside the central statistical office---insufficient to produce technically sound statistical outputs, the report concludes. The report recommends that minimum training be assured for all statistical staff engaged in data collection and processing at all geographic levels of the administration.

### **Box 2. Severely Underpaid Statistical Staff in Cambodia**

At present, most statistical staff in Cambodia (many of them with Bachelor or Masters degrees) are paid only about \$20 a month---a small fraction of the approximately \$150 per month needed to live reasonably in Phnom Penh.

The low salaries force many staff to hold second or third jobs, which diverts them from spending time at the National Institute of Statistics (NIS) or in the line ministries doing statistical work. This severely restricts the ability of the NIS and the national statistical system to carry out their core functions.

In Cambodia, the staff of the statistical system are particularly badly paid (box 2). Staff must take on second or third jobs to survive---which severely limits the capacity of the national statistical system. Compared to other countries, the Cambodian system appears to have a high number of staff in total. There may be need to increase salaries and reduce staffing levels. The training of statistical staff is a priority that the government has been unable to fund. At the national level, it will now be included in the UNDP capacity building program. However, more training is required at the local level, especially of those responsible for collecting and processing administrative data at the commune levels. Little training or resources are currently being directed to this level of government.

**Table 3. Numbers and Average Pay of Staff in Statistical Offices**

Country	Central Statistical Office staff	Ministry staff	Total staff	Average monthly pay
Bolivia	221	158	379	\$371
Burkina Faso	78	4	82	---
Cambodia	1087	154	1241	\$20
Malawi	586	113	699	\$56
Moldova	950	-0-	950	\$73
Yemen	700	-0-	700	\$80

---Not available.

*Note:* Information was not provided in most studies and none was compatible; For Bolivia, the average monthly of statistical staff of the CSO and Ministries were \$404 and \$325, respectively.

# Final Draft

*Source:* PARIS21 Task Team Country Case Studies.

## ***5.2 Data Processing***

The countries under study also faced capacity difficulties in data processing, particularly in ministerial and local statistical units. For many countries, limited web capacity restricted dissemination of statistical data.

In Moldova, processing is carried out by a centralized computer center shared with the Ministry of Finance. Capacity has been improved with external support since 2000, in the form of training, software, and hardware acquisition. However salaries are uncompetitive and thus staff attrition rates are high as personnel leave for the private sector. Staff that remain have outdated skills and many still use obsolete software. Moreover, the computer center has low-capacity Internet connections.

In Burkina Faso, much data is still manually processed in offices outside the capital city. Even at headquarters level only a third of statisticians are using a computer less than three years old, and none of the computers is networked. Low-capacity Internet facilities also impair dissemination.

Cambodia also has poor Internet facilities for dissemination, although the DevInfo initiative has improved dissemination in both Cambodia and Malawi. In Cambodia, few resources are put into the collection and processing of administrative data, and external support is poorly coordinated. This piecemeal approach reduces the effectiveness of the overall system. The report recommends that all administrative data systems be reviewed with a view to concentrating all resources in a few key areas.

## ***5.3 Capacity to Use Data for Indicators and Analysis***

The capacity to use data for indicators and analysis has improved in many countries around the world with the advent of Poverty Reduction Strategy processes. However, many countries report under-capacity and the need to stimulate national demand for indicators and statistical data. Some countries report that the speed with which the PRS has been implemented has not enabled countries to develop truly country-owned monitoring systems, and that many are now beginning to catch up. Countries require additional training and support in developing indicator system, setting targets, and trend analysis. One particular skill that impacts on the relevance and quality of the information produced by statistical systems is the ability to specify data requirements to statisticians, to influence survey design and set statistical priorities.

In Moldova, capacity for analysis increased after 1997 with the assistance of multilateral agencies. However much of the analytical capacity still relies on external support. The case study report highlights particular weaknesses in the assessment of trends toward established goals, because of the lack of time series data.

Aside from centralized poverty monitoring units, sector ministries also require capacity to collect, analyze, and interpret statistical data for policy purposes. The six case studies identified this area as a particular weakness. Most of the six countries possess statistical units in health and education departments, but most have been unable to attract and retain staff of the necessary caliber. Poor pay and working conditions, reflecting public sector pay policies, have been responsible. While retention packages for statistical staff would be difficult to implement, measures such as including statistical staff from ministries in central statistical office training programs would be advantageous. The studies noted in Burkina Faso, Cambodia, Malawi, and Yemen, statistical staff

## Final Draft

outside the CSO headquarters were unable to access such programs adequately, although this may be remedied in Malawi by the reintroduction of a common service agreement for all statisticians in government. A unified statistical service might also be helpful in retaining staff. Sector ministries are often less attractive to statistical staff, who fail to benefit from training, field allowances, and opportunities for promotion. A unified statistical system where staff could rotate through departments would offer some of the benefits to ministry statisticians. Opportunities for training and advancement are generally highly valued in developing countries and should be included in any proposals for retention.

