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## A Guide to Living Standards Measurement Study Surveys and Their Data Sets

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**A Guide to Living Standards Measurement  
Study Surveys and Their Data Sets**

## **The Living Standards Measurement Study**

The Living Standards Measurement Study (LSMS) was established by the World Bank in 1980 to explore ways of improving the type and quality of household data collected by statistical offices in developing countries. Its goal is to foster increased use of household data as a basis for policy decisionmaking. Specifically, the LSMS is working to develop new methods to monitor progress in raising levels of living, to identify the consequences for households of past and proposed government policies, and to improve communications between survey statisticians, analysts, and policymakers.

The LSMS Working Paper series was started to disseminate intermediate products from the LSMS. Publications in the series include critical surveys covering different aspects of the LSMS data collection program and reports on improved methodologies for using Living Standards Survey (LSS) data. More recent publications recommend specific survey, questionnaire, and data processing designs and demonstrate the breadth of policy analysis that can be carried out using LSS data.

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Number 120

**A Guide to Living Standards Measurement  
Study Surveys and Their Data Sets**

Margaret E. Grosh  
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## Foreword

The Living Standard Measurement Study surveys have been an important tool in measuring and understanding poverty in developing countries. The Poverty and Human Resources Division of the Policy Research Department has undertaken a concerted effort in the last three years to improve the accessibility to researchers of data from the surveys. The major part of that initiative has been to improve the documentation of each data set. This has greatly reduced the start-up costs to new users. The division, in concert with other parts of the World Bank, has also been encouraging countries to adopt more open data access policies and to improve data dissemination services. This paper is important because it provides the first comparative "catalogue" of LSMS data sets, their differences, and the rules governing their use.



Lyn Squire, Director  
Policy Research Department



## **Abstract**

This document serves two purposes. First, for analysts with a general notion that LSMS data may be of interest for their work, the document provides a brief summary of the data available from, and access agreements relevant to, each country, and of the services offered as part of the World Bank's ongoing data management activities. This should help interested researchers to assess whether and how to pursue the use of a specific data set. For further information, the researcher should follow the procedures explained in Chapter IV on "Data Access and Content" beginning on page 27 and in Box 2 on page 34. Second, the document serves as a brief introduction and history of the LSMS. For those unfamiliar with LSMS, it will provide a basic orientation. For those familiar with LSMS surveys in the context of one or two countries, it provides a broader picture. Since there is greater diversity in country experiences than widely recognized, this emphasis is important.



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## I. Introduction

The Living Standards Measurement Study was established by the World Bank in 1980 to explore ways of improving the type and quality of household data collected by government statistical offices in developing countries.<sup>1</sup> The objectives of the LSMS were to develop new methods for monitoring progress in raising levels of living, to identify the consequences for households of current and proposed government policies, and to improve communications between survey statisticians, analysts, and policymakers (see Chander, Grootaert and Pyatt, 1980, for the original statement of purpose and work program).

To accomplish these objectives, LSMS activities have encompassed a range of tasks concerned with the design, implementation and analysis of household surveys in developing countries. In the initial years, work centered on evaluating survey experience prior to the 1980s, identifying what information would be most useful to collect, and how the collection of such information could be made feasible. From 1985 to about 1991, LSMS work concentrated heavily on the implementation of LSMS surveys. As the number of resulting household survey data sets grew, so did the use of those surveys to analyze the linkages between household behavior, household living standards and the constraints they face, including how those constraints are changed by government actions. Since about 1991, survey implementation and analysis has continued with greater emphasis in the project on building analytic capacity as well as data collection capacity. Furthermore, greater weight than previously is being put on documenting past surveys, ensuring that surveys are available to interested researchers, providing pedagogical materials and evaluating the experience of the first surveys.

This document serves two purposes. First, for analysts with a general notion that LSMS data may be of interest for their work, the document provides a brief summary of the data available from, and access agreements relevant to, each country, and of the services offered as part of the World Bank's ongoing LSMS data management activities. This should help interested researchers to assess whether and how to pursue the use of a specific data set. Second, the document serves as a brief introduction and history of the LSMS. For those unfamiliar with LSMS, it will provide a basic overview. For those familiar with LSMS surveys in the context of one or two countries, it provides a broader picture. Since there is greater diversity in country experiences than is commonly recognized, this emphasis is important.

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1. Originally the LSMS referred to a set of activities funded by a specific research grant. Over the years, the term has come to refer to a larger set of activities that share the same objectives, regardless of the source of their financing. This paper refers to the latter definition.



## II. What is an LSMS Survey?

Two characteristics distinguish LSMS surveys: (i) multi-topic questionnaires designed to study multiple aspects of household welfare and behavior and (ii) extensive quality control features. In the past, there was a time when a survey was considered to be an LSMS survey because it was carried out with technical assistance from staff in the relevant division at the World Bank (now called PRDPH<sup>2</sup>), but, as the number of surveys grows and as the role of the division changes, this is no longer a reliable indicator of how well a survey fits the LSMS prototype. Here, we will look at each characteristic in turn, and then we will examine the variations that there have been in the design and content of existing LSMS-type surveys.

### Multi-Topic Questionnaires

The main objective of LSMS surveys is to collect household data that can be used to assess household welfare, to understand household behavior, and to evaluate the effect of various government policies on the living conditions of the population. Accordingly, LSMS surveys collect data on many dimensions of household well-being, including consumption, income, savings, employment, health, education, fertility, nutrition, housing and migration (see Box 1). A more detailed summary of the questionnaires used in Ghana is provided in Annex A. See Grootaert (1986) for the household questionnaire used in Côte d'Ivoire, and Ainsworth and others (1992) for the Tanzanian household questionnaire.

Three different kinds of questionnaires are normally used: the household questionnaire, which collects detailed information on the household members; the community questionnaire, in which key community leaders and groups are asked about community infrastructure; and the price questionnaire, in which market vendors are asked about prices. A fourth type of questionnaire, school or health facility questionnaires, is sometimes used as well.

*Household Questionnaire.* Because welfare is measured by consumption in most LSMS research on poverty,<sup>3</sup> measurement of consumption is strongly emphasized in the questionnaires. There are detailed questions on cash expenditures, on the value of food items grown at home

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2. This division can trace its descent directly from the original Living Standards Unit (LSU) established in the Development Research Department in 1980. In the 1987 reorganization of the World Bank, the unit was renamed the Welfare and Human Resources Division and moved to the Population and Human Resources Department (PHRWH). Despite this change, its mandate stayed relatively constant. In 1992, new functions of monitoring poverty levels worldwide and of monitoring the World Bank's implementation of various poverty alleviation strategies were added to the division, and the division was renamed the Poverty Analysis and Policy Division (PHRPA), while remaining in the same department. In the January 1993 reorganization of the World Bank's research complex, LSMS activities (and most of its associated staff) were moved into the newly created Poverty and Human Resources Division of the Policy Research Department (PRDPH). This division is the focal point of research on a range of issues (poverty, health, fertility, nutrition, education, employment and their interlinkages). LSMS activities complement most of the division's mandate, but now constitute only one part of it.

3. Of course, the LSMS data are rich enough to allow other indicators of household welfare to be used (see Glewwe and van der Gaag, 1988).

*Box 1: Modules in LSMS Questionnaires*

<i>Module</i>	<i>Respondent</i>	<i>Subject</i>
<b>Household Questionnaire</b>		
Household Composition	Head of household/principal respondent	Household roster, demographic data, information on parents of all household members
<i>Consumption Modules</i>		
Food expenditures	Best-informed household member	Food expenditures in the past 14 days and past 12 months; consumption of home production in past 12 months
Non-Food Expenditures	Best-informed household member	Expenditures in the past 14 days and past 12 months; remittances to other households
Housing	Head of household/principal respondent	Type of dwelling; housing and utilities expenditures
Durable Goods	Best-informed household member	Inventory of durable goods and their characteristics
<i>Income-related Modules</i>		
Non-farm self-employment	Best-informed household member for each of three businesses	Income, expenditures, and assets for three most important household businesses
Agro-pastoral activities	Best-informed household member	Land, crops, income, and expenditure from raising crops and animals; livestock and farm equipment inventory
Economic Activities	All household members 7 years and older (all adults must respond for themselves)	Employment, income, and time data for the main and secondary jobs in the last 7 days and the last 12 months; employment history; unemployment spells in the last 12 months; time use in the home
Other income	Best-informed household member	Income from other sources, including remittances from other households
Saving and credit	Best-informed household member	Savings and net debt the day of the interview; characteristics of outstanding loans to and from household members

*Box 1: Modules in LSMS Questionnaires*

<i>Module</i>	<i>Respondent</i>	<i>Subject</i>
<b>Sectoral Modules</b>		
Education	Head of household/principal respondent	Completed schooling and schooling expenditures for all household members 5 or older; schooling and other information of all non-member children under 30
Health	All household members (parents respond for young children)	Utilization of health services and medical expenditures for any illness in the last four weeks; utilization of and expenditures for preventive services in the last 12 months
Migration	All household members 15 years and older	Place of birth, time and current place of residence, and reasons for first and last moves
Fertility	One randomly selected woman 15 years or older	Birth history; use of maternity services and duration of breastfeeding for last live birth
Anthropometrics	—	Height and weight measurements of all household members
<b>Community Questionnaire</b>		
Demographics	Community leader	Size, growth, ethnic mix
Economy and Infrastructure	Community leader	Economic activities, access to roads, electricity, water, public services such as public transport, mail service, etc.
Education	Headmaster or Community leader	Location and characteristics of schools serving community
Health	Health workers or Community leader	Location and characteristics of health facilities serving community
Agriculture	Extension agent or Community leader	Farming practices, agricultural services available
<b>Price Questionnaire</b>		
	Market, shops	Prices on frequently purchased items

or received as gifts and on the ownership of housing and durable goods (for example, cars, televisions, bicycles and sewing machines) to make it possible to assign them a use rental value.

A wide range of income information is also collected. For individuals in formal sector jobs, most surveys contain detailed questions about wages, bonuses and various forms of in-kind compensation. Information is usually sought on secondary as well as principal jobs. At the household level, lengthy agriculture and small enterprise modules are designed to yield estimates of net household income from these activities. Other sources of miscellaneous income, such as the receipt of private transfers (for example, child support or remittances from abroad), public transfers (in cash or in kind), lottery winnings and interest income, are recorded as well.

Collecting data on a variety of household characteristics (including those on health, education, fertility and migration) from the same households makes it possible to analyze the important relationships among different aspects that make up the quality of life, such as the impact of parents' education on child nutrition or the effect of health status on employment. The sectoral modules collect such information. However, they are shorter, and the amount of detail provided on any one topic is smaller, compared to a single-topic survey.

*Community Questionnaires.* In order to limit the length of the household questionnaire, information on local conditions that are common to all households in the area is gathered in the community questionnaire. These questionnaires are typically used only in rural areas, where local communities are easier to define than in urban areas. The information covered by the questionnaire usually includes the location and quality of nearby health facilities and schools, the condition of local infrastructure such as roads, the sources of fuel and water, the availability of electricity, means of communication and agricultural conditions and practices.

*Price Questionnaires.* In countries where prices vary considerably among regions, it is important to gather information on the prices that households are faced with in practice (see Ravallion and Bidani, 1992). Thus, in most LSMS surveys, questionnaires have been developed to compile information on the prices of commonly purchased goods.

