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A Long-Term Census and Survey Program for Ghana

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THE GHANA STRATEGY SUPPORT PROGRAM (GSSP)

WORKING PAPERS

ABOUT GSSP

IFPRI's Ghana Strategy Support Program (GSSP) was launched in 2005 to address specific knowledge gaps concerning agricultural and rural development strategy implementation, to improve the data and knowledge base for applied policy analysis, and to strengthen the national capacity for practical applied policy research. The primary objective of the Ghana Strategy Support Program is to build the capabilities of researchers, administrators, policymakers, and members of civil society in Ghana to develop and implement agricultural and rural development strategies. Through collaborative research, communication, and capacity-strengthening activities and with core funding from the U.S. Agency for International Development/Ghana (USAID), GSSP works with its stakeholders to generate information, improve dialogue, and sharpen decision-making processes around the formulation and implementation of development strategies.

ABOUT THESE WORKING PAPERS

The Ghana Strategy Support Program (GSSP) Working Papers contain preliminary material and research results from IFPRI and/or its partners in Ghana and have not been peer reviewed. They are circulated in order to stimulate discussion and critical comment. The opinions are those of the authors and do not necessarily reflect those of their home institutions or supporting organizations.

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Acronyms

CPI	Consumer Price Index
CWIQ	Core Welfare Indicators Questionnaire
EA	Enumeration Area
FAO	Food and Agriculture Organization of the United Nations
GAPS	Ghana Agricultural Production Survey
GDHS	Ghana Demographic and Health Survey
GLSS	Ghana Living Standards Survey
GPRS II	Growth and Poverty Reduction Strategy II
GSS	Ghana Statistical Service
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (German Technical Cooperation Agency)
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization of the United Nations
ISSER	Institute for Statistical, Social and Economic Research, University of Ghana
LFS	Labor Force Survey
MDGs	United Nations Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoFA	Ministry of Food and Agriculture
MRCLS	Multi-Round Crop and Livestock Survey
MTDP	Medium-Term Development Plan
MTNDF	Medium-Term National Development Framework
NDPC	National Development Planning Commission
SNA	System of National Accounts
SRID	Statistical Research and Information Division (MoFA)
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Introduction

I visited Accra from August 31st to September 11th, 2009 at the request of the International Food Policy Research Institute (IFPRI), to help the Ghana Statistical Service (GSS) develop a 15-year census and survey program while consulting with key stakeholders. My specific terms of reference were to:

- Examine and review the series of household surveys conducted by the GSS since 1984.
- Review the monitoring and evaluation requirements in the Growth and Poverty Reduction Strategy II (GPRS II), the 5-year Ghana Statistics Development Plan, and data needed for other policymaking purposes.
- Based on the above, establish the need for censuses and regular household and business surveys: including the Ghana Living Standards Survey (GLSS), The Core Welfare Indicator Questionnaire (CWIQ), the Ghana Demographic and Health Survey (GDHS), the Multiple Indicator Cluster Survey (MIS), Labor Force Surveys (LFSs), Agriculture surveys, and other special purpose surveys or modules to therefore recommend the most appropriate frequency for such surveys and frequency on which GPRS indicators should be measured.
- Critically examine the general survey organization and the institutional arrangements adopted during all previous surveys and then propose the most cost-effective methods and approaches to be adopted in future surveys (including recommendations on an effective institutional setup). Comparisons among the different approaches should be based on experience in other countries, taking into account Ghana's specific conditions.
- Examine the extent to which regional and district offices should be utilized in conducting these surveys without compromising the quality of data collected or the size of a permanent field staff that will be required.
- In consultation with key stakeholders in the data collection effort and development partners, draw up a 15-year survey program indicating the modules to be covered in each survey and the estimated total resource envelope necessary to carry out each survey. The appropriate duration of each survey should be shown for the entire 15 years' period.
- Ensure the plan takes into consideration recommendations from any other similar work in other sectors.
- Present the draft census and survey program to GSS and key stakeholders for comments, to guarantee they fully address Ghana's development concerns.

To achieve these objectives, I examined the series of recent household and business surveys conducted by the GSS in terms of content, periodicity, geographic resolution, budget, funding, management, and logistics. I met a large number of people at the GSS, the government of Ghana, Ghanaian academic institutions, and development partners. Toward the end of my visit, I presented my preliminary conclusions at a meeting held at the GSS headquarters.

I presented a preliminary draft report shortly after the September mission and received several comments on it from various users of household survey data, both from the government of Ghana and development partners. Many of them proposed to expand the scope of the original effort and to have it also include data collection efforts in the fields of agriculture and business statistics, in addition to household surveys.

I tried to address these concerns in a follow up mission to Accra, specifically focused on agriculture censuses and surveys. This mission was sponsored by the German Technical

Cooperation Agency (Deutsche Gesellschaft für Technische Zusammenarbeit GmbH, GTZ) and took place from May 16 to 28, 2010. It concluded with a meeting with GSS data users at the National Development Planning Commission in the morning of May 27, and a video conference with World Bank stakeholders in Washington, D.C., in the afternoon of the same day.

This new version of the report summarizes my final conclusions. It contains new material on agriculture and business statistics, and an effort to quantify the cost of the proposed program of household surveys and censuses. I have also edited parts of the previous draft.

People I met

In my first mission I met with Government Statistician Dr Grace Bediako and with senior staff members of the GSS including: Kofi Agyeman-Duah, the Director responsible for the last GLSSs and CWIQs; William Antiaye Addy, Head of the, Accounts Section; Francis Dzah, who is responsible for the forthcoming sample agriculture census; Magnus Ebo Duncan, the Economic Statistics Division Director; Ben S. K. Gadzekpo, accountant; Sylvester Gyamfi, Head of the Development and Management Group; Edith Mote, Chief Statistician, responsible for the last MICS; Marfo Nkansa, who was responsible for the last GDHS; and Stephen Tetteh Narh, Regional Statistician for the Greater Accra Region.

I also met some GSS clients from the government of Ghana and other Ghanaian institutions including: Emmanuel Aggrey-Fynn, Chief Executive Officer for Flafynn Consultants; Professor Clement Ahiadeke, Deputy Head of the Institute for Statistical, Social and Economic Research (ISSER), University of Ghana; Dr V. K. Nyanteng, Agricultural Development Consultant; Dr Reginald N. O. Odai, Head of the Research and Statistics Unit at the Ministry of Health; and Kenneth Owusu, Senior Technical Assistant to the General Director of the National Development Planning Commission (NDPC).

Among Ghana's development partners, I met: Selassi Amah D'Almeida, World Health Organization Health Economics Advisor; Sebastien Dessus, World Bank Lead Economist; Eunice Yaa Brimfah Dapaah, World Bank Senior Education Specialist; Jill Fletcher, World Bank statistician; Shashi Kolavalli, IFPRI Senior Researcher of Development Strategy and Government Division; Jane Mwangi, UNICEF Monitoring & Evaluation Specialist; and Peter Wondergem, USAID HIV/AIDS Advisor.

During the second mission, I also met Dr E. Aggrey-Fynn, agriculture consultant, and (via videoconference) with John Ngwafon, Senior World Bank Monitoring and Evaluation Specialist. Additionally I met with World Bank economists Ms. Louise Fox and Mr Andrew Dabalén and Mr Antoine Simonpietri, World Bank Senior Statistician. I worked in close collaboration with IFPRI's agriculture economists Messrs Ngeleza Guyslain and Esteban Quiñones.

I am deeply grateful for the time they devoted to our lengthy discussions on top of their heavy workload. All conversations were extremely informative and shed a great deal of light on the problem at hand.

Study strategy

This report has been defined in accordance with the initial terms of reference. I first tried to develop a vision of the long-term census and survey system through interviews held with diverse stakeholders. I thus identified the clients and their expectations. The next step was to pinpoint the raw materials and main products, in order to develop a vision of the Ghanaian census and household survey system as a production process. Finally, I evaluated GSS' resources, capabilities and limitations to conduct the process, and as a result, developed a business plan for the forthcoming years.

The Census and Household Survey Systems' main clients are the Ghanaian decisionmakers in the line ministries and international support agencies. The main stakeholders are the Ministries of Health, Education, and Agriculture. Demand for household survey data also comes from private individuals, private organizations, and research institutions in Ghana and abroad. Other elements of the Ghanaian statistical system, such as the National Accounts System and the Consumer Price Index, also need input from household-related information.