In Cambodia, the Ministry of Health may be stronger than the central office. The study team found that the ministry does not have confidence in the ability of the NIS to conduct a health survey, and it is conducting its own without reference to the central office. This is occurring despite the difficulties in attracting and retaining staff. The report suggests that this situation may be exacerbated by external support for the survey within the Ministry of Health, rather than the central statistical agency. As this example illustrates, piecemeal external support for specific sectors is unhelpful in building a strong, sequenced, and coordinated national statistical system.

### **6. Demand for Statistics**

Most of the case studies describe demand as growing from a relatively weak base. The key driver of demand for statistics to monitor indicators is the PRS process, and to an extent, the MDG processes. In Malawi, the team found clear and increasing demand arising from the MDG and PRSP reporting processes. In Moldova, demand for survey data is high in order to target social assistance programs, the case study found. However, the culture of using aggregated statistical data for planning and program monitoring purposes is not well developed, with users still demanding information from individual enterprises. Burkina Faso has very weak demand for statistics, the case study noted, and demand is mostly donor-driven. The Cambodia team found that the weak linkages between PRS and statistical processes hinder the development of a unified indicator system. Yemen now has a centralized poverty and information monitoring unit, and information from the central statistical office and from PRS units in ministries is now being fed into the centralized database; however, there are concerns about sustainability, as this unit is entirely funded by donors.

Some countries have made progress in improving information access in the form of websites and CDs. Malawi, for instance, has a simple but well designed website which has dramatically increased accessibility and use of key datasets. Microdata from key surveys have been released on CDs to researchers and other users. In Yemen, however, publications are mostly in hard copy, and these are distributed to key stakeholders and development partners. Electronic versions are scarce and no external website exists for dissemination.

Many statistical offices do have special customer relations departments that can supply data to meet users' particular requirements, but few operate along the "datashop" model and access to statistics at local government offices is generally rather poor. Dissemination workshops are used by many countries, but in some they are in their infancy. A number of countries mentioned that financial constraints have sometimes prevented the statistical office from supplying its users with information and publications.

In Malawi, the PRSP process has clearly increased demand, and improvements in the quality of the indicators have been noted. However the 2003 MPRSP contained very few outcome indicators, although the new Monitoring and Evaluation Master Plan within the PRSP framework has a new and more manageable list of indicators, including outcome indicators. Even so, MDG

## Final Draft

indicators require localizing, definitions need streamlining, and work needs to be carried out to both cost the indicators and to ensure that those selected have the desired degree of sensitivity to changes. There are particular issues associated with regularity of reporting of statistics and ensuring that the collection and publication cycle corresponds with the MPRSP annual review processes.

Burkina Faso has a weak tradition of using data for policymaking, the case study found. “This may be attributable to the fact that the culture of holding policymakers accountable for their policies and actions is not widespread. In a country like Burkina Faso where the majority of the population is illiterate and accessibility to the media by a large population is limited, policymakers are less motivated to support quantitative monitoring and evaluation as integral parts of management and civil society is less able to demand and use such information for popular information and advocacy, thus leading to low demand for data.”

Yet while local demand is weak in Burkina Faso, demand from development partners is strong. “The statistical agencies visited during the fieldwork almost unanimously indicated that the main demand for their data comes from donors. An example is the new European Union scheme of performance-based variable grants, whose amount is tied to a set of development performance indicators. This lopsided demand has been changing, however, as the result-oriented practice required by the initiatives such as PRSP, HIPC, and MDG become more and more integrated in the country's political and public sector management processes.”

The Burkina Faso report also criticizes the data producers for not adhering to timetables for releases, and for not supplying supporting metadata. Users often find statistics difficult to access due to scarcity of supporting methodological documentation. The report mentions that funding constraints limit data availability and particularly publication of information. The report cites the example of Education Statistical Yearbooks, where the number of copies produced is limited by funding and most copies are sent to development partners rather than national stakeholders. In a similar way, user-producer consultations and feedback are limited to donor-funded activities, with the National Statistical Coordinating Council not functioning as mandated. Donor agencies are an important component of demand, but are not the only one. Local demand requires strengthening in order to build capacity to use and demand information in appropriate ways.