*Special Facility Questionnaires.* Sometimes very detailed information on schools or health clinics is desired. When this is the case, special facility questionnaires may be developed to supplement or replace those sections of the community questionnaire.

### **Extensive Quality Control Procedures**

In order to minimize errors and delays in data processing, LSMS surveys are implemented using procedures that resolve most inconsistencies in the data before they reach the central statistical office. Here, we will highlight those elements that are distinctive in LSMS surveys, as opposed to those that LSMS surveys share with other good household surveys.<sup>4</sup>

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4. This subsection draws heavily from Ainsworth (1986). See also Ainsworth and Munoz (1986) and Grosh and Munoz (1994).

*Questionnaire Format.* Several features of the questionnaire help to minimize interviewer error. For example, the questionnaire makes extensive use of screening questions so that the skip pattern is automatic, requiring virtually no decisionmaking by the interviewer. All of the questions are written out exactly as they are to be asked. Moreover, suggested questions for further probing are printed on the questionnaire for consumption items, crops and durable goods. Together, these features reduce the conceptual skills required of the interviewers and the potential for variation among them, and also save time as the interviewer does not have to pause to consider how to phrase each question or how to follow the skip pattern.

Other features eliminate a number of steps (and thus the opportunity for error and delay) in the processing of data. Almost all potential responses to each question are marked on the questionnaire with a numbered code, and the interviewer writes only the response code on the questionnaire.<sup>5</sup> Further, the household questionnaire is designed so that the data can be entered into the computer straight from the completed questionnaire, thus eliminating the additional step of transcribing codes onto data entry sheets.

An important element in the design of the LSMS questionnaire is that changes can be made to the questionnaire quickly and easily, either in response to the field test or over the years as policy needs change. The questionnaires are produced on microcomputers using special formatting packages.<sup>6</sup> This also simplifies translations as the verbal parts can be overwritten in the local language, leaving the skip codes, the response codes and the general format intact.

*Organization of Fieldwork.* Fieldwork and data entry are highly decentralized in full-fledged LSMS surveys. The core work is performed by a team consisting of a supervisor, two interviewers, an anthropometrist, a data entry operator and a driver. The team is based in a regional office equipped with a personal computer for data entry. The data entry operator works only at the field office, while the other members of the team travel between the field sites and the office. Teams are supervised and supported by a national survey directorate, consisting of the survey director and assistants responsible for field operations and data management.

The field work is carried out in two rounds of interviews two weeks apart. It is therefore possible to check the data from the first round for consistency before the second round of interviews. Thus, any inconsistencies detected from the first round of interviews can then be cleared up directly with respondents during the second round of the interviews.

The standard fieldwork plan is as follows. During round one, which takes a week in each village, two interviewers each administer the household questionnaire to eight households, while the supervisor administers the community and price questionnaires (step 1). The supervisor personally observes and evaluates one interview per interviewer during this week, discussing improvements with the interviewer and recording the results on a form to be sent to

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5. Typically no more than a dozen questions are not pre-coded.

6. One of the first of these, GRIDS, was developed specifically for the first LSMS surveys. Since then, other suitable packages have appeared on the market, such as the FORMTOOL or PERFORM graphics packages and more recently the advanced versions of some word processing packages.

the national office (step 2). Following round one in the field, the half-completed questionnaires are taken to the field office, where the data are recorded on computer diskettes by the data entry operator (step 3). This takes about one week. The data entry program prints out the data recorded for each household, highlighting any errors or inconsistencies. The supervisor then reviews, circling on the original questionnaires the questions that must be repeated by interviewers during the second round (step 4).

During round two of the interview, the team returns to the field to complete the second half of the questionnaire and to correct errors found in round one (step 5). This is followed by field supervision (step 6), data entry (step 7) and quality control of data entry (step 8), as in round one. Errors detected after round two are corrected only if they are data entry errors. Thus, supervision in the field is especially critical during the second round, when there is no subsequent opportunity to capture missing information or to correct field errors. In the final step (9), the diskettes of data are sent from the field office to the national office to be reviewed by the data management specialist and consolidated with data from the other field teams. Throughout this cycle, staff from the national office make unannounced visits to field offices and to interviewing sites to observe the efforts of the team members and evaluate their performance.

*Sample Size.* The number of field teams is kept small so that it is feasible to supervise them closely. LSMS surveys tend to use small samples, often in the order of 1,600 to 3,200 households and rarely more than 5,000 households. Although larger samples would have smaller sampling error, it was judged by survey designers that non-sampling errors would increase more than concomitantly.<sup>7</sup> Having a small number of teams also helps to keep the cost of supplying them with vehicles and computers within bounds.

*Data Management.* The LSMS surveys use personal computers in the field, where all the stages of data collection, data entry and editing are carried out. This dramatically reduces the length of time between when the fieldwork ends and when the data become available for analysis. It also improves the quality of the data. The data entry programs that have been used for LSMS surveys have each been custom designed. This was a major innovation at the time of the first survey in 1985. The use of commercially-available packages for this purpose has now become widespread, though the thoroughness of the checks in the fully-fledged LSMS surveys is probably well above average even today.

As the data are keyed in, they are first submitted to a set of range checks. Numeric variables are constrained to lie between minimum and maximum values, qualitative variables can only have defined valid codes and chronological variables are supposed to contain valid dates. When all of the data from a single questionnaire have been recorded, consistency checks are run on data from different parts of the questionnaire. When values are out of the allowed range or are inconsistent with other variable values, the computer gives audible and visual signals to the operator. A printout is then made of all the data for each household in a format similar to that of the questionnaire. Missing data and errors in the skip pattern appear circled in black, and a list of specific inconsistencies between different sections of the household questionnaire is produced. If the error is due to a typographical mistake, the data entry operator corrects it

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7. Unfortunately, it is impossible to quantify this tradeoff.

immediately. If the questionable value is on the original questionnaire, it is referred back to the supervisor and interviewer. A additional set of consistency checks were developed for the anthropometric module, which automatically compares survey data on individuals' age, height and weight with standard reference tables from the World Health Organization. The data entry program then produces a list of those individuals with seemingly erroneous measurements so that they can be remeasured during the second round.

*Resulting Data Quality.* When all of these procedures are scrupulously followed, data quality can be very high, as shown by evidence on some dimensions of data quality for the Côte d'Ivoire and Peru surveys. These data sets were subjected to data entry checks and corrections in the field as explained above, but were not subjected to any further "cleaning" in the central office. Table 1 presents statistics on *missing data* at the level of individuals, farms, and business. Missing data in both surveys are extremely rare. Among the 55,843 persons in the three surveys, for example, only 46 persons have a missing age. There are also very few missing modules. Statistics on the coverage of the anthropometric module in the first two years of the Côte d'Ivoire LSMS are provided in Table 2. At least one height and weight measurement was obtained for almost 90 percent of all household members.

Table 1: Missing Data

Variable or module	1985 Côte d'Ivoire LSS			1986 Côte d'Ivoire LSS			1985 Peru LSS		
	Potential observations	Number Missing	Percent Missing	Potential observations	Number Missing	Percent Missing	Potential observations	Number Missing	Percent Missing
Sex	14,531	2	0.01	13,867	0	0.00	27,445	0	0.00
Age	14,531	3	0.02	13,867	0	0.00	27,445	43	0.16
Parental characteristics	13,396	5	0.04	12,902	3	0.02	26,323	15	0.06
Schooling	11,145	44	0.40	10,718	3	0.03	22,870	26	0.11
Health	13,396	7	0.05	12,902	4	0.03	26,323	121	0.46
Employment	10,164	5	0.05	9,868	8	0.08	22,121	121	0.55
Migration	7,041	13	0.18	6,725	32	0.48	15,721	100	0.64
Fertility	1,498	10	0.67	1,495	0	0.00	4,125	13	0.32
Farming	1,054	8	0.76	1,020	1	0.10	3,174	61	1.92
Family Business	733	1	0.14	747	0	0.00	2,751	49	1.78

*Note:* Total observations as follows: for sex and age, all persons enumerated; for parental characteristics and health, all household members; for schooling module, all household members 5 and older; for employment module, all members 7 and older for Côte d'Ivoire and 6 and older for Peru; for migration module, all members 15 and older; for fertility module, number of households with at least one woman 15 and older (Côte d'Ivoire) or 15-49 (Peru); for a farm module and business modules, number of households that said they had a family farm or business in round one.

Table 2: Percent of Individuals Measured, Anthropometric Module

Category	1985 Côte d'Ivoire LSS		1986 Côte d'Ivoire LSS	
	Number of Individuals	Percent Measured at Least Once	Number of Individuals	Percent Measured at Least Once
Total	5,383	89.9	12,868	88.4
Children				
Age 0-4	914	91.9	2,171	91.4
Age 5-14	1,651	90.1	3,983	89.3
Adults	2,818	89.1	6,713	86.9

Note: Anthropometric measurements were begun midway through the 1985 CILSS. They were not undertaken in Peru.

The *accuracy* of results is difficult to evaluate in the absence of other independent and reliable sources. Accuracy should be enhanced, however, by insisting that individuals respond for themselves. Interviewers were instructed to administer the schooling, health, employment, migration and fertility modules individually to each household member, and to avoid proxy responses for adults. According to Table 3, at least 93 percent of all women responded for themselves to the fertility section and 79-89 percent of all adult household members responded for themselves to the employment module. Non-response by entire households was due mainly to problems locating addresses or abandoned housing. Refusal rates were 1.4 percent or less in both surveys.

A final indicator of the quality of the data is their *internal consistency*. A few illustrative checks on internal consistency are reported in Table 4. Before classifying individuals as household members, the LSMS collects information on all persons usually living in the household as well as those temporarily present. The first check looks at the characteristics of the persons *not* classified as household members to see if they were correctly classified. Only 16 persons in the two surveys fail this check (see Table 4). According to the second check, among individuals able to provide a birth document, fewer than one percent reported an age that is inconsistent with the date of birth. The LSMS questionnaire provides extensive linking between different family members within a household; the results for the third consistency check between children and their fathers is indicative of the exceptionally high degree of internal consistency between household members in the surveys. The last check in the table is not absolute, since it is quite possible that a household had a vehicle but did not purchase gasoline in the last 7 days. Over three-quarters of the households nevertheless did report expenditure on gasoline in the two surveys.

*Turnaround Times.* The LSMS is noted for the short turn around time between the end of data collection and the availability of data for analysis. Theoretically, this is a matter of only a week or two, and in several countries basic abstracts have been completed within two to six months of the end of field work. This speed has contributed markedly to the relevance of the data to policymaking. The quick turn around between the completion of field work and the availability of data for analysis is largely due to the pre-coding in the questionnaire, the extensive quality control during the field work, and the decentralized, concurrent data entry.

*Table 3: Self-Reporting by Respondents*

Module	1985 Côte d'Ivoire LSS		1986 Côte d'Ivoire LSS		1985 Peru LSS	
	Number of Observations	Percent Self-Response	Number of Observations	Percent Self-Response	Number of Observations	Percent Self-Response
Employment	10,159	69.3	9,860	67.3	22,000	71.5
Children	3,120	44.6	3,139	42.9	6,423	28.7
Adults	7,039	80.3	6,721	78.8	15,577	89.2
Fertility	1,488	93.3	1,495	92.8	4,119	97.0

*Note:* In Côte d'Ivoire, children are age 7-14; in Peru, they are 6-14.