Clearly, the most relevant driving force for household survey-based data is the Ghana Growth and Poverty Reduction Strategy (GPRS), a document elaborated every three years by the National Development Planning Commission (NDPC). The GPRS II is being replaced by a successor plan, the Medium Term National Development Framework (MTNDF), which will cover a four year period.

The GPRS I was issued in 2003 and reflected a framework policy directed primarily towards the attainment of the United Nations Millennium Development Goals (MDGs).

GPRS II, the strategy paper prepared in the year 2005, was intended to introduce a shift in strategic focus, though many programs planned under it between 2006 and 2009 were consistent with the GPRS I. The central goal of this policy is to accelerate economic growth so that Ghana can achieve middle-income status within a measurable planning period.

The GPRS II emphasizes the implementation of guidelines and programs to achieve this economic growth through poverty reduction, with a clear objective to reach a per capita income of US\$1,000 in 2015.

To reach this objective, GPRS II fixes a minimum growth of 2.6%, inflation under 10%, and a maximum depreciation of Ghana's currency at 4% a year. It also establishes the importance of a monitoring and evaluation system, whose main goal is to make the program's follow-up easier, as well as to identify bottlenecks associated with the strategy's implementation.

The forthcoming Medium Term National Development Framework (MTNDF) draws on the longer-term 2015 plan which was developed under the National Development Planning Commission in 2008. It gives additional weight to good governance, water and sanitation, agriculture, and climate change. The new government is also supporting a more spatial approach to development planning as a means to addressing lagging regions, especially the North, as well as promoting growth poles in areas with high potential, and in particular, the Western Corridor, the Accra plains, and Accra city.

Indicators

This section summarizes the role of household surveys as a source of indicators for the monitoring and evaluation of government policy, with special emphasis on the indicators explicitly used to monitor the MDGs.

First, a word of caution may be useful. Centering the spotlight on a clear objective such as the production of indicators is extremely helpful, but excessively narrowing the focus on that objective raises the risk of concealing important components of the larger picture.

Welfare is a multi-dimensional phenomenon and without a proper understanding of the synergies underlying government actions and household behavior, the monitoring of indicators can become a sterile exercise. It could even be dangerous, since indicators are only symptoms, and remedial policies designed to change the symptoms rather than the causes can often be counter-productive, in medicine as well as in social policy¹

With the above proviso, assessing to what extent the components of the Ghana household survey system contribute to the monitoring of the MDGs indicators can be a useful starting point. This is done in Figure 1 below, where the rows represent the MDGs indicators that can be measured from household surveys² and the columns are the survey instruments already in place or under consideration. The symbols show whether each survey does or can measure each of the indicators.

The ongoing surveys reviewed in-depth were: the Ghana Living Standards Survey (GLSS), the Ghana Demographic and Health Survey (GDHS), the Multiple Indicator Cluster Survey (MICS), and the Core Welfare Indicators Questionnaire (CWIQ). I also looked at some of the surveys proposed for the future: agriculture censuses, agriculture surveys, and Labor Force Surveys (LFSs). The 2010 Population Census was also studied as a background element.

¹ There are many examples, but one should suffice to illustrate the problem. Assume that the prevalence of underweight children is found to be 20 percent. How can it be reduced? There is a wide variety of possible actions: improve access to clean water (so that kids do not lose weight due to diarrhea), implement maternal education campaigns, distribute oral rehydration tablets, directly distribute food to households with children, subsidize certain food items, etc. Which of these measures would have more short-term impact? Which is more likely to be cost-effective in the long term? How can leakage be avoided by effectively targeting the action to underweight children? What are the risks of creating other problems (such as child obesity), as a result? The answer to these questions requires a lot more household-based information than merely weighing and assessing the age of children, which is all that is needed to produce the indicator.

² Progress towards the eight MDGs is monitored with 48 indicators. 27 of them can potentially be measured with household surveys and many of them only with household surveys. The latter are represented in Figure 1 with their standard indicator numbers.

Figure 1: Household Surveys and Millennium Development Goals

(●:Measures indicator; ◐:can measure with some changes; ○: does not measure indicator)

Indicator	Survey requirements	Ghana Living Standards Survey (GLSS)	Ghana Demographic and Health Survey (GDHS)	Multiple Indicator Cluster Survey (MICS)	Core Welfare Indicator Questionnaire (CWIQ)	Labor Force Survey (LFS)	Agriculture Production Survey
1 Proportion of population below \$1 (PPP) per day	Total consumption of households	●	○	○	○	○	○
2 Poverty gap ratio [incidence x depth of poverty]	Total consumption of households	●	○	○	○	○	○
3 Share of poorest quintile in national consumption	Total consumption of households	●	○	○	○	○	○
4 Prevalence of underweight children under five years of age	Weight/height data on children < 5, large sample	●	●	●	○	○	○
5 Percent of population below minimum level of dietary energy consumption	Total food consumption of households (quantities)	●	○	○	○	○	○
6 Net enrolment ratio in primary education	Age and present enrolment in primary school.	●	●	●	●	○	●
7 Proportion of pupils starting grade 1 who reach grade 5	Past and present primary school enrollment.	●	●	●	●	○	●
8 Literacy rate of 15-24 year-olds	Ability to read and ability to write.	●	◐	◐	●	○	●
9 Ratios of girls/ boys in primary, secondary, tertiary education	School enrollment by level and gender.	●	●	●	●	○	●
10 Ratio of literate females to males of 15-24 year-olds	Ability to read and ability to write, gender, age.	●	●	●	●	○	●
11 Share of women in wage employ. in the non-agr. Sector	Gender, wage-employment, sector of employment.	●	◐	◐	●	●	●
13 Under-five mortality rate	Births, deaths, large sample	◐	●	●	○	○	○
14 Infant mortality rate	Births, deaths, large sample	◐	●	●	○	○	○
15 Proportion of 1 yr.-old children immunized against measles	Age, immunization history	●	●	●	○	○	○
16 Maternal mortality ratio	Indirect methods	◐	●	●	○	○	○
17 Proportion of births attended by skilled health personnel	Births, attendance by different personnel	●	●	●	●	○	○
18 HIV prevalence among 15-24 year old pregnant women	Blood testing of individuals, large sample	◐	◐	◐	○	○	○
19 Condom use rate of the contraceptive prevalence rate	Contraceptive use, specific question on condoms	●	●	●	○	○	○
20 Number of children orphaned by HIV/AIDS	Parental deaths, extra-household sample	◐	◐	◐	○	○	○
22 % of pop. using effective malaria prevention/treatment	Questions on bed nets and treatment of bed nets	◐	●	●	●	○	●
29 Proportion of population using solid fuels	Use of various solid fuels by households	●	◐	◐	●	○	●
30 % of pop. w/ sustain. Access to an improved water source	Access to water by source and household location	●	●	●	●	○	●
31 % of urban population with access to improved sanitation	Sanitation services, types used	●	●	●	●	○	●
32 Proportion of households with access to secure tenure	Home and land ownership, type of title	●	◐	◐	●	○	●
45 Unemployment rate of 15-24 year-olds, each sex and total	Age, gender, present employment, job search	●	◐	◐	●	●	○
47 Telephone lines, cellular subscribers per 100 population	Land line and cellular phones in household	◐	◐	◐	●	○	●
48 Personal computers in use and internet users/ 100 pop.	Ownership of computer equipment, use of internet	◐	◐	◐	●	○	●

Before analyzing each survey in-depth, a few features of the Ghanaian household survey system, as a whole, deserve to be mentioned because they are revealed by a simple visual observation of Figure 1:

- The GLSS is the only instrument that can deliver poverty-related indicators based on consumption.
- The MDGs indicators delivered by the GDHS and the MICS are basically the same.
- All of the MDGs indicators provided by the CWIQ can also be obtained from the other three major surveys (GLSS, GDHS, and MICS).

Each survey is analyzed below according to the following quality dimensions:

- Periodicity,
- Accuracy: regarding both sampling precision (related to geographic and temporal resolution) and non-sampling aspects (related to instruments, staffing, and supervision),
- Timeliness, and
- Comparability.

Ghana Living Standards Survey (GLSS)

Goals

The main objectives of the GLSS are:

- To measure poverty,
- To provide a wide variety of socio-economic indicators (health, education, etc.), many of which are explicit targets of the Ghana Development Plans and the Millennium Development Goals (MDGs),
- To provide employment and unemployment indicators. The GLSS is in fact the sole source of information on labor markets that is currently available,
- To define the Consumer Price Index (CPI) basket, and
- To give direct measures of household consumption for the System of National Accounts (SNA).