The Cambodia report mentions that donors “for their part, often lack the incentive to invest in statistics except to provide assessments related to their particular projects, which are usually sector-specific.” As the report points out, this leads to an uncoordinated and inefficient statistical system.

Statistics can be confusing for users, with different estimates often published for the same variable without comment or reasons. This arises from two basic problems. First, many estimates are derived from administrative sources such as education or health administrative data systems. These estimates are rarely checked against survey data obtained from the central statistical office, and different basic concepts and definitions are used. In Malawi, for instance, even though the Ministry of Health has invested considerably in clarifying definitions and concepts, these differ on occasion from those used by the DHS. Second, ministries often use their own population estimates as denominators because the vital registration systems in the case study countries are undeveloped. The census data may be seriously out of date or the modelling processes may have insufficient information to draw on about mortality and migration.

One development that has dramatically improved access to and the comparability of results is the MASEDA centralized indicator database in Malawi. Based on ChildInfo, this database became

## Final Draft

operational in 2002 and has made a significant impact on improving access to key indicators.<sup>9</sup> It was described in the Malawi report as a “breakthrough in developing a coherent national statistical system.” MASEDA is expected to be utilized at district level, but this will be an ambitious project requiring a much greater degree of harmonization at the local level. Cambodia is also making good use of this initiative in disseminating information.

A factor that inhibits the use of statistics is the limited statistical skills in user ministries. In some countries, this includes the department responsible for poverty monitoring, but it is also a very significant problem in social sector ministries. In Cambodia, staff in the ministerial units were described as generally having no statistical background. Not only does this paucity of statistical skills limit the use of existing statistics, but it also restricts the ability to articulate needs for new statistical information. For instance, the study team found that Cambodian ministries were ill-equipped to make demands to the national statistical office for new data based on arising needs at the ministries for monitoring.

The time scales of development partners may also be too fast for countries to feel fully in control of the process. As a result, countries may abandon responsibility for the indicators used. The Cambodia report mentions that many of the indicators used in the PRS are not those that ministries would actually choose for their policymaking. “In these circumstances, a sustainable statistical capacity building process of Cambodia has to deal from both the user and the producer side,” the report notes. It goes on to recommend that “Both improvements should be sequenced: that is, data analysis mechanism as well as data production system should, only gradually and in tandem, aim for a more sophisticated and complete levels.”

In Cambodia the identification of a set of indicators linked to policy actions is described as a weak link in the institutional framework, and is required both to rationalize the large number of indicator in the PRS and the CMDG and to build accountability into ministerial policy actions.

One largely unmet demand is the increasing need for disaggregated data, both for analysis at the district level and for deeper analysis of crosscutting issues. At the municipal level, statistical data are limited to census data and information from administrative systems. Poverty mapping is also useful in this context, but updates are reliant on new census data. CWIQ survey results are increasingly becoming available at local government levels, but data are extremely limited. Not only are local data scarce, but the capacity to use information at local level is limited. In many parts of Latin America, local staff change with each new mayoral election. Very few local authorities have staff with statistical skills.

## **7. Funding**

The case studies attempted to determine the costs of running a statistical system to provide the core information needed for indicators, and to ascertain the shortfall in funding to achieve this goal. “Core” here is defined as statistical activities necessary to produce the key economic and social indicators covered in the MDGs, including national accounts, labor surveys, financial sector surveys, population and agricultural censuses, household surveys, monitoring information system for education and health---as well as capacity building for the country to conduct basic

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<sup>9</sup> ChildInfo was developed by UNICEF, and improved together with other UN agencies to include all the MDG indicators as DevInfo. The DevInfo package has been recommended by the African Union for use in all countries on the continent. The first country to make full use of the new system was Tanzania, but many others have now adopted it.

## Final Draft

statistical activities. Only four of the six case studies obtained sufficient information for this analysis (Burkina Faso, Cambodia, Malawi, and Moldova). Thus the costs given in this section should be considered illustrative. Precise comparisons between countries also proved to be difficult. For a full comparison, a standardized method of calculating the costs of the core, with a detailed methodology, would be necessary and this was considered beyond the scope and resources of the Task Team.

As noted earlier, the statistics required for the MDGs arise largely from surveys such as the DHS or LSMS, which are traditionally donor-funded. The four case study countries that were able to provide good financial information suggest that regular surveys such as the LSMS, DHS, and MICS cost each country around \$900,000 a year. The census costs between \$1 million and \$2.5 million a year, largely depending on the size of the country. Overall, including these costs, the cost of providing the core statistics to monitor the MDGs per country is around \$4 million a year.