*Table 4: Internal Consistency*

Consistency Check	1985 Côte d'Ivoire LSS			1986 Côte d'Ivoire LSS			1985 Peru LSS		
	Number of Observations	Number Failing Check	Percent Failing Check	Number of Observations	Number Failing Check	Percent Failing Check	Number of Observations	Number Failing Check	Percent Failing Check
Non-household members correctly classified as non-members	1,135	8	0.7	965	2	0.2	1,122	6	0.5
Among those with birth certificates, date of birth and age are consistent	7,485	45	0.6	6,653	16	0.2	27,120	153	0.6
Among those with father in household, code given as father's ID is a valid ID of an adult male	6,084	17	0.3	5,912	16	0.3	12,581	32	0.3
ID code of respondent to fertility section is valid ID of an adult female and corresponds to the ID of randomly selected female	1,490	24	1.6	1,495	16	1.1	4,119	9	0.2
Households reporting an automobile also report gas expenditure in the past 7 days	143	31	21.7	133	28	21.1	355	88	24.8

*Note:* The number of observations is as follows: total non-members of household total individuals with both birth certificates and reported ages; total persons reporting father in the household; number of fertility modules completed; total households reporting an automobile.

The length of time between the decision to carry out a survey and the time when data are available, however, is almost always much longer. Depending on the starting point of the country's survey infrastructure (notably the adequacy of the sample frame, availability of equipment and general adequacy of management), six to eighteen months of preparation may be required before the survey is fielded. When the full LSMS field procedures are used, data collection itself takes place over a full year (though a preliminary analysis is sometimes done with the first six months of data). Thus from the first idea to the full abstract of results can take two to three years.

*Surveys by Implementation Characteristics.* As shown in Table 5, a half dozen of the surveys have almost all the hallmarks of an LSMS survey (though they still differ in detail, as will be discussed below in Chapter III ("A Brief History of LSMS to Date" beginning on page 15). An equal number of surveys sometimes referred to as LSMS surveys, however, are missing one or more of the hallmarks. The decisions to deviate from the LSMS prototype were taken for a variety of country-specific reasons — to fit better into the local institutional framework, to provide estimates of key variables representative of sub-national political jurisdictions, to focus more specifically on a particular policy issue, to lower costs, etc. Though they may have offsetting advantages, these decisions often have negative implications for the quality of the data or the range of analysis that is possible.

As seen in Table 5, there are a growing number of surveys that have been influenced by the LSMS design, and in ordinary conversations may be called "LSMS-type" surveys or otherwise linked with the LSMS. This labelling usually comes about because of the questionnaire content — the use of a multi-topic questionnaire strong on measures of consumption, diverse sources of income and use of public services, and sometimes with accompanying community or price questionnaires. Much less often have the LSMS' distinctive quality control features (e.g. high supervision ratios during field work and data entry in the field prior to a second visit to the household) incorporated in these "LSMS-type" surveys. The data and documentation for these surveys are not always available from PRDPH, though in several cases PRDPH does archive and disseminate the data or can at least steer the reader of this document to the right contact in the responsible division of the World Bank.

The reader should note that as this document is being written, LSMS-type surveys are being planned in Nepal, Brazil, Paraguay, Bulgaria, Kazakhstan, Mongolia, Turkmenistan, Uzbekistan, and Tunisia and possibilities are being explored in several other countries as well. Furthermore, additional rounds of field work are being contemplated in some countries where surveys have already been carried out.

Finally, the Social Dimensions of Adjustment Project (SDA), carried out in the Africa Technical Department's Human Resources and Poverty Division of the World Bank, has assumed responsibility for the LSMS surveys in Côte d'Ivoire, Ghana and Mauritania. It is sponsoring "Integrated" surveys, which are very similar to LSMS surveys, in Uganda, Mauritania, Madagascar, Senegal and Guinea as well. Less complex household surveys covering some of the same themes have been sponsored in a much larger number of Sub-Saharan countries. The regional unit should be contacted directly for information on the contents and availability of those surveys. The Cornell University Food and Nutrition Policy Program has also sponsored surveys of similar characteristics for Guinea and Mozambique.

Table 5: Some Features of LSMS-Type Surveys Available from PRDPH <sup>a</sup>

Country	Years	Questionnaire Content	Use of LSMS Quality Assurance Features				LSMS Unit Involvement in Implementation
			Questionnaire Format	Field work Organization	Data Entry Program	Small Sample	
Peru	1985	yes	yes	yes	yes	yes	yes
Côte d'Ivoire	1985, 86, 87, 88	yes	yes	yes	yes	yes	yes
Ghana	1987, 88	yes	yes	yes	yes	yes	yes
Mauritania	1988	yes	yes	yes	yes	yes	yes
Jamaica	1988-94	partial	yes	no	yes	yes	yes
Bolivia	1989, 90, 91, 92	partial	yes	no	yes	no	yes
Peru	1990, 91, 94	partial	yes	partial	yes	yes	partial
Morocco	1991	yes	yes	yes	yes	yes	yes
Pakistan	1991	yes	yes	yes	yes	yes	yes
Venezuela	1991, 92, 93	partial	yes	no	no	no	yes
Russia	1992-93, 94	partial	no	no	no	no	no
Guyana	1993	partial	yes	no	yes	yes	no
Nicaragua	1993	yes	yes	partial	yes	yes	no
South Africa	1993	yes	yes	partial	yes	no	yes
Vietnam	1993	yes	yes	yes	yes	yes	yes
Tanzania - national	1993	partial	yes	no	no	yes	no
Tanzania - Kagera	1991-1993	yes	yes	yes	yes	yes	yes
Kyrgyzstan	1994	partial	no	no	no	yes	no
Ecuador	1994	yes	yes	partial	yes	yes	yes
Romania	1994, 95	yes	yes	no	yes	no	no

Note: a. There are some qualifications to the adequacy of PRDPH's support of these data sets. These are given in Table 10.



### III. A Brief History of LSMS to Date

The LSMS surveys are not a static, uniform product. Each is different from previous surveys and sometimes the differences are considerable. We expect that more differences will appear in the future, and that these may become increasingly large. This section describes some of the factors shaping the evolution of LSMS surveys, a history of those carried out to date, their use, and PRDPH's present activities in support of the surveys.

#### Evolution in LSMS Surveys

*Motivation.* First, the main motivation for the surveys has shifted from research to operational policy analysis. The earliest LSMS surveys were carried out as research projects. The first goal was to determine whether it was feasible to gather such comprehensive data. The second goal was to conduct research to better understand household behavior and its implications for government programs. Emphasis was on analysis of the determinants of many aspects of welfare and their interaction, rather than on precise measurements of a few aspects of welfare. When the first surveys proved feasible and their analysis fruitful, policymakers and their advisors realized that data from the surveys could be very useful in policymaking. The descriptions of the welfare of the population and of the use of government services were especially valued. Some of the results from the more sophisticated studies of the determinants of welfare and the impact of policies were also valued by the operations audience, but perhaps less so than by the academic community.

The shift in motivation for the surveys is leading to some changes in them and considerable variation from country to country. Some of the content is being adjusted. Often there is a desire to have estimates of indicators accurate at sub-national levels. This requires a much larger sample and thus raises the question whether quality and comprehensiveness can be maintained. The need to build local analytic capacity in addition to capacity building for data collection is also growing as a result of this trend.

*The Actors.* The second factor that is changing is the cast of actors involved and their roles in implementing new surveys. In the early years the LSMS division wore many hats simultaneously. It usually provided the impetus to carry out a survey in a particular country. It often arranged and administered the financing for the survey. It provided all the technical assistance. And it was often the main user of the data.

Now these hats are being worn by many different actors. The main impetus to do a new survey is now much more likely to come from the operational staff of the World Bank or some other international agency or from the country itself rather than from the LSMS division. Financing is arranged and administered by the operational staff of the Bank or other international agency. Some of the technical assistance is still provided by the LSMS division, but, increasingly, other parties are providing technical assistance instead. And the LSMS division does a smaller proportion of the analysis on any one country's data.

*Building Local Analytic Capacity.* When the first few survey projects were designed, the principal constraint to the use of data in policy making was taken to be the lack of data. The projects therefore concentrated on collecting data. Experience soon showed, however, that there is another constraint to using data to inform policy decisions — weak local analytic capacity. Most recent survey projects have begun to address this constraint. The range of options has varied extensively. At minimum, a few tens of thousands of dollars are included in the project to commission local analysis or to provide a little training to staff of the statistical agency in how to produce an abstract. In South Africa, when the basic abstract was ready, a set of seminars were held to publicize the survey, its results and the public availability of the data and their documentation. A second seminar was held to present the results of the some of the studies done by those who received the data at the first conferences. In Tanzania, a similar strategy is being used, with several months of short, intense workshops (in the use of appropriate computer software, on statistics, on microeconomics) planned as well. In Jamaica, the first survey project dedicated \$0.5 million to data collection. After several years, a second project was developed that spent \$3 million to build analytic capacity in the planning agencies, the university and the ministries of health, education and welfare, and \$0.5 million was provided for further data collection.

*Changing Technological Environment.* Many of the practical issues in survey implementation are heavily influenced by computer technology. Indeed, it was the dawn of the personal computer age that made possible the original innovations of the LSMS such as concurrent data entry, error detection and revisiting households while still in the field.

Since their beginning, LSMS surveys have not changed much with respect to their use of technology, though certain things have become easier. For example, the original custom-designed software to format the questionnaire is no longer necessary now that a variety of commercially available graphics and word processing packages are adequate for the task. With the advances in analytic, word processing and graphics software, survey abstracts can now present more sophisticated analysis in much more appealing form.

Three new changes in technology that may affect how LSMS surveys are implemented are already in view, and more are surely developing. Commercially supported data entry packages may soon supersede the customized data entry programs that have been used to date for LSMS surveys. When these are used, it will be crucial to maintain technical assistance and training in the conceptual issues of how to handle hierarchical file structures and how to determine range and consistency checks.

Soon hardware will have evolved to the point where it is simple to take the data entry function on the road with the interviewers rather than having the data entry operator and computer located at a base station in the region where surveying is taking place. This may lead to some changes in how the day to day management of field work and quality control are done. Such a system will be pilot-tested on the LSMS survey being developed in Nepal.

Advances in computer technology also permit considering a still more ambitious proposition. The interviewers might enter the data directly into the computer during the interview, thus dispensing with the paper questionnaire altogether. This system has been piloted

already in Bolivia and is scheduled for piloting in the Indonesia Family Life Survey in 1996. Just what the implications for management, quality control of interviews and data management will be is still unclear, though it is obvious that the changes will be substantial.

### **LSMS Survey Chronology**

As of 1994, surveys with several, if not all, of the hallmarks of Living Standard Measurement Study had been conducted in eighteen countries, as shown in Table 5. Although the first few LSMS surveys followed a very similar format, as time passed and countries with different circumstances were added, substantial variety arose in the surveys across the different countries. This section presents a brief history of the LSMS. In doing so, some explanations for the different outcomes in the different countries are given. Some of the differences in the process are summarized in Table 6.