Questionnaire

The largest part of the GLSS questionnaire is about consumption, though it has many other modules on almost all basic aspects of living standards (housing, education, health, farming, labor, etc.). Most of the GLSSs, though not the last one, have measured and weighed children in order to provide malnutrition indicators.

Sample

The most recent GLSS visited a sample of 8,700 households, selected in two stages: 15 households in each of 580 Enumeration Areas (EAs). This sample is sufficient to provide good national and regional estimates.³

Fieldwork

The GLSS fieldworkers are organized into teams (20 in the most recent version of the survey). Each team is composed of one supervisor, one editor, and three interviewers. Each interviewer visits all 15 households of one EA within a month.

³ This document cannot discuss sampling technicalities in detail, but it is useful to bear in mind that in order to estimate most of the indicators of interest with the level of precision that is generally accepted for policy planning and monitoring, and with the standard two-stage sampling techniques used for household surveys worldwide, a sample size of 500 to 1,000 households will be required in each domain of estimation, regardless of the size of the domain. Thus surveys intended to provide indicators for the urban and rural sections of each of Ghana's ten regions will need sample sizes of around 10,000 households, whereas surveys intended to provide district-level estimations will need to approach the 100,000-household mark.

Field operations are conducted over a twelve month period, which gives this survey the capability of accounting for the seasonality of consumption and all other measured indicators.

Each household is visited eleven times during a full calendar month, with visits three days apart. Food expenditures and consumption are recorded in diaries whereas non-food expenditures are inquired about by recall, using reference periods depending on the frequency of such purchases.

Periodicity and timeliness

The GLSS has been conducted five times, starting in 1987 and since then roughly every five years. The most recent version (GLSS-5) was fielded in 2005-2006. The GSS expects to conduct the next GLSS in 2011.

The GLSS-5 report was available seven months after the end of fieldwork. This can be considered timely by most standards, but it can be improved, as will be discussed later in this report.

Funding

The World Bank financed the first four rounds of the survey, though the GLSS-5 was totally funded by Ghana's government.

Ghana Demographic and Health Survey (GDHS)

Goals

The main objectives of the GDHS are:

- To produce internationally comparable measures of demographic indicators: fertility, mortality, contraceptive use, maternal and child healthcare, etc.,
- To measure child malnutrition and other public health issues such as HIV/AIDS, and
- To access health services.

Many of the above indicators are used to set explicit targets of the Ghana Development Plans and the Millennium Development Goals (MDGs). However, these indicators cannot be correlated with direct poverty measures, since this survey does not record consumption or expenditures.

Questionnaires

The GDHS questionnaires follow the standard DHS models. The survey's last version did not report HIV prevalence from blood samples.

Sample

The last version of the GDHS visited a sample of 12,000 households, selected in two stages: 30 households in each of 400 Enumeration (EAs). This sample is sufficient to provide good national and regional estimates (see Footnote 3).

Fieldwork

The GDHS fieldworkers are organized into teams (23 in the most recent version of the survey). Each team is composed of one supervisor, one editor, and four interviewers (two female and two male). Each EA is visited by the whole team for about four days.

Field operations are conducted over a three-month period. The survey does not directly observe the seasonality of morbidity or other health indicators, but it tries to assure the comparability between rounds by fielding them consistently from September to November.

Periodicity and timeliness

Generally, the GDHS is conducted every five years. The most recent versions were fielded in 2003 and 2008 and the next one should take place in 2013. Following the DHS standard practices, analytic reports of a high technical quality are generally available twelve months after the end of fieldwork, although most of the analysis is conducted without the participation of Ghanaian experts.

Funding

This survey is part of a global effort of the United States Agency for International Development (USAID). It has been conducted in more than 100 countries over the last three decades, utilizing common methods and excellent quality standards. Most of these surveys, as with all the DHSs in Ghana, have been outsourced to *Macro International* (a firm based in the Washington, D.C. area).

Multiple Indicator Cluster Survey (MICS)

The MICS is supported by the United Nations Children's Fund (UNICEF). Its goals and methods are very similar (though not identical) to the GDHS, which makes both surveys very comparable. This does not necessarily entail a duplication of effort, since by fielding the two surveys synchronously the GSS can potentially provide their common indicators more often than if only one of them was fielded every five years. The MICS has been conducted only once in 2006, almost halfway between the last two GDHSs.

Some differences between the MICS and the GHDS are worth mentioning:

- The 2006 MICS visited a national sample of 6,000 households (20 households in each of 300 EAs). This sample is sufficient to provide good national estimates and only fair regional estimates. However, in four of the regions, the national sample was incremented by an additional 14,000 households in an effort to obtain rough district estimates.
- Full analytic reports became available within twelve months of fieldwork. Most of the analyses were done in Ghana with the participation of Ghanaian experts.

Core Welfare Indicator Questionnaire (CWIQ)

The CWIQ is a very simple questionnaire that has been designed to be applied by relatively unskilled interviewers. Since all of the CWIQ indicators are, or could easily be, obtained from the three surveys reviewed thus far, its main interest is to potentially be applied with the very large samples that would be needed to provide district-level estimations.

The CWIQ has been fielded twice, in 1997 and in 2003.

Agriculture Statistics

Agriculture plays important roles in the development of Ghana. It contributes to ensuring food security, provides raw materials for local industries, generates foreign exchange, and provides employment and income for most of the population (especially in rural areas), thereby contributing to poverty reduction.

The policy focus under the GPRS II is to target the rehabilitation, expansion, and promotion of the use of existing irrigation facilities and infrastructure. It also fosters interventions to promote the development of small-scale and community based valley-bottom irrigation schemes, ground water development and exploitation for irrigation purposes, and the promotion of hand pumps for irrigation purposes. It is expected that these interventions will bring more land under cultivation, generate quick supply responses, and benefit the poor in rural areas. There are a number of critical issues that must be addressed to achieve the ultimate goal of a competitive private sector that supports accelerated growth (particularly based on agriculture). Broad areas that have been earmarked for priority interventions are:

- The amendment of land acquisition and property rights,
- Accelerating the provision of irrigation infrastructure,
- Enhancing access to credit and inputs for agriculture,
- Promoting selective crop development,
- Modernizing livestock development,
- Improving access to mechanized agriculture,
- Increasing access to extension services,
- The provision of infrastructure for aquaculture, and
- The restoration of degraded environments.

To monitor progress in these areas, agriculture statistics are vital. Given the intrinsic dynamics of agriculture production, these statistics should be frequent (ideally annual). Since many of the government actions are district-based, they should also permit a fine geographic resolution. And of course they should include both large-scale and household-based farming.

However, the experience of the GSS in the agriculture field is in striking contrast with this requirement. The last agriculture census was in fact conducted more than a quarter of a century ago (in 1984). The GLSS does provide some information on household-based farming, but only regional indicators every five years.

The Ministry of Food and Agriculture (MoFA) has a district-based information system called the Multi-Round Crop and Livestock Survey (MRCLS.) If that system worked as intended, it would indeed provide most of the required data on an annual basis, and then Ghana would not really need a decennial agriculture sample census because the country would actually have an

agriculture census every year. Unfortunately, the MRCLS is not really working as intended, as a result of the chronic lack of human and material resources.

The GSS is trying to launch an agriculture sample census in late 2010 or early 2011, using the same methods, tools, and staff of the MRCLS, but the continuation of weakened practices means the census is unlikely to succeed.

Labor Force Statistics

The situation in labor statistics is not much better than in agriculture, and this shortcoming will become more critical in the future—probably in the near future. Most Ghanaians are still farmers and many of the country's urban citizens are still self-employed, but during the next 15 years the country will become more urban, industry and services will become more significant parts of the economy, and wage earners will become a larger (and more influential) part of the labor force.

The GSS is already under pressure to generate more and better labor statistics and the demand can only grow. However, at this moment, the GSS can only deliver labor statistics every five years from the GLSS.

The overall objective should be to deliver timely data on employment characteristics and labor market composition, in order to permit unbiased, evidence-based policy formulation and decisionmaking. As with all statistical agencies in middle-class countries, the GSS will be expected to provide regular (monthly or quarterly) data on:

- formal employment and unemployment,

and possibly less frequently on

- informal labor,
- male / female participation in the labor market,
- child labor,

and many other labor statistics.