The results yield a surprisingly consistent picture of the costs of running a statistical system. The average annual costs were allocated to three basic categories: recurrent costs, which are generally the costs of salaries and office expenses; core costs, which are the costs over and above the recurrent costs of collecting, processing, and disseminating the statistical data required to produce key economic and social indicators; and the costs of providing additional statistics.

The recurrent costs were not always fully documented in the case studies, but appear to be in the region of \$1.5 million a year.<sup>10</sup> Governments are paying for statistical staff and office costs---and for very little else. Extra funding may be required to properly remunerate and retain staff, to provide for staff training, and to ensure that dissemination and publication meet the needs of users. The case studies did not assess the cost of these additional elements, but additional costs should be expected in the future if statistical systems are to develop to provide the information required.

In addition to recurrent costs, funds are required for data collection, processing, and analysis. The amount required for basic economic management and for monitoring the MDGs was estimated in the case studies to be between \$1 million to \$5 million, depending on the country's circumstances (as shown in table 4). The case study countries were reliant on external funding for a high proportion of these data production costs. Donors currently provide between a quarter and half of the estimated costs---leaving between 25 and 70 percent of the amount required with no secure funding sources. Overall, around two-thirds of the recurrent and core costs are funded. However, more is required both to build staff capacity and to collect all the statistics required to monitor the MDGs and to promote sound economic management.

To produce all the statistics required to satisfy stakeholders, and to fund the development of statistical infrastructure such as registers, training, and dissemination media, the cost was estimated to be in the order of \$4 million to \$7 million. Most of the case studies noted that statistical plans from which these annualized costs were drawn include duplications and inefficiencies. Paring these away, it can be concluded that \$5 million to \$6 million is needed to provide all the statistics required for countries similar in size to those studied.

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<sup>10</sup> Some case studies appeared to include core economic statistics and basic recurrent costs. Others may not have included the full costs of these. Agricultural statistics were sometimes included in the core, and sometimes not. While there is no specific indicator related to rural livelihoods, it is such an important part of most developing countries economies that most would include agriculture as a core statistic.

**Table 4. Estimated Costs of Statistical Activities to Meet Monitoring Needs**

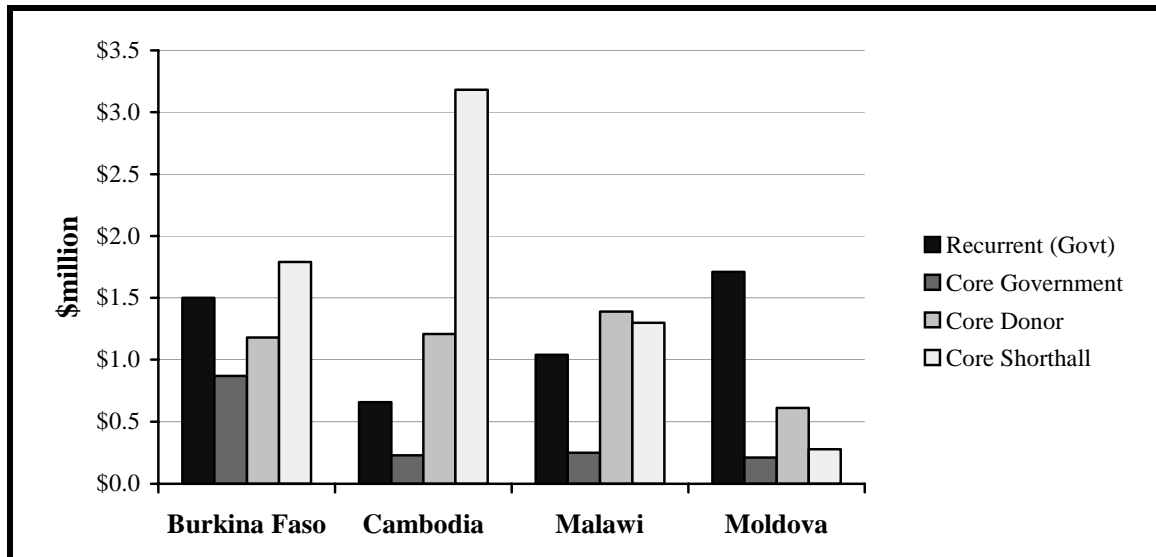
Costs (per year)	Burkina Faso	Cambodia	Malawi	Moldova
<b>Recurrent costs (\$million)</b>	<b>1.5</b>	<b>0.7</b>	<b>1.0</b>	<b>1.7</b>
<b>Core costs (\$million)</b>	<b>3.8</b>	<b>4.6</b>	<b>2.9</b>	<b>1.1</b>
% core government-funded	23%	5%	9%	19%
% core donor-funded	31%	26%	47%	55%
% core not funded	47%	69%	44%	25%
<b>Costs of core and recurrent (\$million)</b>	<b>5.3</b>	<b>5.3</b>	<b>3.0</b>	<b>2.8</b>
Recurrent costs as percent of core and recurrent costs	28%	13%	26%	61%
<b>Costs of additional activities (\$million)</b>	<b>1.0</b>	<b>2.5</b>	<b>3.0</b>	<b>1.9</b>
% extra government-funded	15%	13%	6%	2%
% extra donor-funded	13%	4%	31%	11%
% extra not funded	73%	83%	63%	87%
<b>Total costs (\$million)</b>	<b>6.3</b>	<b>7.8</b>	<b>7.0</b>	<b>4.7</b>
Population (million)	11.8	12.5	10.7	4.3
<b>Costs per capita (\$)</b>	<b>0.53</b>	<b>0.62</b>	<b>0.66</b>	<b>1.09</b>