The first two LSMS surveys were fielded in Côte d'Ivoire in 1985 and in Peru in 1985-86. In both cases financing was obtained from the World Bank's Research Committee and the main actor in implementing these surveys was the Living Standards Unit (now PRDPH see fn. 2). The purpose of these surveys was to gather data that would allow the detailed study of household behavior and several aspects of living standards and to see whether such a complex survey design could in fact be successfully carried out in a developing country. On the whole, the Côte d'Ivoire and Peru surveys were successfully implemented. The data were gathered according to plan and were used immediately (and still are being used) for a wide variety of research and, less quickly and to a lesser extent, in support of the policy dialogue between the countries and the World Bank.

Since the first two surveys, more emphasis has been placed on ensuring that LSMS surveys respond to operational needs.<sup>8</sup> The shift in focus is due to two factors. First, once the first two surveys were effectively declared successes, the World Bank's Research Committee took the view that similar data collection for other countries, in and of itself, could not be considered research; future surveys had to be financed from other sources. The surveys then began to compete for funds with project activities financed by the World Bank and other development agencies. To get funding, the surveys had to be seen as useful for policy work in the eyes of both government ministries and of the operational staff of the financing agencies. Second, as the early surveys demonstrated their operational relevance, they stimulated interest from Bank operational staff and government policy makers who began to request more operational analysis of the data.

The next two LSMS surveys, Ghana in 1987-88 and Mauritania in 1988, were co-financed by IDA credits<sup>9</sup> and USAID grants. In both countries the purpose of the survey was

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8. "Operations" is World Bank jargon. It refers to the process of designing and implementing government policy or development projects. The context often implies that these are supported by World Bank lending, though the use is similar if other international agencies or national budgets provide the funds.

9. The International Development Agency (IDA) is the concessional window of the World Bank Group. These funds are available only to low income countries.

*Table 6: The Process of Implementing LSMS Surveys in Selected Countries*

<i>Country</i>	<i>Source of Impetus</i>	<i>Purpose</i>	<i>Operations Involvement</i>	<i>LSMS Unit Involvement</i>	<i>Planning/ Line Ministry Involvement</i>	<i>Source of Funds</i>
Côte d'Ivoire	PRDPH	experiment	low	high	low	RSB, LSMS Unit
Peru 1985	PRDPH	experiment	low	high	low	RSB, LSMS unit
Ghana	PRDPH	monitoring adjustment	low	high	low	AID, IBRD
Mauritania	PRDPH	...	low	medium	...	AID
Bolivia	ops/ government	poverty analysis	medium	high	low	IDA, gov't
Jamaica	government	monitoring adjustment	high	medium	high	IBRD
Morocco	ops/ government	poverty analysis	medium	low	high	gov't, UNDP
Pakistan	PRDPH	poverty analysis	low	high	low	Bank, AID, UNDP
Peru 1990/91	operations	poverty analysis	high	low	none	RSB, Japan
Venezuela	operations	project monitoring	low	medium	high	IBRD
Vietnam	operations	monitoring transition to market economy	medium	medium	high	UNDP, SIDA, gov't
Nicaragua	operations	data scarcity	high	none	high	USAID, UNDP, SIDA, IDA, UNICEF
Guyana	operations	monitor project	high	medium	medium	RSB, DANIDA, IBRD
Tanzania - Kagera Region	PHRHN/ AFTHR	AIDS impact and policy	high	high	low	USAID, PHRHN
Kyrgyzstan	operations	poverty measurement	high	minimal	none	Japan
Ecuador	operations	poverty monitoring	high	high	low-medium	IBRD
South Africa	operations/ ANC	data scarcity/ poverty analysis	high	low/medium	none	DANIDA, NORAD, Dutch

to collect comprehensive household data for general research and policy analysis use, since both countries lacked up-to-date household survey data. Bank operations and government ministry interest was somewhat higher in Ghana than in Côte d'Ivoire and Peru, but in Mauritania their involvement was still very low. In both countries the degree of oversight by PRDPH was lower than in Côte d'Ivoire and Peru, mainly due to lack of staff time. Since PRDPH had no control over the USAID funds and less over the IDA funds than over the research monies used in the first two countries, quality control was more difficult. Less time for supervision and more difficult circumstances may have had some negative effect on data quality in the Ghana survey and, unfortunately, had a substantial negative effect in the Mauritania survey.

In 1988, the next two countries to implement LSMS surveys, Bolivia and Jamaica, did so with a large number of changes in survey and questionnaire design. Further, the objectives of these two surveys were more specific. In the case of Bolivia, after a period of severe economic crisis, the Bank suggested an LSMS as a tool to support Bolivian social policy decisions. An LSMS plan was set up that gradually expanded the Bolivian labor force survey and added health, education and migration modules, plus a very short consumption module. The first round was done only in departmental (regional) capitals, the second added cities with greater than 10,000 inhabitants, and the third included towns with populations greater than 2000. Although the first round was designed primarily to evaluate the main externally funded social sector intervention at the time, the Emergency Social Fund, Bank operations staff delegated the supervision of the survey almost exclusively to PRDPH. Over five years of field work, the Bolivian survey became fairly well integrated into the national statistical office's work and the range of issues that its staff handled without Bank technical assistance grew markedly. The questionnaire was considerably shorter than a standard LSMS, the sample was larger (usually about 8,000 households per round) and the field procedures truncated.

In Jamaica, the initial proposal to do an LSMS survey came from the Government, in fact directly from the Prime Minister, rather than from the World Bank. In particular, the government wanted a tool to assess the effectiveness of its Human Resources Development Program, a multifaceted initiative to revitalize the social sectors after several years of austerity and adjustment. A large part of the funding came from the government, supplemented first by funding from a Bank loan and then by a grant from the Netherlands. By eliminating some modules and shortening others, the original LSMS prototype questionnaire was substantially trimmed so that it could be administered in a single interview. The survey sample was linked to an existing Labor Force Survey and existing field work staff and procedures were used. This allowed the survey to fit well in the institutional structure, but sacrificed several of the data quality assurance procedures that are a key distinction of the full-fledged LSMS (e.g. computer checking and data entry while still in the field, intensive supervision of interviewers).<sup>10</sup> Since the survey is viewed as a monitoring survey, it has been carried out annually since 1988 (in fact twice in 1989).<sup>11</sup> Each round has a core questionnaire and, since the second survey in 1989, an expanded module for a topic of special emphasis for the year. The survey's development and

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10. See Grosh (1991) for more detail.

11. Originally conceived to take place semi-annually, it was later decided that annual surveys provided sufficient data.

analysis are overseen by the Planning Institute, which chairs the survey's steering committee (comprised of representatives of the Statistical Institute, social sector line ministries, and the University of the West Indies). On the Bank's side, implementation was done with some support from PRDPH, but most of the supervision was done by a member of the country team located in the regional technical department. The Jamaican government's keen interest in the survey, the close link between the Bank's survey supervision and Bank policy dialogue and lending, and the seven years of active supervision has led to the greatest degree of use of the survey data in government policy making achieved to date.

New surveys were done in Peru in 1990, 1991, and 1994 in order to measure changes in welfare over the period of economic crisis and adjustment. The 1990 survey was limited to Lima, where the sample was arranged to contain a random sample of the city, of which a subset was comprised of the same households visited in 1985. In 1991 and 1994 a random, nearly nationally representative sample was done.<sup>12</sup> The impetus for the surveys came from Bank operations, which provided part of the financing and secured the rest, partly from the World Bank research committee. PRDPH provided only some advice on questionnaires and sample design; the major work in orchestrating the survey was done by a consultant in 1990 and by operations staff in 1991 and 1994. Unlike almost all other LSMS surveys, the field work was contracted to a private consulting firm. Since the Bank had not yet resumed lending in Peru, in 1990 this was easier than working with the government, offering greater speed and control over the field work. Furthermore, many of the persons who had worked in the statistical institute on the 1985 LSMS survey were working in the private consulting firm in 1990, so that some of the expertise developed in 1985 was used in 1990.

The 1991, 1992 and 1993 Venezuela surveys were conceived both to monitor poverty and social programs after a period of declining income and, more immediately and specifically, to monitor and evaluate three of the government's new social programs, one of which was supported by a Bank loan that also funded the survey. The questionnaires and field work procedures conformed to standard practices in Venezuela and differed significantly from the LSMS prototype. The sample size was much larger, at 14,000 households, in order to provide results accurate not only nationally, but also at the departmental level. From the beginning there was a process of input from the social sector ministries to the central statistical office. As part of the project monitoring to be done with the survey, there was the intention of linking LSMS data with administrative records from health posts and of oversampling program participants. On the Bank side, PRDPH, rather than operations, provided support but at a lower level than for earlier full-fledged LSMS surveys, given the local statistical office's high level of institutional capacity.

These four Latin American surveys (Bolivia, Jamaica, Peru and Venezuela) all differed significantly from the prototype LSMS in both questionnaire and field work organization. The variations were prompted to make them better fit the client countries' institutional settings and analytical needs. The Jamaican and Bolivian surveys were explicitly included in the countries' UNHSCP-supported five year survey plans. The use of local field work organization and

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12. The sparsely populated jungle and rural coastal areas were omitted to cut costs. The Altiplano sample was modified due to security concerns.

procedures (rather than the LSMS' prototypical dedicated teams) takes advantage of local capacity and makes regular statistical office management responsible for, and stakeholders in, the survey. The time devoted to training interviewers and to supervising data collection is, however, much less in these cases than in a standard LSMS. Moreover, concurrent data entry and correction of data were usually not possible. Thus some of the quality control procedures were reduced.

Three recently completed LSMS surveys in Morocco, Pakistan and Vietnam are indicative of other recent trends in LSMS implementation. In the mid-1980s it was thought that LSMS surveys should be repeated on an annual basis in order to have a rich set of data for every year. By 1990, it was evident that having a similar comprehensive survey every year was not necessary; doing such a survey every three to five years would provide enough information to do elaborate analyses of household behavior, and how it changed over time.<sup>13</sup> Doing a comprehensive survey every year was expensive and produced data at a rate much faster than they could be used. Thus the Morocco, Pakistan and Vietnam surveys were implemented without plans for immediate follow-up surveys. However, a second Pakistan survey is now under discussion, as is one in Morocco. Another survey in Vietnam is also possible. These three surveys also represent a return to a comprehensive questionnaire and smaller sample sizes, in contrast to the Latin American cases. Another common thread of the Morocco, Pakistan and Vietnam surveys is that in each country the objective of the surveys was to collect a comprehensive data set that could be used for a wide variety of analyses, as opposed to collecting data to focus on a particular government program or policy initiative (e.g. the Emergency Social Fund in Bolivia and the Human Resources Development Program in Jamaica). Finally, it should be noted that each of these countries had a highly capable statistical office, so that doing a full-scale LSMS was not as difficult as in many other countries.

The LSMS recently fielded in the Kagera region of Tanzania was developed specifically for measuring the impact of adult mortality (largely due to AIDS) on Tanzanian households and for estimating the cost-effectiveness of various policies related to prevention and management of AIDS. The impetus was largely from the World Bank's research staff, but cooperation with operations staff in the regional technical department was high and Tanzanian academics have been heavily involved in the research design, survey implementation, and data analysis. The questionnaire and sampling design are even more sophisticated than in the prototype questionnaire including a four wave panel (i.e. four sets of interviews over two years, one set each six months), modules that deal more extensively with morbidity, mortality, health care utilization and expenditures, and household strategies for coping with adult illness, such as transfers and child fostering. The consumption modules were expanded to deal with seasonal and intra-household allocation issues.