Business surveys

The GSS Economic Statistics Division is responsible for generating Ghana's National Accounts, compiling industrial production figures from several sources. Many of these sources provide regular (usually annual) summaries on specific industrial sectors as a part of their routine activity and do not require an active data collection effort on the part of the GSS (for instance statistics on the production and exports of cocoa are published annually by the Ghana Cocoa Board). However, the picture of the overall economy provided by these secondary sources leaves many gaps which can only be filled by regular business surveys.

The GSS has conducted few business surveys in the past (the last one was fielded five years ago), but there is broad agreement that they should be conducted more regularly. Business surveys differ from household surveys in many methodological and analytical aspects:

- Business surveys are more difficult and expensive than household surveys (for example, questionnaires are more complex and vulnerable to non response, business managers are harder to tackle than household members, enterprises are not clustered into EAs, and interviewers need to be better selected, trained, and supervised.).

- The GSS does not have as many experts in business surveys as in household surveys.
- The request to provide data for sub-national geographic domains is not as important as in household surveys, but business surveys need to break down their estimations by industrial sectors, at least for key sectors.
- Enterprises come in many sizes, with the number of wage-earning employees ranging from zero to many thousands, and turnovers ranging from nearly zero to millions of dollars.
- Business surveys do not use the population census as a sample frame. Instead, they need to be based on a relatively comprehensive list of all enterprises in the country—the so-called Business Register.

The lack of an adequate business register has been a major obstacle for the regular fielding of business surveys in many countries. However, this does not need to be the case in Ghana, thanks to an agreement between the GSS and the Ghana Internal Revenue Service, which gives the GSS access to a list of all VAT taxpayers in the country. In other words, the GSS can be said to have the privilege of a free and permanently updated business register.

The GSS business register is not perfect (no country in the world has a perfect business register), but dealing with its shortcomings is much easier than trying to develop one from scratch or to keep it updated. Issues to keep in mind include:

- Before fielding a business survey, the register needs to be revised, to sort the enterprises by sector and size (possibly on the basis of the declared duties),
- A few important enterprises are exempted from VAT and should be dealt with separately, and
- The physical address of the enterprises needs to be ascertained, but only for those selected in the sample, not for the full list.

Of course, the business survey will only be able to identify enterprises above a certain size. Small, household-based enterprises that do not pay VAT will not be observed. This common shortcoming of business surveys worldwide is generally addressed through household surveys such as the GLSS, which can identify business managers in their households, and inquire about their firms in special modules. The GLSS has this type of modules, but they should be revised and improved, and be given the importance they deserve in fieldwork management and at the analytical stage.

First appraisal

The recent history of household surveys in Ghana can be briefly characterized as follows:

- There are many instruments aimed at measuring social indicators. For example, in the specific case of health, there are actually three sources (GLSS, GDHS, and MICS) that can provide good regional indicators. As stated, two sources would not necessarily mean a duplication of efforts, but three might. In any case, they necessarily imply coordination and careful examination of the instruments and methods to assure comparability.
- Other efforts, such as a maternal mortality survey conducted in 2007 and the expansion of the 2007 MICS sample to specifically targeted districts, highlight the government's and development partners' interests in social and demographic data. However, the

emphasis on health and education indicators is in striking contrast with the weak situation of data on agriculture production and the labor market.

- Apart from population censuses, most survey programs have been launched and almost all specific surveys have been financed by development partners, though the GLSS-5 is a very noteworthy exception. In other words, the history of surveys in Ghana has been donor-driven, rather than explicitly guided by the monitoring requests of Ghana's development plans.

One remarkable consequence of the donor-driven nature of survey implementation is that the periodicity of most of these surveys is every five years, even though the country's development plans have been covering three year periods and the new Medium Term National Development Framework is likely to be established on a four year basis.

Of course, the donor-driven nature of the process has also brought about benefits. First and foremost are the high international-level standards that characterize most aspects of survey design and analysis. Another beneficial factor, related to survey implementation, is that most surveys are fielded on the basis of self-sufficient mobile teams headed by supervisors who are GSS staff members, but composed of temporarily hired interviewers who are trained for each survey but do not become deadweight for the government budget when the survey is finished. This is a cost-effective notion that should ideally be conserved in the future (except in the case of the few permanent surveys that are proposed below).

The roadmap

On the basis of the diagnostic stated above, the following plan of surveys for the period 2010-2025 can be proposed. Most surveys in this roadmap are pure GSS efforts, but the agriculture-related activities in the last column are proposed as collaborative efforts between the GSS and the Ministry of Food and Agriculture (MoFA).

Figure 2: Proposed roadmap

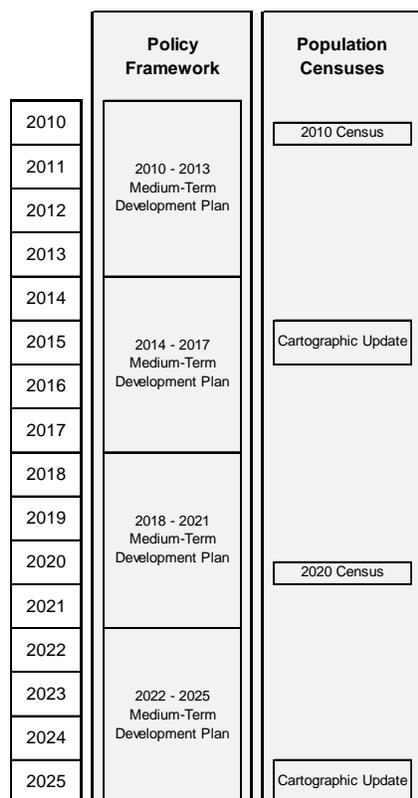
	Policy Framework	Population Censuses	Household Surveys	Business Surveys	Agriculture Statistics
2010	2010 - 2013 Medium-Term Development Plan	2010 Census			Existing MRCLS
2011			MICS / GLSS		Existing MRCLS
2012					Existing MRCLS
2013					Existing MRCLS
2014	2014 - 2017 Medium-Term Development Plan		GDHS	Business Survey	Enhanced MRCLS
2015		Cartographic Update	MICS / GLSS		Enhanced MRCLS
2016					Enhanced MRCLS
2017			GDHS	Business Survey	Enhanced MRCLS
2018	2018 - 2021 Medium-Term Development Plan				Enhanced MRCLS
2019			MICS / GLSS		Enhanced MRCLS
2020		2020 Census			Enhanced MRCLS
2021			GDHS	Business Survey	Enhanced MRCLS
2022	2022 - 2025 Medium-Term Development Plan				Enhanced MRCLS
2023			MICS / GLSS		Enhanced MRCLS
2024					Enhanced MRCLS
2025		Cartographic Update	GDHS	Business Survey	Enhanced MRCLS

The rationale behind the above proposal can be better understood by looking at the roadmap in stages.

Background elements

First and foremost, certain elements are part of the background regardless of GSS actions and should be viewed as given. These are the 4-year Medium Term Development Plans and the national population censuses that will take place on or around the years 2010 and 2020. The periodicity induced by the 4-year plans is the reason why a plan for 16 years seems more natural than the 15 years requested in my terms of reference.

Figure 2.1: Proposed roadmap – Background elements

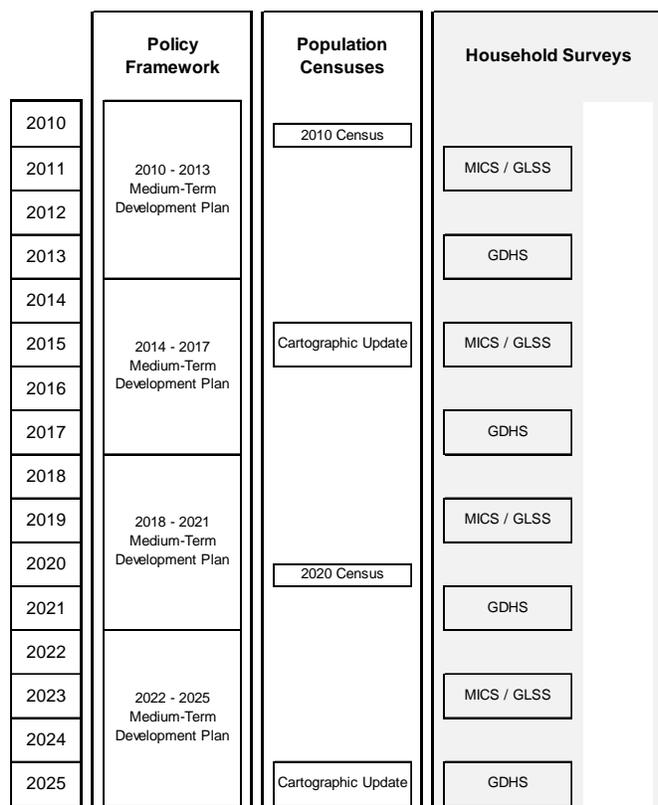


In addition to the cartographic updates that are a standard prerequisite to each decennial census, the roadmap proposes to conduct another two updates in the approximate midpoints of the periods between censuses. Censuses provide the sample frames for all household surveys, and experience has shown that urbanization and other migratory phenomena are too dynamic to only be observed every ten years. Accra and other large cities may double in population in that time and without an updating of the cartography, the newly arrived have no chance of being observed by any survey.