Source: PARIS21 Task Team Country Case Studies.

In the four countries for which good financial information was available, government contributions have been limited, beyond the costs of salaries and other recurrent costs. Governments' contribution to the costs of the core statistical activities, including recurrent costs, have ranged from 61 percent in the case of Moldova, to just 13 percent in Cambodia. The low proportion for Cambodia may be partly explained by the very low salaries paid to staff, but the contribution to the non-recurrent costs of providing core statistics has also been lowest, at just 5 percent. The Government of Malawi has made a much higher contribution to recurrent costs (staffing, training, and office running costs) but the share allocated to core statistical activities has been just 9 percent. Moldova has made the highest government contribution to core statistics, but the estimated cost of providing the core statistics has also been much lower. To illustrate the degree of dependency on donor funds for financing non-recurrent core activities, donors fund half the total costs in two of the countries studied: Moldova and Malawi. The relative contribution of the government compared to external sources is often also strikingly low. In Cambodia and Malawi, government funding is only about a fifth the size of donor contributions.

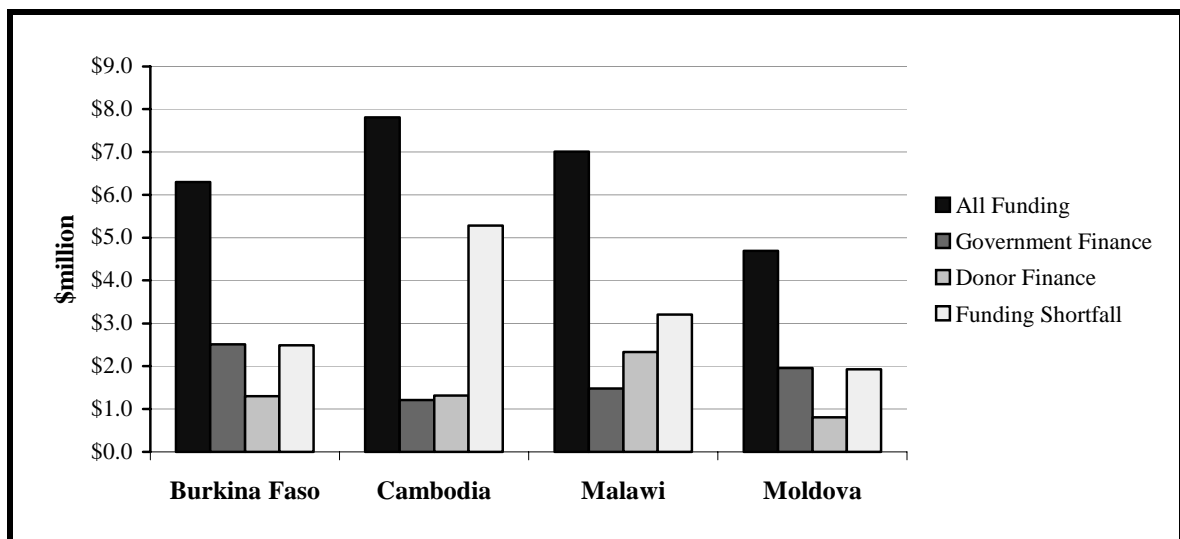
Donors have been funding between \$1 million and \$1.5 million of the core statistics a year, a little above the amount allocated to fund regular surveys. The exception is Moldova, where the amount of donor funding has been significantly smaller. The unmet funding needs for core statistics have been relatively small for Moldova, but between \$1 million and \$2 million for Malawi and Burkina Faso, and even higher--- \$3 million--- for Cambodia, perhaps partly reflecting the low government contribution.