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13. An important disadvantage of doing surveys only every three to five years is that the institutional capacity built up with the first survey can erode within this time. In some places this will imply that the new round must rely on outside technical assistance as much as the first. Depending on relative prices, the rate of staff turnover, and the general institutional capacity, yearly surveys with little technical assistance after the first year or two may not be much more expensive than periodic surveys with a good deal of foreign technical assistance for each.

The impetus for surveys fielded in South Africa (1993), Nicaragua (1993), Guyana (1993), and Ecuador (1994) has come from Bank operations staff. Each has omitted some of the standard LSMS modules, and the Guyana survey is linked to that country's ongoing income and expenditure survey. The organization of the field work varies. The initial goal in each case was to fill large gaps in existing data and to help monitor social policies, especially those supported by Bank projects. The surveys' budgets included funds for some analysis to be done by consultants hired by the government. Financing came from Bank projects. No support (other than occasional advice) has come from PRDPH for Nicaragua and Ecuador, and a limited amount for Guyana. Rather, the surveys were managed by staff in the respective regional operations divisions, though several of them worked previously in PRDPH and were thus well-versed in LSMS experience.

Recently there has been a great deal of interest in establishing LSMS-type surveys in countries of Eastern Europe and the former Soviet Union. The operations division in charge have contracted out the technical assistance for surveys recently fielded in Russia (1992 and 1993) and the Kyrgyz Republic (1993). For the Romanian Survey in the field (in 1994/95) and for surveys now planned in Kazakhstan, Turkmenistan, and Uzbekistan, the process will go even further, with direct contracts or international competitive bidding for all the technical assistance for the surveys, though PRDPH will provide some supervision.

### Data Use

The total volume of studies supported by the LSMS surveys is impressive. A partial listing being compiled in early 1995 so far lists about 320 studies. An earlier accounting conducted in 1992<sup>14</sup> listed about 180. In the earlier listing, three quarters were conducted using the Côte d'Ivoire, Peru 1985, or Ghana data. Jamaica accounted for about half the remainder, and the rest were spread between Peru 1990/91, Bolivia and Pakistan. Morocco and Mauritania each had only one study reported. The heavy use of the Ivoirian, Ghanaian and the early Peruvian data sets compared to the others is probably largely accounted for by the fact that those data come from the earliest surveys, so there has been more time for them to be used in research.

The pattern of data use by topic has been fairly even. Poverty, employment, health, education and gender issues have been the focus of slightly more analysis than agriculture or household enterprises. The degree of satisfaction among analysts with the information also seems higher for the employment and social sector modules. Furthermore, many more analysts from more diverse backgrounds have used these modules. Analysts report with overwhelming frequency that each single paper drew upon information from many different modules. This

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14. In the fall of 1992, we sent letters to 89 researchers for whom we had some record of having used LSMS data sets, usually because they had obtained them from PRDPH (or its precursor units). We asked them to list the papers they had written with the data, and the country, year, and modules used in the analysis. We received 49 replies. Nearly 200 individual books, papers or monographs were reported. This is a rough estimate only. There a few cases of double counting where papers with two authors each reported an item, but there are many more cases of unreported work. We also asked the staff involved in supervising each survey to list the papers they knew about that had been done by government or university analysts in the countries surveyed. This is probably insufficient to capture all such work, and thus omits much analysis done in the developing world.

attests to the value of the multi-purpose design, which is one of the distinguishing characteristics of the LSMS surveys.

An ongoing question about the LSMS surveys is whether they are useful for operations or "merely" for research. The answer is clearly both, though their use in research has been more extensive. Of all studies done for all countries in the earlier (1992) listing, about one tenth qualify as operational (see definition below). If the first two countries done explicitly as research projects (Côte d'Ivoire and Peru) are excluded from the calculation, about one quarter of the studies are operational. Focusing on the middle and later phases of implementation when operational uses were an explicit intended outcome (i.e. excluding Côte d'Ivoire, Peru 1985, Ghana and Mauritania), about half of all analysis is operational. Thus, operational work is both a substantial and growing share of all analysis done using LSMS data.

The figures in the previous paragraph were calculated by defining "operational uses" as analysis requested or performed by the government or by the Bank operational staff to provide useful information about policies or programs on the table for active discussion. By this definition, the demand for health care study for Jamaica counts as operational because the government commissioned it at a time when user fees were being raised. Similar work led by the same analyst using Ivoirian and Peruvian data sets does not count as operational because it did not feed directly into a government decision process. Thus the preponderance of research over operational use is partly definitional — studies with clear policy implications are counted as operational only if they were done at the time of policy decision and the results were presented to decision makers. The contribution of other studies whose clear policy implications *indirectly* inform policy debates is not counted. This influence can be substantial but is very difficult to measure. Private Peruvian researchers, for example, have carried out extensive analysis of the effects of economic crisis and adjustment on poverty in Peru using the 1985 and 1990 LSMS data sets. The results have been widely disseminated in academic and policy circles as well as in the popular press. Similarly, the influence of more humble abstracts produced for each survey is not included within the definition of operational analysis, even when government staff do appear to make regular use of them. The Bolivian and Jamaican abstracts, for example, are quite detailed and have been disseminated actively to government and international agency staff and are apparently used by them in understanding the state of social development.

The Jamaican data have had the greatest operational influence achieved to date. The government has commissioned Jamaican academics to use them to set a poverty line, to compare food assistance programs and to redesign the food stamps program. Staff from the Ministry of Health actively collaborated (with the RAND Corporation) in studying the effectiveness of perinatal care, patterns in the quality of health care services, aging and functional ability, and patients' choice of health services, including willingness to pay for them. Other studies underway both by local and international researchers will eventually feed into background discussions of social policy. Furthermore, the data sets are being used in a quantitative methods course at the university, which should help to stimulate more and better quantitative social policy analysis in the long run. In Bank operations, the Jamaican LSMS data have been used in discussions of poverty, safety nets, targeting and the reform of secondary education.

The Ghanaian and Peruvian (both 1985 and 1991) data have been analyzed by or at the request of World Bank operational staff and fed into poverty assessments, country economic memoranda and other sector work in each country. Indeed, the Ghanaian country department hired a research analyst full time primarily to do operational analysis using the Ghanaian survey and integrate it into the policy dialogue. The Bolivian data were used to analyze the impact of the Emergency Social Fund, which served as a model for several internationally financed social funds. Plans exist for the Bolivian data to be used in the impact evaluation of Bolivia's Social Investment Fund and the project design of a new child-care project. Operationally driven work began on the Moroccan, Pakistani, Venezuelan, Nicaraguan, Guyanese, and Vietnamese data virtually as soon as they became available. Little or no operational work has been done for Mauritania. Côte d'Ivoire's data were not immediately used for policy analysis, but the Africa Technical Department has recently carried out an ambitious program of operationally-relevant research using those data.

### **LSMS Today**

PRDPH currently works on several fronts in support of LSMS. The emphasis put on the various lines of action changes over time, as do the specific activities carried out under each. The following is a brief snapshot of activities at the beginning of 1995.

*Analysis of Data.* The analysis of LSMS data for both policy and research is probably the largest single activity in PRDPH and so pervades the division's work that it is difficult to quantify.

*Assistance in Implementing New Surveys.* PRDPH continues to assist in implementing new surveys. During the 1994 fiscal year, field work was completed for a new survey or round of an annual survey in seven countries, and preparation for future surveys was moving forward in ten other countries. In a few cases, divisional staff or consultants spend several months working on a single country to help develop the project and to provide technical assistance themselves. With increasing frequency, PRDPH helps to identify suitable independent consultants, to write their terms of reference and to review their work, but does not actually provide large quantities of technical assistance itself. This greater reliance on individuals outside of PRDPH reflects the increased demand for LSMS surveys beyond what PRDPH can provide.

*Management, Documentation and Dissemination of Existing Data Sets to Researchers.* PRDPH archives and disseminates data from LSMS surveys to eligible users. Dissemination of existing data sets continues at the rate of about 1 per day. Clients are mostly researchers from the World Bank and academia, with a lesser proportion of World Bank operations staff. Data are also available from the institutions that carried out the field work. These agencies service most in-country requests for data. For the period from June 1993 to June 1995, the division devoted significant resources to improve survey documentation in order to reduce start up costs to new users, safeguard and rebuild institutional memory with regards to these surveys, and to reduce the unit costs to the division of disseminating the data sets.

*Training and Preparation of Written Pedagogic Materials.* Periodically the division produces written materials on the lessons from LSMS implementation experience. For example,

in the fall of 1994, the division began to draft a comprehensive manual on how to implement an LSMS survey from beginning to end. In 1992, PRDPH began an annual in-house training course for World Bank operations staff in charge of LSMS surveys.

*Publications.* PRDPH supports the LSMS Working Paper Series which publishes papers on issues relevant to the collection or analysis of multi-topic household surveys. Some papers focus on the methodology of data collection or statistical analysis, others focus on the description or analysis of household behavior or the effects of government policies.

*Research on Survey Methodology.* From time to time, PRDPH sponsors research on survey methodology. In the fall of 1994, it embarked on a multi-year research project to improve the policy relevance of LSMS surveys through i) increasing the range of topics they address; ii) improving data quality; and iii) improving or simplifying implementation. The work will involve some field experiments, and extensive analysis of the different ways things have been done in multi-topic household surveys since the inception of the LSMS.



## IV. Data Access and Content

This section of the paper is designed as a "catalogue" of data available from LSMS surveys.<sup>15</sup> The first sub-section describes briefly the content of the data sets. The second sub-section describes the rules governing access to them. The third section describes the data dissemination services provided by PRDPH.

### Selecting a Data Set

There has been substantial variation in the content of "LSMS" surveys. These differences in survey and questionnaire design mean that some surveys are more suited to the analysis of some issues or using certain techniques than others. The researcher thinking of using one or more of the surveys should investigate in detail whether the survey he or she intends to use will actually support the proposed analysis before getting too far in the planning stage. More than one researcher in the last few years has been intensely frustrated by discovering too late that the sampling plan or questionnaire design varies from one "LSMS" survey to another. The variation has grown markedly over time.

The information provided in this document should help the researcher with a general notion that LSMS data may be useful to them discover whether that is true. Annex A presents a detailed summary of the questionnaires used in Ghana. These are as close to a "prototype" as the LSMS has. In this subsection we explain some of the common ways that other surveys differ from the Ghana survey. In Tables 7 and 8, some of the basic facts on the surveys available through PRDPH as of early 1995 are presented. These should help a researcher narrow down the list of potentially interesting surveys. He or she may then request the questionnaires and, where available, other documentation, from PRDPH (see Box 2). In Table 9, a summary of the documentation available as of early 1995 is presented.

In addition to the standard changes in vocabulary required to make a questionnaire relevant to a given country, eight kinds of differences exist in "LSMS" surveys from different countries. This section briefly highlights the major sources of differences.

First, modules included in the household questionnaire differ from country to country. For example, the Jamaican, Bolivian, Guyanese, and Nicaraguan surveys have no agricultural or small enterprise modules and, at best, limited migration and fertility modules.