The three major household surveys

The next step is to insert into this framework the three major household surveys that already form part of the GSS efforts: GLSS, MICS, and GHDS.

Figure 2.2: Proposed roadmap – The three major household surveys



Rather than conducting three separate surveys, I suggest fielding the MICS and the GLSS as a single, integrated effort.

Another significant element of the proposal is changing the frequency of the surveys from 5 to 4 years, to synchronize the survey process with the policymaking imperatives framed by the MTDPs. The GDHS and the MICS/GLSS should ideally be dovetailed so that their common indicators become available on a bi-annual basis.

The integration of contents should be focused on making the health modules of the GLSS questionnaire compatible with those of the GDHS and the MICS. The GLSS already has an abundant amount of demographic and health questions, assessing issues including:

- Health conditions during the last two weeks, including 21 questions on the amount spent for treatment,
- Preventive health immunization for all children of age five and younger, including 5 detailed questions on all children immunized,
- Postnatal care, including 11 questions about the amount spent on all children,
- Fertility and prenatal care, including 22 questions for all women between 12 and 49 years of age,
- Contraceptives and HIV/AIDS, including 13 questions for all members 12 years and older, and
- Health insurance, including 9 questions for all household members.

The GDHS and MICS questionnaires have many of the same questions with the notable exception of those related to health expenses. They do include, however, birth history and other, more detailed, health-related questions that are not currently covered by the GLSS (see “Questions and answers - How should the GLSS be revised?” below).

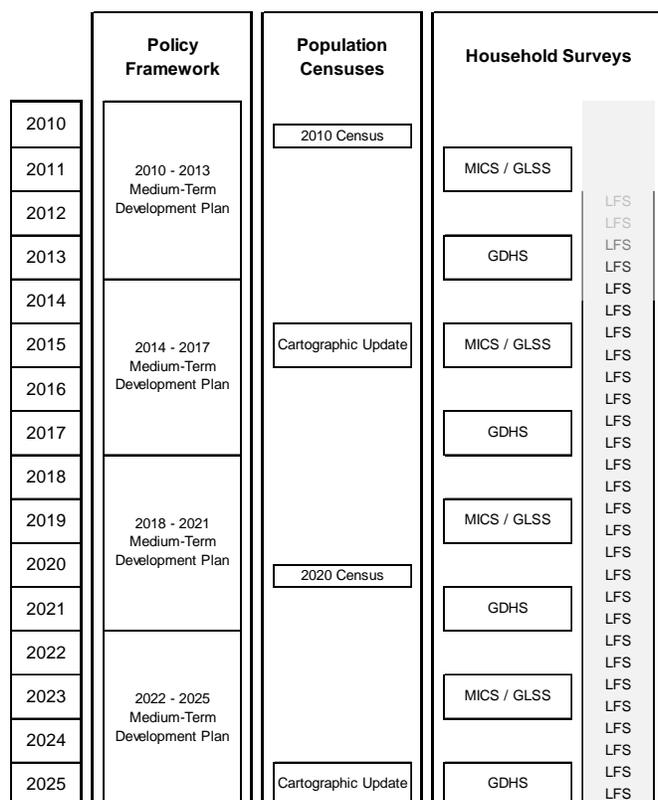
Apart from the cost savings of doing two surveys as one single effort, the integrated MICS/GLSS would bring two very important analytic benefits:

- First, the integrated survey will endow policymakers with the capability of correlating health and demographic indicators with a money-metric measure of welfare and poverty based on consumption. This is something that neither the GDHS nor the isolated MICS can do currently.
- Second, since the integrated survey will be fielded over a 12-month period, it will be able to measure the seasonality of morbidity (child illnesses in particular) and many other health-related indicators. Presently the MICS and the GDHS cannot do this, since they are only fielded over a 3-month period.

A permanent Labor Force Survey

The next stage of the proposed roadmap is a permanent Labor Force Survey (LFS), capable of delivering quarterly data on basic labor market indicators.

Figure 2.3: Proposed roadmap – A permanent LFS



Some features of the LFS could be the following:

- A light questionnaire based on International Labor Organization (ILO) recommendations,
- Sampling based on some form of rotating panels, to measure more precisely quarterly and annual changes of employment and unemployment rates, and other indicators (see “*Questions and answers - Implications of paneling*” below),
- Fieldwork conducted by an unvarying, dedicated staff,
- The geographic coverage could be phased: starting with Metropolitan Accra and later expanding to other urban areas, and possibly to rural areas even later. This would depend on the demand for data, on the geographic evolution of the labor markets, and on the available resources, and
- Funding integrated into the regular GSS budget.

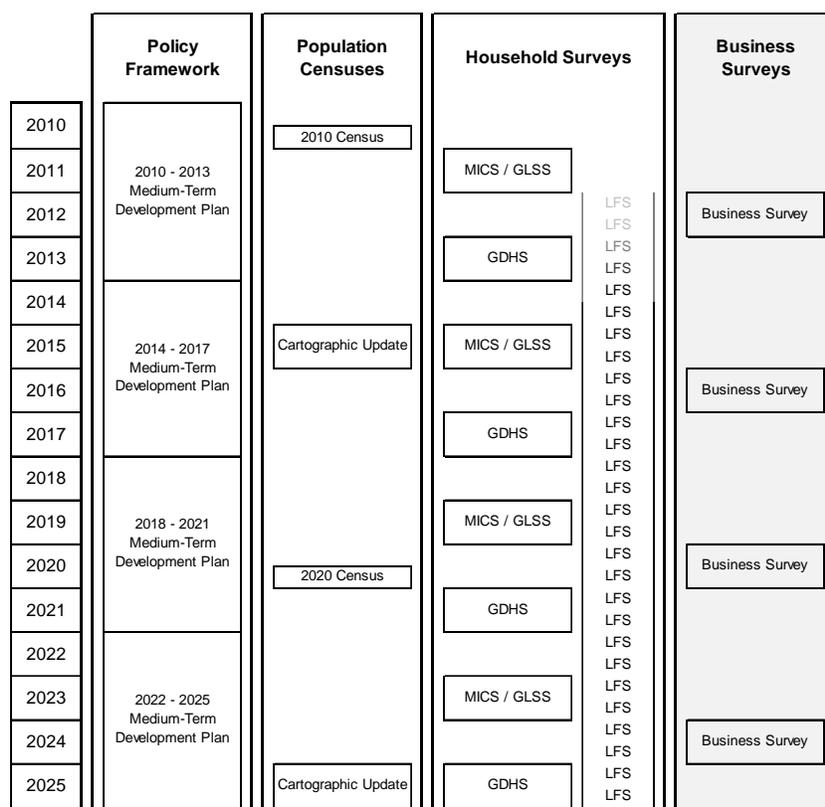
The LFS has the potential of accommodating extra modules that could be added to the standard LFS questionnaire for limited periods of time, in order to answer urgent requests received by the GSS, even if they are not necessarily related to the labor markets.

The starting point of this exercise still needs to be defined by the importance that the Ghana government gives to LFS implementation.

Business surveys

The next element of the roadmap is business surveys.

Figure 2.4: Proposed roadmap – Business surveys



The exact parameters of the business survey are difficult to define at this point. The GSS should try to get advice from a specialist in economic statistics for this purpose. However, the inputs I was able to get from stakeholders and experience from other countries lead me to suggest a sample size of about 5,000 firms and a periodicity of 4 years for this survey.