**Figure 1. Sources of Funding for Core Indicator-related Statistical Activities**



Source: PARIS21 Task Team Country Case Studies.

**Figure 2. Sources of Funding for All Planned Statistical Activities**



Source: PARIS21 Task Team Country Case Studies.

Most countries with statistical plans specified a range of statistics required by country stakeholders and planned for future years. Moldova had the most modest plans, with the full system costing just under \$5 million, while Cambodia's system was expected to cost almost \$8 million, mostly due to the difference in the size of the country. Most of these "additional"

## Final Draft

statistics had little funding committed; around 70 percent of the additional statistical series were unfunded, reflecting funding prioritization, which is closely aligned to making available the information required by the MDGs.

In summary, each country requires around \$4 million to \$5 million each year, including recurrent costs, to provide the core statistics required. Around half the amount required for core statistics has no identified funding source.

All the countries studied cited instability and uncertainty over funding for statistical systems as a problem. As the Burkina Faso report notes, external funding could also affect the incentive mechanism of the national system in ways that are not beneficial in the long term: “Monetary incentives for fieldwork that lure staff away from their regular operations should be reduced, and incentives introduced for producing essential outputs, such as national accounts in a timely manner.” The case studies call for the donor community to support a comprehensive program of official statistics, instead of funding one-off surveys, thereby ensuring standardization and harmonization of the methodology appropriated by the various organizations in the statistical system. The Cambodia and Malawi reports recommend pooled funding among donors to support the medium- to long-term strategic plans. The Cambodia report also suggests limiting the use of consultants and focusing on training and development of local staff for the donor support to have a lasting effect on the country. Most of the studies recommend following strategic plans oriented to the Poverty Reduction Strategies, along with integrated institutional building programs. This would help avoid financing gaps and a patchwork approach to the satisfaction of international needs by the many donors. These plans must take into account the high costs of financing a population census every decade. Plans also should be realistic based on the existing capacity of the country’s statistical system and should be examined against alternatives. In Cambodia, for example, the statistical system is currently reliant on long and unwieldy household surveys. The report therefore recommends that these be better coordinated, especially with administrative data systems.

As the Bolivian report points out, it is important to acknowledge the necessity to translate the need for statistical information into a concrete, time-bound, and resourced plan of actions. Unless a longer-term funding program for statistical systems is agreed upon with development partners, the problem of postponement of censuses and uncertainty in the statistical system will continue. An example is the prospect for the future MECOVI program. While the Bolivian INE has benefited from international cooperation projects, this close association has produced a dependency. The current MECOVI program is due to expire in October 2004, when financial support from donors will end. With the Government of Bolivia not showing serious signs of fully funding the MECOVI survey program from the national treasury, there could be no program for monitoring poverty and living conditions in future years. A long-term strategy for statistical development is urgently called for to avoid this kind of crisis in the statistical information required to monitor the MDGs.