Second, within modules, the degree of detail varies widely. For example, all health modules cover the use and costs of health care, but some seek aggregate data on all health care visits in the last month, others on the first visit only, and others on each visit. The degree of detail collected on the agriculture module varies according to the heterogeneity of crops harvested. The consumption and labor participation modules also vary widely.

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15. The researcher is reminded that data suitable for similar analytic purposes is also available from other places, as described on page 12.

Table 7: Implementation of LSMS by Country, Data Information and Questionnaires Used

Country	Data Information					Questionnaires Used					
	Year of First Survey	Number of Rounds Fielded to Date	Number of Households in Sample	Interview Schedule	Panel	HH Questionnaire Scope	Price Questionnaire	Community Questionnaire	Facility Questionnaire	Educational Testing <sup>a</sup>	Anthropometrics
Côte d'Ivoire	1985/86	4	1600	year-round	rotating	full	yes	yes	no	none	all
Peru 1985	1985/86	1	5120	year-round	no	full	yes	yes	no	none	none
Ghana	1987/88	2	3200	year-round	no	full	yes	yes	health/ed	9-55,m,r,R	all
Mauritania	1988	2	1600	year-round	no	full	yes	yes	no	none	all
Bolivia	1989	5	10,000	wave	no	truncated	no	no	no	no	no
Jamaica	1988	8	2000-6000	wave	some	truncated	no	no	sometimes	7-18,m,r	child < 5
Morocco	1990/91	1	3360	year-round	no	full	yes	yes	health	9-69,r,m	< 11, parents
Pakistan	1991	1	4800	year-round	no	full	yes	yes	health, ed	no	< 5, mother
Peru 1990/91/94	1991	1	1500/2200/ 3500	wave	85/90/91/ 94 Lima; 91-94 elsewhere	full	no	no	no	none	child < 5
Venezuela	1991	3	14,000	wave	yes	truncated	no	no	no	no	child < 5
Vietnam	1992/93	1	4800	year-round	no	full	yes	yes	no	none	all, h/w/c
Nicaragua	1993	1	4200	wave	no	truncated	yes	yes	no	none	child < 5
Guyana	1992/93	1	5340	wave	no	truncated	no	no	no	none	child < 5
Tanzania - national	1993	1	5200	wave	no	truncated	yes	no	no	no	no
Tanzania - Kagera Region	1991	4	800	year round	4 period	expanded	yes	yes	health, edu, healers, NGOs	none	all
Russia	1992	4	6500	wave	yes	truncated	yes	some quarters	no	no	questionable quality
South Africa	1993	1	9000	wave	no	full	yes	yes	no	some	child < 5
Kyrgyzstan	1994	1	2000	wave	no	truncated	yes	no	no	no	questionable quality
Romania	1994/95	continuous	36,000	continuous	yes	full	no	no	no	no	child < 5
Ecuador	1994	1	4500	wave	no	full	no	yes	no	no	no

Note: a. In the column "Educational Testing": m = mathematics, r = reading, R = Ravens Progressive Matrices Test.

Table 8: Implementation of LSMS by Country and Modules

Country	Household Roster	Housing Characteristics	Education	Health	Employment and Personal Activities	Migration	Selection of Respondents for Second Visit	Agricultural Activities	Non-Agricultural Household Enterprises	Expenditures on Non-Food Items	Expenditures on Food and Consumption of Food Produced by the Household	Fertility	Other Income	Savings and Borrowing	Anthropometric Data (Height and Weight)
Côte d'Ivoire	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peru 1985	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Ghana	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mauritania	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bolivia	✓	✓	✓	✓	✓	✓				✓	✓	✓			
Jamaica	✓	✓	✓	✓	✓					✓	✓		✓		✓
Morocco	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pakistan	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Peru 1990/91/94	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
Venezuela	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓		✓
Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nicaragua	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓		✓
Guyana	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
Tanzania - national	✓	✓	✓	✓				✓		✓	✓				
Tanzania - Kagera Region	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Russia	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
South Africa	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Kyrgyzstan	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
Romania	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Ecuador	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	

Third, the direct welfare outcome measures included in the surveys differ. Anthropometric data were gathered for all household members in Côte d'Ivoire, Ghana, Mauritania, Tanzania, and Viet Nam for children only in Jamaica and Nicaragua, for children and mothers in Pakistan, for children and both parents in Morocco, and were not included at all in Peru and Bolivia. In Vietnam, arm circumference is gathered as well as height and weight. Math and reading tests have been given in Ghana, Morocco and Jamaica. The test, age group tested, and location of test administration all differed substantially.

Fourth, the LSMS surveys vary substantially in terms of the price, community, and facility questionnaires that accompanied the household questionnaire. In the first four surveys (Côte d'Ivoire, Peru 1985, Ghana, and Mauritania), price and community questionnaires were administered in rural areas (in Ghana, urban areas were also covered). However, the Jamaican and Peruvian 1990/91 LSMS surveys had neither type of questionnaire.<sup>16</sup> More recent surveys (Pakistan, Vietnam and Morocco) have both community (again, rural only) and price questionnaires. In addition, special health facility questionnaires have been administered in Côte d'Ivoire, Ghana, Jamaica and Morocco. Special school questionnaires have been administered in Ghana and Jamaica and (in the form of an expanded community questionnaire) in Morocco.

Fifth, two LSMS surveys are actually linked to other surveys. The Jamaican LSMS revisits a sub-sample of the households from the Labour Force Survey. Likewise, the Guyanese LSMS will revisit a sub-set of the households used in the Household Budget Survey. Rather than repeat information collection, the LSMS data sets must be merged with those from the other surveys in order to get full coverage of modules.

Sixth, the sample size varies substantially. The median is 4200 households, but the Tanzanian Kagera Region survey includes only 800 households while the Bolivia sample is 10,000 households.

Seventh, the organization of the field work differs substantially. Rather than the prototype with its year round field work, close supervision, two-visit interviews and concurrent data entry, several of the newer surveys, particularly in Latin America and Caribbean countries, have reverted to more traditional methods of field work organization with large teams fielded for short periods and data entry done after, and separately from, the field work.

Eighth, there is a difference in how long or often the survey is to be done. Some surveys are one-shot (Peru 1985, Vietnam, Pakistan), some are to be done twice, first before and then after a project's implementation (Nicaragua, Venezuela) and some on-going annually (Jamaica, Bolivia, Romania).

### **The Rules Governing Data Use**

In most cases, LSMS surveys have been carried out by the national statistical agencies of the countries in which they were done and are the property of those agencies. Usually, the statistical agencies must grant written permission for other researchers to use LSMS survey data.

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16. In Jamaica and in the 1990 Lima only sample for Peru, there was little regional price variation. For Peru 1991, it was determined to use price data from other sources.

The willingness of these agencies to release their data varies greatly from country to country. In some countries such requests have never been denied, while in others permission has never been granted. Table 9 summarizes the rules and track record as they stand as of early 1995. It should be noted that initiatives are under way to make data access more open in several countries. In several other cases, the data are so newly available that a track record for data access has not yet been firmly established. Readers interested in a country with restricted data access may wish to verify whether the policy or its implementation has changed since this writing.

Most of the access agreements specify that the researcher may not pass the data to third parties for any reason. It should be noted that permission to use the survey data is usually given for a specific research purpose. Further use of the data for new research projects will usually require subsequent letters of approval from the government. Governments usually request that copies of research reports resulting from data analysis be sent to them. Sometimes this is only to ensure that they get a chance to read and learn from the reports. In other cases they reserve the right to comment on them before publication. Acknowledgment by the researchers of the source of the data is usually requested, and always diplomatic.

Likewise, the World Bank requests that papers using LSMS data be sent to the division which is the focus of LSMS work (currently PRDPH). This helps PRDPH in various ways. First, it can determine whether certain areas are under-researched and take action either to promote such research or to discover whether it stems from a weakness in survey design. Second, the research often contains clues to the strengths or weaknesses of survey and questionnaire design that should feed back into decisions for future surveys. Third, by staying aware of the research being conducted on LSMS surveys, the division can help researchers avoid duplication of very recent or on-going work.

The World Bank (and sometimes other agencies that helped to sponsor the surveys) usually has the right to use the data from LSMS surveys for its various operational and research purposes, both by staff and consultants. As is standard with other types of information, consultants are not permitted to use LSMS data obtained in the course of a World Bank consultancy for non-World Bank purposes unless explicit permission is granted. In addition to the requirements imposed by the country, any work done by World Bank staff or consultants which is to be published outside the World Bank must follow standard Bank clearance procedures.<sup>17</sup>

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17. Specifically, the country department must be allowed to comment on such documents. At minimum this ensures that the publications would not cause a disruption in the relations between the World Bank and the government in question. At its best, the need for later clearance prompts researchers to stay in touch with operational staff. The research can then benefit from sources of information complementary to the survey, and the operations staff can be apprised of the progress of the research and its possible applications as part of their work with the government in defining policies and projects.

*Table 9: Data Access Rules and Track Record*

<i>Country</i>	<i>Access Policy</i>	<i>Track Record for Obtaining Government Permission</i>		<i>Remarks</i>
		<i>Approval</i>	<i>Timeliness</i>	
Côte d'Ivoire	government permission required	frequent	2 or more weeks	new policy may be forthcoming soon
Peru 1985	open access	n.a.	n.a.	new policy adopted in 1993
Ghana	government permission required	historically rare, recently better	slow	new policy may be forthcoming soon
Mauritania	government permission required	unknown	unknown	
Bolivia	government permission required	changeable	changeable	there have been several changes in management and staff
Jamaica	government permission required	usual	2-12 weeks	
Morocco	government permission required	rare	slow	
Pakistan	open access	n.a.	n.a.	new policy adopted in 1994
Peru 1990/91/94	open access	n.a.	n.a.	
Venezuela	government permission required	unknown	unknown	
Vietnam	government permission required	unknown	unknown	researchers with long stays in country have been able to get data
Nicaragua	government permission required	unknown	unknown	
Guyana	government permission required	unknown	unknown	
Tanzania - national	open access	n.a.	n.a.	will be available on Internet in 1995
Tanzania - Kagera Region	open access	n.a.	n.a.	data will be available in 1996
Russia	open access	n.a.	n.a.	
South Africa	open access	n.a.	n.a.	
Kyrgyzstan	open access	n.a.	n.a.	
Romania	not yet established	unknown	unknown	
Ecuador	open access	frequent	fast (2 days)	letter required but approval automatic

*Note:* "Unknown" means that the data are too new for a track record to be established.  
n.a. means not applicable.

## PRDPH Data Dissemination Activities

The researcher interested in using an LSMS data set first has to determine from whom he or she should try to obtain the data and documentation. Broadly speaking, the alternatives are from the government of the country to which they pertain<sup>18</sup> or from the World Bank.<sup>19</sup> Users resident in the country may find it easy to approach the national statistical agency. For some international users, communications may be easier with the World Bank and so they may find it easier to get data from the World Bank. In a few cases, the data are held only by the country and not by the World Bank.

PRDPH's role in disseminating data is described in the following paragraphs (see Box 2 for PRDPH's addresses). For access via the World Bank, the data and documentation are held in PRDPH for most of the LSMS-type surveys discussed in this paper. In some cases, these are also held in the country department that developed the survey and duplicate copies exist at PRDPH; thus they are available from either place. PRDPH makes every effort to ensure that where other offices of the Bank also disseminate the data for a particular country that the same rules of access are followed and that the same data sets and documentation are made available.