Agriculture statistics

The final element in the roadmap, though definitely not the least important one given its urgency, is a serious effort to deliver regular agriculture production statistics, building upon the strong collaboration between GSS and MoFA, with IFPRI’s technical and material support as catalysts. The plan is justified and outlined in detail in Quiñones et al. (2010).

Figure 2.5: Proposed roadmap – Agriculture statistics

	Policy Framework	Population Censuses	Household Surveys	Business Surveys	Agriculture Statistics
2010	2010 - 2013 Medium-Term Development Plan	2010 Census	MICS / GLSS		Existing MRCLS
2011				Business Survey	Existing MRCLS
2012					Agriculture sample census
2013	2014 - 2017 Medium-Term Development Plan		GDHS		Enhanced MRCLS
2014					Enhanced MRCLS
2015		Cartographic Update	MICS / GLSS		Enhanced MRCLS
2016			GDHS	Business Survey	Enhanced MRCLS
2017	2018 - 2021 Medium-Term Development Plan				Enhanced MRCLS
2018			MICS / GLSS		Enhanced MRCLS
2019					Enhanced MRCLS
2020		2020 Census	GDHS	Business Survey	Enhanced MRCLS
2021	2022 - 2025 Medium-Term Development Plan				Enhanced MRCLS
2022			MICS / GLSS		Enhanced MRCLS
2023					Enhanced MRCLS
2024			GDHS	Business Survey	Enhanced MRCLS
2025		Cartographic Update			Enhanced MRCLS

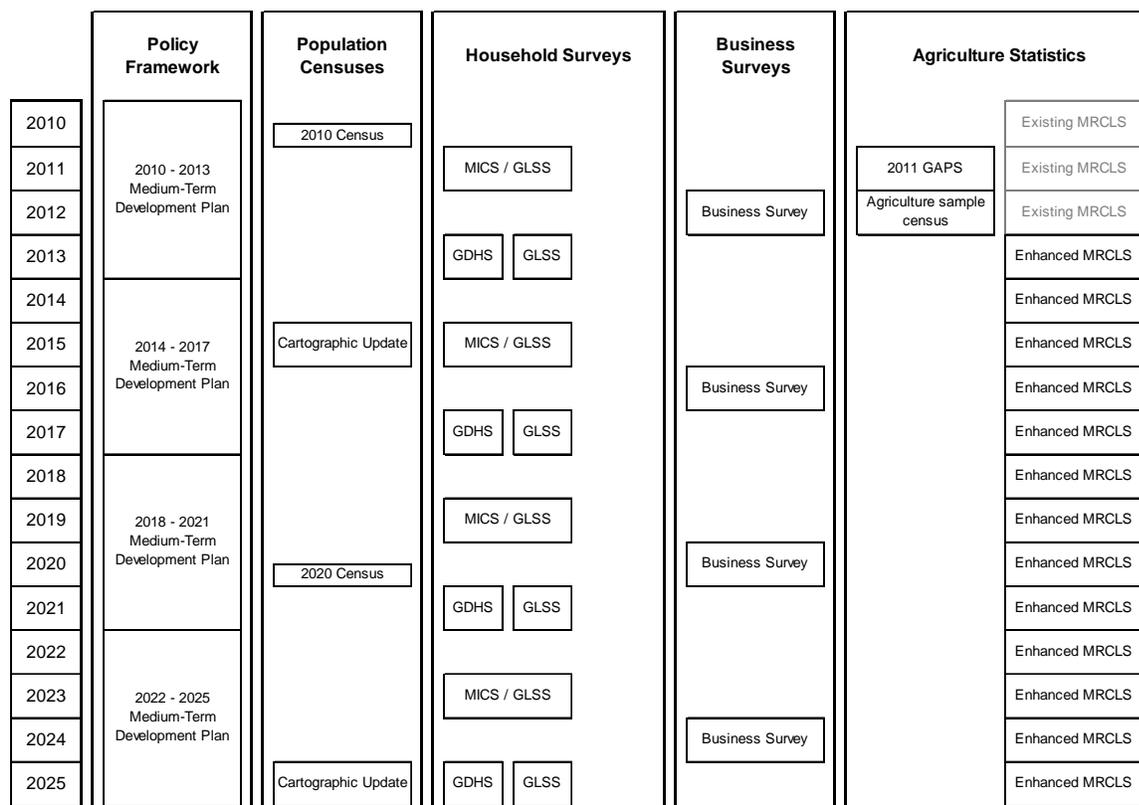
The proposal is to start by fielding the Ghana Agricultural Production Survey (GAPS) in 2011. The GAPS is a model agriculture survey to be conducted in 20 districts with financial and technical support from IFPRI. It will deliver nationally representative agricultural data, in the short run, and provide an example to be followed immediately by the Agriculture Sample Census of 2012 and by the MRCLS in the long run.

The roadmap does not consider a new Agriculture Sample Census in 2022, on the grounds that a rehabilitated MRCLS would render such an exercise redundant. The rehabilitated MRCLS would also naturally deliver, as a by-product, an annual series of basic welfare indicators for rural households in all districts. This was the reason for dropping the CWIQ surveys from the general roadmap.

A very important alternative

A very important alternative to the roadmap has been proposed by World Bank experts and needs to be assessed carefully. It asserts that the four-year interval in between GLSSs is too long and that they should be conducted every two years instead. It also proposes to incorporate a panel component in the GLSS sampling design and suggests that a permanent LFS may not yet be a priority for Ghana. The analytic justification for these proposals is reproduced verbatim as Appendix 1. If this alternative were adopted, the roadmap would look like this:

Figure 2.6: An alternative roadmap



In this map, the **GDHS** **GLSS** double boxes represent independent GDHSs and GLSSs conducted in parallel in the years 2013, 2017, 2021 and 2025. Integrating the two surveys would be even better but though technically feasible, this alternative would be politically difficult to implement (see “*Questions and answers - Further integration*” below). If integration were possible, the double boxes would be replaced by single boxes shaped as **GDHS / GLSS** .

Notional costs

Figure 3, below, is a first approximation to costing. It is partly based on the budgets of some of the surveys conducted by the GSS in the past, but in many cases I had to use experiences from other countries, my own judgment, or sheer guesswork (as in the case of the Business Surveys). I expect this approximation to be a starting point for more refined efforts, if the proposed roadmap is considered by the GSS, and its clients, as an option worthy of consideration.

Figure 3: Notional costs

Project	Size	Unit	Cost per unit	Cost per replication /\$1,000	Replications in the period 2010-2025	Total cost in the period /\$1,000
Population census	25,000,000	Persons	\$2.00	\$50,000	2	\$100,000
Cartographic update	50,000	Enumeration Areas	\$100	\$5,000	2	\$10,000
MICS / GLSS	10,000	Households	\$250	\$2,500	4	\$10,000
GDHS	12,000	Households	\$200	\$2,400	4	\$9,600
LFS	2,000	Households (per quarter)	\$50	\$100	48	\$4,800
Business survey	5,000	Enterprises	\$200	\$1,000	4	\$4,000
GAPS	20	Districts	\$15,000	\$300	1	\$300
Agriculture Sample Census	200	Districts	\$15,000	\$3,000	1	\$3,000
Total						\$141,700
Additional GLSS	10,000	Households	\$200	\$2,000	4	\$8,000
Total with additional GLSS						\$149,700
Total with additional GLSS and no LFS						\$144,900

Apart from obvious direct survey costs (fieldworker and data entry operator wages and travel expenses, transportation, etc.) and except for the GAPS, the costs are inclusive of Ghanaian and international technical assistance for survey design and analysis. They also include the cost of GSS core survey management, but not GSS infrastructure.

Technical assistance is not accounted for in the case of the GAPS because of its model survey vocation. This permits extrapolating the GAPS estimated unit cost (\$15,000 per district) directly to get an overall estimate for the 2011-2012 Agriculture Sample Census. The \$3m amount quoted in Figure 3 results from applying this factor to around 200 districts in the country⁴ and it significantly differs from the \$13.6m quoted in other preliminary estimates. Rather than arguing about this discrepancy on theoretical grounds, it would be better to make a judgment on the basis of the empirical evidence that will be gathered by the GAPS experience next year.

Figure 3 does not account for the recurring cost of maintaining the rehabilitated MRCLS from 2013 onwards, which should be part of MoFA's regular budget. If the GAPS can be fielded for \$15,000 per district, as expected, then the annual cost of this exercise would be similar to the \$3m cost of the 2012 Agriculture Sample Census, although some savings may be expected

⁴ Ghana had 138 districts in 2000. New districts have been created in the past decade and possibly more will sprout in the next one. Today, different sources give different figures, but the number most often quoted is 176.

since some of the field materials (GPSs, motorbikes, etc.) do not need to be replaced each year.