**Appendix 1. Indicators of Statistical Capacity – Summary**

1= Undeveloped, 2= Largely Undeveloped, 3= Developed, 4=Highly developed

<b>Attributes</b>	<b>GDP</b>	<b>Popula- -tion</b>	<b>Hhd inc. &amp; exp.</b>	<b>Educa- -tion</b>	<b>Health</b>
<i>Number of responding countries</i>	5	5	3	4	4
<b>0. Prerequisites</b>					
0.1 Collection of information and preservation of confidentiality guaranteed by law and effective	3.0	3.4	2.7	2.5	2.3
0.2 Effective coordination of statistics	2.2	2.8	2.3	2.5	1.8
0.3 Staff level and expertise adequacy	2.6	3.2	2.7	2.0	2.3
0.4 Buildings and equipment adequacy	2.6	3.0	2.0	2.5	2.8
0.5 Planning, monitoring and evaluation measures implemented	2.0	2.2	2.0	2.3	2.3
0.6 Organizational focus on quality	2.0	2.2	1.7	2.5	1.8
	<b>2.4</b>	<b>2.8</b>	<b>2.2</b>	<b>2.4</b>	<b>2.2</b>
<b>1. Integrity</b>					
1.1 Independence of statistical operations	3.4	3.4	2.7	3.3	2.5
1.2 Culture of professional and ethical standards	3.0	3.2	3.0	2.3	2.3
	<b>3.2</b>	<b>3.3</b>	<b>2.9</b>	<b>2.8</b>	<b>2.4</b>
<b>2. Methodological soundness</b>					
2.1 International/regional standards implemented	2.8	3.4	3.0	2.3	2.8
	<b>2.8</b>	<b>3.4</b>	<b>3.0</b>	<b>2.3</b>	<b>2.8</b>
<b>3. Accuracy and reliability</b>					
3.1 Source data adequacy	2.4	3.4	2.7	2.0	2.5
3.2 Response monitoring	2.4	3.0	2.7	2.0	2.0
3.3 Validation of administrative data	2.8	2.4	2.0	3.0	2.5
3.4 Validation of intermediate and final outputs	2.6	2.4	3.0	1.8	1.8
	<b>2.6</b>	<b>2.8</b>	<b>2.6</b>	<b>2.2</b>	<b>2.2</b>
<b>4. Serviceability</b>					
4.1 User consultation	3.0	3.2	3.3	3.0	2.5
4.2 Timeliness of statistical outputs	2.6	2.6	1.7	2.3	2.3
4.3 Periodicity of statistical outputs	2.8	3.2	2.0	2.8	2.3
	<b>2.8</b>	<b>3.0</b>	<b>2.3</b>	<b>2.7</b>	<b>2.4</b>
<b>5. Accessibility</b>					
5.1 Effectiveness of dissemination	2.8	3.0	2.7	2.3	2.3
5.2 Updated metadata	2.6	2.8	2.3	2.0	1.8
	<b>2.7</b>	<b>2.9</b>	<b>2.5</b>	<b>2.2</b>	<b>2.1</b>

*Source:* PARIS 21 Country Case Studies. Ranking based on the average scores of SCBIs of Bolivia, Burkina Faso, Cambodia, Malawi, and Yemen.

**Appendix 2. Sources of Indicator Data from Case Studies**

<i>Indicator and component</i>	<i>Typical instrument</i>	<i>Typical funding source</i>
<i>Poverty and hunger</i>		
1. National poverty rate	Living Standards (LS) or Integrated Survey (IS)	Donor
2. Poverty gap ratio	LS or IS	Donor
3. Share of poorest quintile in national consumption	LS or IS	Donor
4. Underweight children	Demographic and Health Survey* (DHS*)	Donor
5. Proportion of population below minimum level of dietary energy consumption	Living Standards or Integrated Survey, calculated by international organizations	Donor
<i>Universal primary education</i>		
6. Net enrollment ratio in primary education	Ministry of Education administrative data systems	Government
7A. Proportion of pupils starting grade 1 who reach grade 5	Ministry of Education administrative data systems	Government
7B. Primary completion rate	Ministry of Education administrative data systems	Government
8. Literacy rate of 15--24 year-olds	Census, LS or IS	Donor
<i>Gender equality</i>		
9. Ratio of girls to boys in primary, secondary and tertiary education	Ministry of Education administrative data systems	Government
10. Ratio of literate women to men 15--24 years old	Census, LS or IS	Donor
11. Share of women in wage employment in the non-agricultural sector	Census, LS or IS, Labor Force Survey	Donor
12. Proportion of seats held by women in national parliament	Parliamentary records	Government
<i>Child mortality</i>		
13. Under-5 mortality rate	DHS* and Ministry of Health administrative data systems	Both
14. Infant mortality rate	DHS* and Ministry of Health administrative data systems	Both

## Final Draft

<i>Indicator and component</i>	<i>Typical instrument</i>	<i>Typical funding source</i>
15. Proportion of 1-year-old children immunized against measles	Ministry of Health administrative data systems	Both
<i>Maternal health</i>		
16. Maternal mortality ratio	DHS* and Ministry of Health administrative data systems	Both
17. Proportion of births attended by skilled health personnel	DHS* and Ministry of Health administrative data systems	Both
<i>HIV/AIDS, malaria and other diseases</i>		
18. HIV prevalence among 15–24- year old pregnant women	DHS* and Ministry of Health administrative data systems, Sentinel Sites	Donor
19. Condom use rate of the contraceptive prevalence rate	DHS*	Donor
19A. Condom use at last high-risk sex	DHS*	Donor
19B. Percentage of population aged 15-24 with comprehensive correct knowledge of HIV/AIDS	DHS*	Donor
19C. Contraceptive prevalence rate	DHS*	Donor
20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14	Not well covered	--
21. Prevalence and death rates associated with malaria	Ministry of Health administrative data systems or DHS* where measured	Government
22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures	Ministry of Health administrative data systems	Government
23. Prevalence and death rates associated with tuberculosis	Ministry of Health administrative data systems	Government
24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS)	Ministry of Health administrative data systems	Government
<i>Environmental sustainability</i>		
25. Proportion of land area covered by forest	If available, ministry source	Government
26. Ratio of area protected to	If available, ministry source	Government