In cases where government permission to use the data is required, the researcher should send a one or two page description of the proposed research to the address listed in Annex B. The request should specify which country and year of data are required. The proposal should include a description of the policy relevance to the country of the proposed research. It is convenient to request the government to send a copy of the permission to use the data to both the researcher and to the "LSMS" in the Poverty and Human Resources Division of the Policy Research Department (PRDPH).

When the researcher has obtained written permission to use the data, it should be sent, with the data requirements and abstract, to the "LSMS" in the Poverty and Human Resources Division of the Policy Research Department (PRDPH). The World Bank will then make data sets available. A small fee is charged to help cover the costs of the time spent generating the data sets and documentation. The data are usually provided on diskettes in ASCII, SAS-portable files, or STATA. ASCII data sets include dictionaries with variable names. SAS portable and STATA files include variable names and labels when they exist. Typically included with all three of the data types are ASCII files containing SAS format files for many of the variables.

The extent and format of documentation available varies from country to country. Basic documentation usually includes the questionnaires, format files and/or code books, brief

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18. For some countries, the surveys were carried out by universities or private survey firms rather than by the government. The agency that carried out the survey is the appropriate in-country contact.

19. In some cases, international agencies other than the World Bank helped to finance the collection or analysis of the data and may also have copies and the right to disseminate it.

*Box 2. For Further LSMS Information*

To receive further information on any of the surveys supported by PRDPH, the reader should do one of the following:

check the LSMS home page: LSMS Home Page  
<http://www.worldbank.org/html/research/prdph/lms/lms/home.html>

PRDPH is experimenting with posting information on the Internet. We will keep a version of this paper posted, revising it as new surveys become available or data access policies change. We hope to gradually post the Basic Information documents for most countries, and for cases where we have the electronic files, the questionnaires, manuals, etc. We are also exploring whether we can post the actual data sets themselves.

send paper mail to: LSMS Surveys  
PRDPH  
World Bank  
1818 H Street, N.W.  
Washington, D.C. 20433

send faxes to: LSMS Surveys  
PRDPH  
202-522-1153

send electronic mail to: [LSMS@worldbank.org](mailto:LSMS@worldbank.org)

Researchers are urged to contact the above "institutional" addresses and to be specific in the questions asked. This will help PRDPH to provide the best service. First, we can assign the handling of the request to the most appropriate member of the LSMS team. Second, we can better ensure that the request is handled promptly. Requests addressed to individuals often get slower handling because the addressee may no longer be on the LSMS team, or may be out of the office for several weeks. In general, we try to reply to simple requests for information within a few days. More complex questions or the provision of data sets themselves may take somewhat longer, depending on the flow of requests and other work.

descriptions of any constructed variables made available<sup>20</sup> and brief sampling information. For some users, more detail will be required, such as the manuals for the interviewers, supervisors or data entry operators. Where the information is readily available, the division will supply it for a small fee to cover the costs of photocopying and mailing.

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20. PRDPH does not routinely and uniformly construct variables such as aggregate household consumption or welfare. Individual researchers working on the data, however, have often put their variables into the "public" use files as a service to those who wish to use them. The documentation of the variables construction is limited, and no further support for their use should be expected.

PRDPH has recently tried to systematize its documentation in order to provide more uniform, faster, and better service to data users. Providing more complete documentation should also significantly lower the start-up costs to the analyst in using a data set. Table 10 provides a summary of the availability of documentation as of early 1995. By late 1995, it is hoped that adequate basic documentation will be packaged for the most commonly used surveys. In the intervening period, the user may find the degree of detail, format and speed with which information can be supplied better for some surveys than for others.

The World Bank will usually not provide access to very recent data. This allows a period for their quality to be checked and for them to be formatted and documented to minimum standards. Often during this period the World Bank researchers will also produce constructed variables for aggregate household consumption, anthropometry, linking files for the various questionnaires, etc. These are then usually made available to all future users. The period between the division's first receipt of the data and their release to outside researchers varies depending on the complexity of the survey, the divisional work program and other factors, but usually ranges between six and eighteen months.

Table 10: Documentation Held by PRDPH

Country	Completeness of Background Information	Languages of Availability		
		Questionnaires	Basic Information Documents	Manuals, etc.
Côte d'Ivoire	excellent	English, French	English, French	mixed
Peru 1985	excellent	English, Spanish	English, Spanish	Spanish
Ghana	excellent	English	English	English
Mauritania <sup>a</sup>	poor	French	n.a.	French
Bolivia <sup>b</sup>	medium	Spanish	Spanish	Spanish
Jamaica	excellent	English	English	English
Morocco <sup>c</sup>	fair	French	English	French
Pakistan	excellent	English, Urdu	English	English
Peru 1990/91/94	excellent	Spanish	English (90,91) Spanish (91,94)	Spanish
Venezuela <sup>b</sup>	poor	Spanish	n.a.	Spanish
Vietnam	excellent	English, Vietnamese	English	English, Vietnamese
Nicaragua	excellent	Spanish	English	Spanish
Guyana <sup>d</sup>	excellent	English	English	English
Tanzania -national	good	English, Swahili	English	English
Tanzania -Kagera Region <sup>d</sup>	excellent	English, Swahili	English	English
Russia <sup>d</sup>	good	English, Russian	English	n.a.
South Africa	excellent	English	English	English
Kyrgyzstan <sup>d</sup>	good	English, Russian	English	n.a.
Romania <sup>d</sup>	good	English, Romanian	English	mixed
Ecuador <sup>d</sup>	excellent	Spanish	English, Spanish	Spanish

Note: a. PRDPH does not support this survey.  
b. As early as 1995, PRDPH has only some of the years of data. We believe that in-country users have gotten access easily from the national statistical agency to all years.  
c. PRDPH has not received the full data set from the government of Morocco.  
d. Planned to be on stream sometime in 1995 or 1996.

## **Annex A: An Illustration of a "Prototypical" LSMS Questionnaire: A Summary of the Questionnaire Design for Ghana**

This annex describes the household, community and price questionnaires of Ghana's LSMS survey. While there is no formal prototype for the LSMS, the questionnaires used in Ghana come as close as any to being a prototype. They are described in this annex with that purpose. Annotated versions of the Côte d'Ivoire and Tanzanian questionnaires are available in Grootaert (1988) and Ainsworth and others (1992). Côte d'Ivoire questionnaire might also be called "prototypical" LSMS. The Tanzania questionnaire is also similar to the "prototype" but with more detail in some modules than usual.

The Ghana LSMS was first conducted in 1987-88. This nationwide survey gathered individual and household level data using a multi-purpose household questionnaire. Community level data were collected using a community questionnaire in rural areas and a price questionnaire was used in both urban and rural areas. In 1988-89 the household, community and price questionnaires were repeated.<sup>21</sup>

### **Household Questionnaire**

The household survey contains modules (sections) to collect data on household demographic structure, housing conditions, schooling, health, employment, migration, expenditure and income, household non-agricultural businesses, agricultural activities, fertility and contraceptive use, savings and credit, and anthropometric (height and weight) measures.

The individual designated by the household members as the household head provided responses to questions on general household information, or indicated which member would know the answer. If the household head was not available, a member of the household who was able to provide information on household affairs was selected. In most sections of the questionnaire, each member of the household was asked to respond for himself or herself, except that parents were allowed to respond for younger children.

The household questionnaire was completed in two interviews two weeks apart: Sections 0-8, 16A, 17A and 17C were conducted in the first interview.<sup>22</sup> Sections 9-15, 16B and 17B were conducted in the second interview. The survey was designed so that more sensitive issues such as fertility and savings were discussed near the end. The content of each module is briefly described below.

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21. Additional community level data were collected through a health and family planning facilities questionnaire, a pharmacy questionnaire, and a school questionnaire. Additional household and individual level data relevant to education were also collected, including testing of household member's mathematics, reading and abstract thinking skills. These exercises are not at all prototypical and are thus not described in this annex.

22. Sections 17A, 17B, and 17C apply only to those households in the 1988-89 survey that participated in the collection of cognitive skill test score data.

## **I. FIRST INTERVIEW**

### **Section 0 SURVEY INFORMATION**

- 0A HOUSEHOLD HEAD AND RESPONDENT INFORMATION**
- 0B SUMMARY OF SURVEY RESULTS**
- 0C OBSERVATIONS AND COMMENTS**

The date of the interview, the religion and language of the household head, the language used by the respondent and other technical information related to the interview are noted.

### **Section 1 HOUSEHOLD MEMBERSHIP**

- 1A HOUSEHOLD ROSTER**
- 1B INFORMATION ON PARENTS OF HOUSEHOLD MEMBERS**
- 1C CHILDREN RESIDING ELSEWHERE**

The roster in Section 1A lists the age, sex, marital status and relation to household head of all people who spent the previous night in that household and for other household members. The household head is listed first and receives personal id # 1. Household members were defined to include "all the people who normally live and eat their meals together in this dwelling." Those who were absent more than nine of the last twelve months were excluded, except for the head of the household and infants less than three months old. An historical calendar prepared for the 1984 population census was used to help respondents accurately date births and other long-ago events for which documentation could not be produced.

Information on schooling and occupation for non-resident (including deceased) parents of household members and on the age, sex, and schooling of (currently living) non-resident children of household members were collected in Sections 1B and 1C, respectively.

### **Section 2 HOUSING**

- 2A TYPE OF DWELLING**
- 2B HOUSING EXPENSES**

Section 2A contains the type of dwelling and years at current residence. Household expenses, including rent and utilities, source of water, cooking fuel and light, and type of toilet are in Section 2B.

### **Section 3 SCHOOLING**

- 3I ATTENDANCE**
- 3II EXPENSES**

In Section 3I, data were collected for each household member 5 years or older on self-reported literacy and numeracy, school attendance, completion and current enrollment. For all individuals who attended school during the past 12 months, data were collected on expenses, scholarships, and distance and travel time to school in Section 3II. The translation of the highest grade completed into the number of years of schooling is provided in Appendix F.

## Section 4 HEALTH

Individual members and parents of children were asked to respond to the health questions in Section 4. The respondent reported on at most one illness or injury, if any, sustained in the last four weeks, the type, location and cost of any care sought, and the amount spent in the last twelve months on vaccinations, Maternal and Child Health or other health consultations. Women age 15 and older were asked how many live births they have had.

## Section 5 ECONOMIC ACTIVITIES

- 5A TIME USE AND JOB SEARCH
- 5B MAIN JOB DURING THE PAST SEVEN DAYS
- 5C SECONDARY JOB DURING THE PAST SEVEN DAYS
- 5D SEARCH FOR ADDITIONAL EMPLOYMENT
- 5E MAIN JOB DURING THE PAST TWELVE MONTHS
- 5F EMPLOYMENT HISTORY
- 5G SECONDARY JOB DURING THE PAST TWELVE MONTHS
- 5H OTHER ACTIVITIES

All individuals age seven and older were asked to respond to the economic activity questions in Section 5, beginning with the questions on the nature of their work in the last seven days. For persons that did not work in last seven days, data were collected on job search, reservation wage, and reason for not seeking employment. For work in last seven days, information was collected on hours, length of employment, type of employer, taxes, distance and travel time to work, money and in kind compensation, and benefits. Similar questions were asked on the secondary job in the last seven days. Questions were asked on search for additional employment, including the kind of work sought and the lowest acceptable wage. If main work in the last twelve months was different from the main or secondary job in the last seven days, the complete set of questions was answered for that work as well. Type of work and years of experience at any work prior to that of the main job in the last twelve months were collected. Again, if there was a secondary job in the last twelve months different from the other jobs, data on work conditions and compensation were collected. Days and hours spent doing household chores were collected for each household member age seven and older.