In the case of the LFS, I assumed that it started around 2013 in Accra, to be later expanded to other urban areas as needed.

The first total in Figure 3 represents the cost of the basic roadmap, which I approximate at \$142m for the period 2010-2025, or about \$9m per year. The second total would apply if the proposal of fielding the GLSSs bi-annually were adopted. In this case, the total cost would increase to \$150m (or to \$145m, if the concurrent proposal of not launching a permanent LFS were also adopted).

All amounts are in 2010 U.S. dollars.

Questions and answers

This proposal accounts for many of the comments received from the GSS and its clients on the basis of a first version circulated last year. This section provides further details about implementation and answers some of the questions received.

How should the GLSS be revised?

Without doubt the revision of the GLSS questionnaire would be a delicate exercise. It should not be done in a hurry and it should be seriously piloted. One major objective of the revision is to ensure that its health-related sections are compatible with those of the GDHS/MICS, but there are many other modules of the GLSS questionnaire that could benefit from a critical discussion within the GLSS and with the survey's stakeholders. Most noteworthy among those would be:

- The labor module, which could be made shorter and better adapted to the capture of multiple jobs. The current format (not much changed since the GLSS-1) asks each household member about his/her main and secondary jobs during the past 7 days and 12 months. This questioning scheme, though formally correct, is, in practice, vulnerable to the underreporting of self-employment, which is a critical issue given the GLSS's unique responsibility for informing about small, unregistered enterprises (see "*Business surveys*" above). Recent similar surveys elsewhere (Nepal, French Polynesia, Iraq, Timor Leste, etc.) have been more successful with a probing scheme based on the prior brief probing for multiple jobs, followed by detailed questioning dependent on the nature of the activities so identified (whether they are for wages or not and whether they are in farming or not), and
- The farming module, which should be revised to ensure its compatibility with those of the forthcoming agriculture data collection efforts (see "*The roadmap - Agriculture statistics*" above, and Quiñones et al. 2010).

Of course, the revisions of the GLSS, in general, and its integration with the MICS, in particular, entail more than just questionnaire drafting. Integration would also have implications for the fielding process. The GDHS and the MICS try to guarantee that the interviewer and the respondent are of the same gender; something that is not yet a concern of the GLSS. The integrated survey should be fielded with mixed teams, which should be trained for at least one additional week.

Would an integrated GLSS / MICS produce respondent fatigue?

It could be argued that further expanding the health module of the GLSS would produce respondent fatigue, but in fact the GLSS has the potential of accommodating the more detailed questioning now conducted by GDHS and MICS with less respondent fatigue than the other two surveys. The GLSS interviewers visit each household eleven times during a month, which gives them the opportunity of inquiring about health (and many other aspects of living standards) in a more relaxed setup than the GDHS and the MICS, which only dispose of a few days to visit all of the selected households in each EA.

Should the GLSS adopt a “core and rotating modules” strategy?

For the same reason described above, I do not believe that the GLSS needs to resort to this.

Living standards surveys in other countries have sometimes adopted the strategy of collecting data on consumption and a few other key areas of interest in a questionnaire that is common to all survey rounds (the “core module”) and alternating other questionnaires (the “rotating modules”) in order to focus on a different topic (health, education, etc.) each round.

The rationale behind this scheme is the reduction of respondent fatigue, which may be a very legitimate concern in surveys that try to minimize the amount of time spent in each household each round. From an analytical standpoint, however, focusing on different topics at different times limits the understanding of the complex synergies that underlie household behavior (see Footnote 1). In other words, the “core and rotating modules” scheme is a necessary evil rather than an ideal. The GLSS does not need to resort to it, because it has adopted a fieldwork strategy that is naturally resistant to respondent fatigue, since rather than administering the whole questionnaire in a single sitting, the interviewer visits the household eleven times in one month, keeping each visit brief.⁵

Further integration

If the MICS and the GLSS can be integrated, it is very natural to ask whether the GDHS could also be joined to the GLSS, in order to develop a bi-annual series of fully integrated socio-economic and demographic surveys.

In fact, this could be technically feasible, and it would satisfy the demand for more frequent living standards surveys formulated in Appendix 1 in a very cost-effective way. However, the integration of the GDHS and the GLSS would be much harder to achieve from an institutional standpoint.

The UNICEF Ghana office has expressed interest in the integration of the MICS and the GLSS and it has the autonomy required to make it possible. On the other hand, the GDHS is part of a much larger international effort of the USAID. The two aspects of the integration that make it

⁵ The GLSS fieldwork strategy is not driven only by a concern for respondent fatigue. It is also a consequence of the recording of food consumption with a variant of the diary method, where the interviewer records in each visit the actual food consumed by the household during the past few days. To my knowledge, the surveys that have resorted to the “core and rotating modules” scheme always record food consumption by recall instead (asking such questions as “How much rice did you consume during the past week?”). If properly administered, the diary method is more precise than the recall method.

particularly interesting from an analytic standpoint—the correlation of health and demographics with poverty and the capture of seasonality—would be so disruptive to the established DHS global methodology that they are unlikely to be altered for just Ghana (the standard DHSs deliberately avoid revenue and spending questions and are generally fielded over a brief period of 3 to 4 months).

The role of the CWIQ

The alternate replication of the GDHS and the integrated GLSS/MICS would produce a regular bi-annual series of socio-demographic indicators. However, it should be noted that these indicators would only be available at the national and regional levels. District-level indicators would be delivered every ten years from population censuses, but this may not be sufficient for some policymaking purposes, especially in the context of increased decentralization. The first version of this roadmap (proposed in September 2009) suggested that a way of satisfying the growing demand for frequent district-level data would be to conduct CWIQ surveys between censuses, roughly in the years 2015 and 2025. Now, with a better understanding of the statistical needs of the agriculture sector, I believe that district-level data on households would be better delivered as a by-product of the enhanced MRCLS that is outlined in “*The roadmap (Agriculture statistics)*” above and explained in detail in Quiñones et al. (2010).⁶ The CWIQ is no longer a part of this proposal.

How often should labor force data be collected?

This depends on what is meant by “labor force data” and on how and by whom will they be used.

In Ghana, as in most developing countries, the majority of policymakers will be interested in: the share of the working-age population that has gainful employment, the links between employment and poverty, child labor, female participation in the labor force, and many other issues that are structural in nature and thus unlikely to change quickly. They will require comprehensive data on the many things each person might do to make a living by working multiple jobs (either simultaneously or seasonally), for wages or not, in and out of agriculture, etc. They will also want to correlate that data with education, health, and other characteristics of that person and his/her family. The rich datasets generated by multi-topic surveys such as the GLSS are the ideal instrument for that. The roadmap proposes to reduce the interval between GLSS rounds from 5 to 4 years and *Appendix 1* gives many good reasons for reducing it even more so that the GLSS would run every other year.

In developed and middle income countries there is also a need for more frequent and simpler data on short-term evolution, such as a few labor-related indicators like employment and unemployment rates. The main data users are not just the policymakers, but also the politicians, the press, and the public in general. Statistical agencies in these countries are supposed to produce monthly or quarterly data on employment and unemployment, in the same manner that they are supposed to deliver the monthly CPI. These figures can be produced with a simple instrument such as a standard Labor Force Survey based on the models and standards of the

⁶ This would require close collaboration between GSS and MoFA and marginal adaptations to collect data in urban areas.

ILO. This survey is much less ambitious than a multi-topic survey and is intended to complement multi-topic efforts, not replace them.

When will Ghana reach the point when standard unemployment rates will be considered worthy of monitoring with an LFS? Many would agree that it is still too early, whereas others believe that the country is almost there. I think and hope that this will happen within the next 16 years and that the roadmap should take it into account.

Is a Census of Establishments needed?

The report proposes that the next business surveys use as a sample frame the list of VAT taxpayers rather than an *ad hoc* Census of Establishments. Of course this exercise will miss the firms that do not pay VAT. There are two kinds of firms in this condition: (1) those that are exempt from taxes by special legislation, and (2) those that do not worry about taxes and are small and discreet enough to get away with it. As I said in the report, the GSS should append the firms in Group 1 to the VAT file. These are exceptional cases that can be accounted for easily.