## Final Draft

<i>Indicator and component</i>	<i>Typical instrument</i>	<i>Typical funding source</i>
maintain biological diversity to surface area		
27. Energy use (kg oil equivalent) per \$1 GDP (PPP)	If available, ministry source	Government
28. Carbon dioxide emissions (per capita) and consumption of ozone-depleting CFCs (ODP tons)	If available, ministry source	Government
29. Proportion of population using solid fuels	Census or LS	Donor
30. Proportion of population with sustainable access to an improved water source, urban and rural	LS or DHS*	Donor
31. Proportion of urban and rural population with access to improved sanitation	LS or DHS*	Donor
32. Proportion of households with access to secure tenure	Census or LS or Ministry	Donor

\* MICS Survey or DHS.

Source: PARIS21 Task Team Country Case Studies.

### **Appendix 3. Good Practice Examples of Survey Designs and Programs**

#### **Paraguay’s Survey Program under MECOVI**

MECOVI is a regional program to improve surveys and measurement of living conditions in Latin America and the Caribbean.<sup>11</sup> Until 1995, Paraguay conducted separate surveys for different purposes, such as labor, health, and education statistics. After joining the MECOVI in 1996, Paraguay decided to develop a more harmonized survey program in which surveys conducted in different years are comparable and complementary to one another. In 1996, Paraguay developed a quasi-Living Standard Measurement Study (LSMS)<sup>12</sup> survey that added consumption/expenditure, health, and education modules to the labor force survey it had been conducting regularly in the past. In 1997/98, Paraguay conducted a full-fledged integrated household survey (HHS) that consists of comprehensive set of questionnaires, including those for agricultural product and time use. This integrated HHS was designed in such a way that it would be comparable to the 1996 survey. In 1999, Paraguay developed a so-called “Permanent HHS,” which has a smaller questionnaire size and is designed to be conducted every year in between the integrated household surveys.<sup>13</sup> Again, the Permanent HHS was designed to be comparable to the integrated HHS. Paraguay, as a result, currently has the following survey program:

1997/98	1999	2000/01	2002	Future years
Integrated HHS	Permanent (core) HHS	Integrated HHS	Permanent (core) HHS	Alternate surveys

Although the integrated HHS would take twelve months to complete over the two calendar-year period, it will only take three months to conduct the Permanent HHS, so there still is a year in between the two types of surveys. This regular one-year interval is another advantage of this survey program, giving time for the statistical staff to do non-survey work and preparatory work.

#### **Integrated Household Survey Programs in Some African Countries**

Kenya, Nigeria, and Tanzania have been developing survey programs that consist of annual core surveys, using a large national master sample and short questionnaires, and special survey modules, using smaller samples (sub-samples of the master sample) and more detailed questionnaires. In Kenya and Nigeria, the Core Welfare Indicators Questionnaire (CWIQ) is used as the core survey to collect service delivery information for the most part and some agricultural data. Special modules are used to collect information on household budget/expenditure, detailed health data (similar to the ones collected through DHS), labor, and the informal sector. Depending on financial constraints, countries will conduct each specific module every four to five years. This type of survey program, together with the decennial census and administrative data, is

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<sup>11</sup> For more information on MECOVI, see <http://wbi0018.worldbank.org/external/lac/lac.nsf/0/0c98d81a90b60c77852567ec006dd1ac?OpenDocument> or [http://www.iadb.org/sds/POV/site\\_19\\_e.htm](http://www.iadb.org/sds/POV/site_19_e.htm). For information on the MECOVI program in Paraguay, see <http://www.dgeec.gov.py/MECOVI/index.htm?PHPSESSID=5659945526468274a242b8a05f82e276>

<sup>12</sup> LSMS is an integrated household survey that uses multi-topic questionnaires to study multiple aspects of household conditions and behaviors. For information about LSMS, see <http://www.worldbank.org/lsm/>.

<sup>13</sup> Paraguay’s Permanent HHS is still a larger survey compared to CWIQ survey mentioned in the main text.

## Final Draft

designed to allow countries to collect indicators necessary to monitor progresses of their poverty reduction strategies.<sup>14</sup>

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<sup>14</sup> For more information on the survey programs developed for Kenya, Nigeria, and Tanzania, contact Makiko Harrison at [mharrison@worldbank.org](mailto:mharrison@worldbank.org)