## Section 6 MIGRATION

All household members age seven or older also responded to the questions on migration in Section 6: If not born at current residence, was place of birth a village, town, city, or other? How old were the individuals when they left? What was the main reason for leaving? What was the main reason for coming to the current place of residence? From what region did the person come to the current place, was it a village, town or city? In how many places has the person lived for periods of more than three months in his or her life?

## Section 7 RESPONDENTS CHOSEN FOR ROUND TWO (the second interview)

In Section 7, the principal respondent was asked to identify 1) the household member who knows the most about all the agricultural and livestock activities of the household, 2) the household member who shops for food and 3) the household member who knows the most about

the other household expenses, income and savings of household members. The respondent was also asked to identify the three most important businesses and trades belonging to the household. Finally, a woman was selected at random from among the women in the household between the ages of 15 and 50 to respond to the fertility module. All these women would then be interviewed in the second round (interview) of the survey.

## Section 8 CHARACTERISTICS OF HOUSING

Section 8 notes the construction material of the household's dwelling's walls, flooring, roof and windows, and the floor area in square meters.

## II. SECOND INTERVIEW

### Section 9 AGRO-PASTORAL ACTIVITIES

9A LAND

9B CROPS

9C AGE OF TREE CROPS

9D FARM INPUTS

9E SALES OF FOOD PRODUCTS MADE FROM HOMEGROWN CROPS

9F LIVESTOCK

9G ANIMAL PRODUCTS

9H EXTENSION CONTACTS FOR LIVESTOCK

9I LIVESTOCK EXPENDITURES

9J HAND TOOLS

9K FARMING EQUIPMENT

In Section 9 the respondent was the household member identified in Section 7 as the one most knowledgeable about the household's agricultural and pastoral activities. Most questions refer to the past twelve months. Because interviews were conducted throughout the year, the prior twelve months differs among households. This also means that crop production (harvest) over that time period may be from the previous agricultural cycle while the inputs correspond to the current agricultural cycle. Section 9A covers land owned, rented and cultivated by the household, land sales, gifts and trades, and land sharecropped in and out. Section 9B collects information on acreage, production, distribution, loss to pests and market value of 32 crops. Section 9C notes the proportion of tree crops in each of the three categories: 1) too young to produce, 2) in full production, and 3) near the end of productive life. Section 9D surveys farm inputs, including seeds, young plants, fertilizer, manure, herbicides and insecticides, and twine and sacks. Information was collected on the amounts used, costs, and source of credit for purchase. Information on expenses for transport, storage, paid labor, rented animals, fuel, and machinery rental and repair was also collected. Sharecropping in and out, including the proportion of harvest exchanged, were also noted, as was contact with an extension agent.

Section 9E contains information on processing of homegrown crops for sale. Who did the processing? For how many months of the year? How often was it sold? How much was it sold for? How much was spent on tools, transport and labor? Section 9F contains data on the value, sale, consumption and purchase of livestock in the last twelve months. Section 9G asks about the processing for sale of animal products produced by the household, including the

value of the amount sold. Contact with animal husbandry or veterinary extension workers in the past twelve months is covered in section 9H. Expenditures on, and source of, supplies and services for livestock are noted in Section 9I. Ownership of hand tools is surveyed in Section 9J. Section 9K surveys ownership, value, sale and purchase of heavier farm machinery including tractors, ploughs, cart, vehicles and draft bullocks.

## **Section 10 NON-FARM SELF-EMPLOYMENT**

- 10A WORKING CONDITIONS
- 10B EXPENDITURES
- 10C REVENUES
- 10D BUSINESS ASSETS

Section 10 gathers data on Non-Farm Self-Employment for the three most important enterprises operated by the household. The respondent for each enterprise is the household member most familiar with its operation (as identified in Section 7). Data are gathered on the ownership, number of employees, and type of employee compensation for each enterprise. For each business, expenditures over the last twelve months on wages, raw materials, and taxes are collected. The respondent was asked how much, in money and goods, was received from sales and how much of the enterprise's product was consumed by the household since the first interview. Information on ownership, sales and purchases of assets--buildings, land, vehicles, tools and durable goods-- in the last twelve months is also collected.

## **Section 11 NON-FOOD EXPENDITURES & INVENTORY OF DURABLE GOODS**

- 11A DAILY EXPENSES
- 11B ANNUAL EXPENSES
- 11C INVENTORY OF DURABLE GOODS
- 11D EXPENSES FOR REMITTANCES

Section 11 collects information on household expenditures from the household member identified in Section 7 as the one most able to answer non-food expenditure questions. Respondents were asked to recall the amount spent since the first interview (approximately two weeks) on daily expenses such as lottery tickets, cigarettes, soap, personal care products, cooking fuel, matches and candles, and gasoline. Expenditures on other goods, both in the last two weeks *and* the last twelve months, were collected for shoes, cloth, clothing repairs, public transport, paper supplies, furniture, kitchen equipment, medical services, domestic servants, jewelry, entertainment and other goods (see household questionnaire). Purchase price, length of ownership and resale value of durable goods owned were collected in Section 11C. Relation and location of the recipients of remittances sent out of the household were noted in Section 11D (remittances received by the household are recorded in Section 14A). Susu contributions are recorded in this section as an expense. ("Susu" is a rotating savings scheme in which participants contribute a fixed sum regularly. The total is then allocated among the participants in turn.) Income from susu is recorded in Section 14.

## **Section 12 FOOD EXPENSES AND HOME PRODUCTION**

- 12A FOOD EXPENSES
- 12B CONSUMPTION OF HOME PRODUCTION

In Section 12A the amounts spent since the first interview (about two weeks) on 60 food items were collected. In addition, questions were asked on the number of months the item was purchased during the past twelve months, the frequency of purchases within a month, and the amount spent each time were collected for the same 60 food items. This allows for a rough calculation of annual expenditure. Section 12B asks the amount consumed and market value of foods grown or raised by the household in the last twelve months.

### **Section 13 FERTILITY**

#### **13A FERTILITY HISTORY**

#### **13B FAMILY PLANNING**

In each household on woman, randomly selected as explained in Section 7, responded to the questions in Section 13. The woman was asked if she had been pregnant and, if so, had she given birth. Women who respond that they have are asked the birth date and sex of all children they have given birth to, including those who did not survive. If the child is not alive the woman is asked how long it survived. The woman is asked about the birth and breastfeeding of her last child, the age at which she started cohabiting, and the number of miscarriages she has had. Section 13B gathers information on knowledge, use, source and cost of six modern and six traditional methods of family planning.

### **Section 14 OTHER INCOME**

#### **14A INCOME FROM REMITTANCES**

#### **14B MISCELLANEOUS INCOME**

Section 14 collects data on money and goods that come into the household as remittances or from other sources such as employee welfare funds, dowries or susu.

### **Section 15 CREDIT AND SAVING**

#### **15A MONEY AND GOODS LENT AND BORROWED**

#### **15B LOANS CONTRACTED**

#### **15C SAVINGS**

Section 15 collects information on the amount of indebtedness of household members to people or institutions outside the household. If money or goods have been borrowed and repaid by any household member in the last twelve months then the details of those loans are collected. Information includes the source and amount of loan, interest, side payments, collateral, repayment schedule, reason for borrowing, and number of loans from the same source. The household is asked to list the location of its savings, if any, including bank, housing saving bank, rural savings bank, foreign currency account, other bank accounts, bonds, stocks and home. The total value of all savings accounts is noted.

### **Section 16 ANTHROPOMETRICS**

#### **16A ROUND ONE**

#### **16B ROUND TWO**

Anthropometric measurements are done for each household member. Section 16A measurements were taken in the Round One interview and Section 16B measurements were taken

in the Round Two interview. Data were collected on the household member's sex, date of measurement, weight and height. It was also noted if female respondents were pregnant or breastfeeding. The survey was designed so that 20 percent of the respondents, including those whose measurements deviated substantially from the norm, would be re-measured and re-weighed in Round Two. Due to a data-entry program error not connected with the accuracy of the data, the majority of respondents were re-weighed and re-measured in the first three months of the first year. The error was subsequently corrected.

## **Community Questionnaire**

A Community questionnaire was administered by the team supervisor and completed with the help of village chiefs, teachers, government officials and health care workers. Supervisors were instructed to conduct interviews for all rural areas and in other areas where agricultural pursuits were followed. The questionnaires were completed for almost all rural, most semi-urban clusters and one urban cluster. (Cluster refers to a group of 16, 32 or 48 households within one geographic area that were surveyed. Cluster is explained in Section 3 of this document.) Where the households in one cluster were located in more than one distinct community, questionnaires were completed for each community. In those cases, each community questionnaire contains a list indicating which of the households in that cluster belong to that community. Data were collected on a variety of topics as discussed below.

Section 1 (DEMOGRAPHIC INFORMATION) includes the population of the community, a list of principal ethnic groups and religions, the length of time the community has existed and whether or not it has grown. Section 2 (ECONOMY AND INFRASTRUCTURE) questions include a list of principal economic activities, access to a motorable road, electricity, pipe-borne water, restaurant or food stall, post office, bank, daily market and public transport. There are also questions on employment, migration for jobs, and the existence of community development projects. Section 3 (EDUCATION) asks distance to primary and middle schools. For up to three primary schools, the nearest middle school and the nearest secondary school, information is obtained on whether it is public or private, whether it is for boys or girls, or both, how many classes there are, and when it was built. Enrollment rates and reasons why children do not attend school are also collected. Section 4 (HEALTH) collects data on distance and travel time to the nearest of each of several types of health workers (doctor, nurse, pharmacist, midwife, family planning worker, community health worker, traditional birth attendant and traditional healer) and each type of several types of health facilities (hospital, dispensary, pharmacy, maternity home, health post and family planning clinic). The questions in Section 5 (AGRICULTURE) include the type of crops grown in the community, how often and when they are planted and harvested, and how the harvest is generally sold. This section also includes questions on the availability of an extension center, agricultural cooperatives, and machinery, and questions on the use of pesticides and irrigation. Qualitative data on the last year's rainfall, the local land market, the prevalence of sharecropping, and agricultural wages in the community are also gathered.

In several sections respondents were asked to list the problems experienced by the community. The responses were noted and codes were assigned after all the questionnaires had been entered. These codes are provided in Section 3 of Appendix G. In clusters that were surveyed in both years of the GLSS (1987-88 and 1988-89), the community questionnaire was not administered in the second year.

### **Price Questionnaire**

A Price questionnaire was to be completed for each cluster. Prices from up to three vendors are collected for 28 food, 6 pharmaceutical and 13 other non-food items. The items were selected because they are important in most household budgets and because they are usually available in most areas of the country. Weighing scales were used to determine the exact weight of food items.

In clusters that contained more than one locality, a questionnaire was completed for the market closest to each locality. The price questionnaire was administered in both years to half of the clusters that were surveyed in both 1987-88 and 1988-89.

## Annex B: Addresses of Statistical Agencies

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