The problem is with Group 2, which can conceptually be divided into: (2a) firms that, because of their size and visibility, might potentially be detected by a good census of establishments and (2b) small firms that are unlikely to be detected by any census.

Group 2b is obviously the biggest. Information about this group can only be obtained from household surveys such as the GLSS, which can identify the firm managers in their households and then ask them about their businesses.

The GLSS can also inform about firms in Group 2a, although arguably with less precision, given that the GLSS sample will contain few Group 2a managers.

Would the relative incompetence of the GLSS in capturing Group 2b firms be a reason for taking the onerous burden of conducting a census of establishments prior to any business survey, or the even heavier one of maintaining a regular business register? I do not think so. I believe that the GSS should instead: (A) take advantage of its privileged access to the VAT file, and use it as a sample frame to conduct the next business surveys and (B) Give more importance to the role of the GLSS in filling the inevitable gaps of this (or any other) frame. This strategy is easier, cheaper, and more likely to succeed. It may not inform about Group 2b very well, but it will at least tell us how big the group is—and we may end up finding it is not that big.

Implications of paneling

When survey planners intend to implement a series of surveys, the question naturally arises of whether to select a new sample of households for each round of the survey, or to retain the same households throughout the series. The second option is referred to as *paneling*.

In the proposed roadmap, paneling might be considered in three survey series: the GLSSs, the LFSs, and the MRCLS.

From the analytical point of view, panels permit better understanding of why things have changed, and allow past and present behavior to be correlated. This advantage of panels is explained in detail in *Appendix 1*. Another advantage of panels is that they can measure changes better, because the error of the difference between two estimations made at different

times, which, in the case of two independent samples with similar designs would be about 40 percent higher than the error of each estimation, will be substantially reduced, as a result of the correlation between the two measures, if the sample is the same.

Panels also have disadvantages. One is that the households in the panel are, by definition, representative of the population at the time the panel was selected and the panel does not contain any households created after that. This intrinsic shortcoming of panels (called “aging”) is worsened by the practical inability to locate all households in each round of the survey (called “attrition”). Attrition is partly due to objective realities (such as households moving out, splitting-up, or refusing to collaborate after a round or two) and partly due to managerial difficulties (turnaround of survey managers, poor archiving, etc.). The GSS should at least address the second kind of problems very explicitly if panels are intended.⁷

A balance between the advantages and disadvantages of panels can be achieved by *panel rotation*—regularly refreshing a part of the sample, so that each household stays in the panel for a limited time (generally, two or three survey rounds.).

Next steps

At the time of this writing the GSS is about to launch the 2010 Population Census—a demanding effort that will probably absorb the minds and bodies of everybody at the office until the end of the year or beyond. However, the strategic importance of the proposed roadmap is such that the service should ideally liberate a few of its senior managers and technicians to revise it and to carry on the first steps of implementation if it is considered reasonable and feasible.

Some of the tasks are indeed both urgent and not very dependent on the overall plan, namely liaising with MoFA and IFPRI for the design and launching of the GAPS experiment early in 2012 (see Quiñones et al. 2010) and the fielding of the GLSS-6 (ideally integrated with the MICS) in late 2011.

For the longer-term strategy, the GSS should carry out further consultations, ideally through a technical committee of experts from inside and outside the government, with the objective of filling up the gaps, and polishing the technical and budgetary details, prior to its approval by the GSS Board and the higher authorities of the country.

⁷ The simplest and most cost-effective measure is to enter the address of each household and the names of all household members in the survey datasets (something that data managers generally do not do because these items are not supposed to have analytic value). Recording the GPS coordinates of the dwelling and the cell phone numbers of all household members is also useful.

Appendix 1

Comments on report by Juan Muñoz⁸

***“Long term census and household survey program for Ghana”
Louise Fox, December 14, 2009***

This is an excellent report. It is logical, and the analysis and conclusions are well-explained. The consultants' methodology seems excellent and recommendations are practical. In particular, it is very helpful to list out the goals of each survey and the main coverage and to indicate overlaps and redundancies which could be eliminated. If these recommendations are followed, we can expect that Ghana would have a more efficient and effective survey program in the future. Increasing the efficiency is especially important if the GSS is to raise the quality of the data collected, increase ease of access to the data by users, and add new surveys to their program. All of the above are needed in order to serve policymakers and stakeholders, who need to be able to develop evidenced based policies to support shared growth and improved welfare in a more diverse and complex economy Ghana will have in the next decade. In particular, as Ghana's economy integrates even more intensively into the global economy through trade and capital flows, regular, dependable, and comparable survey data is necessary for understanding economic changes and their impact on household behavior.

I have several comments:

- With respect to the methodology, I think other considerations, in addition to the ones Juan used, should guide survey planning.
- The implications of my comment are that the conclusions with respect to the frequency of the surveys recommended should be reconsidered.
- In addition, Ghana may wish to consider adding a panel survey to its repertoire sometime in the next five years.
- Finally, I think a semi-annual LFs is inappropriate when over half the LF still works on agriculture, so a 12-month period is the appropriate recall.

Juan's methodology: In reviewing the key surveys (beginning on page 5) Juan listed out the key objectives in terms of what variables are monitored through these surveys (e.g. poverty, MDGs, household consumption, fertility, etc.). He also noted which ones provide input into other parts of the system (e.g. the GLSS for the CPI and the NA). He then argued that monitoring should be tied to Ghana's planning cycle (which is 4 years).

What Juan did not consider is what are the analytical needs of policymakers and which surveys best serve these. This is a critical consideration. For example, it is not enough to know what happens to poverty every four years. The minute a poverty number comes out which has any surprise to it (especially if poverty increased) the next question is "why"? This is one main reason for a multi-purpose survey such as GLSS. A survey which includes demographic information on the household, detailed data on economic activities of household members and the returns to these (labor force activities and returns to labor and other factors), and information on service usage and welfare usually has much of the data which is needed to ask "why?", including – whose poverty went up; what changed in terms of their activities and the returns to their activities; what changed in terms of access markets and to publicly or privately

⁸ These comments were based on a preliminary version of this report, delivered in late 2009. The format and the footnotes are mine (JM).

financed services, etc. A good LSS allows analysis of a range of questions related to whether growth was shared and how, as well as the impact of government spending and policy on poverty.

In a modern economy such as Ghana, analysis of these questions goes on all the time. So while Ghana's planning cycle matters somewhat, I don't think it is as important as Juan envisages because policy should be based on analysis—did this trigger that—not on simply a good or a bad data point. Having timely data matters for the plan, but even more important is a series of data points to identify a trend or shift—and the availability of enough data to figure out why. In sum, Ghana needs a frequent GLSS in order to monitor whose life is changing for the better or worse AND to understand why.

Frequency of surveys

What does this mean for a survey program? First, I agree that the CWIQ and MICs are duplicated almost entirely by the GLSS and the DHS. So Ghana can and should rely on the DHS and GLSS as the workhorses of its survey program, complemented by other surveys as needed (i.e. every 10 years a census, and other special purpose surveys with similar frequency). These two surveys, if done properly, collect most of the data needed to adequately track household welfare and the MDGs, as well the impacts of economic changes on household welfare.

Second, I recommend a GLSS more often than every four years. The problem with infrequent poverty numbers is that it becomes more difficult to find a trend. This is especially true if Ghana has the bad luck to implement a GLSS during a drought or flood or other catastrophe. Ghana would have to wait another 4 years to find out if the policies and economic changes from the past 4 years were raising welfare. This will not help the planners and on the contrary, it could misguide them into thinking that policies are not working when exogenous factors affected the poverty numbers.

I think Ghana could do a GLSS every 2 years and eventually every year (most Latin American countries would have this frequency). Note that this frequency would allow some modules to be implemented every 4 years (e.g. some of the MICs modules) but a “core” survey could be done at least every 2 years.

The core survey should include household consumption and an income and labor force module with at least 4 key modules to track activity:

- A screening question regarding activities over the past 12 months (to measure LFPR, controlling for multiple activities and seasonality), screening questions regarding activity over the last 7 days and job search behavior, as well as reasons for inactivity (to measure unemployment),
- A module on hours worked and earnings in wage employment, to be completed for each household member who worked in this type of employment over the last 12 months,
- A module on non-farm household business. This module would record the earnings of the business (one module to be completed for each business), and the hours worked for each member who worked in the business over the last 12 months, and
- A module on farm income, including the earnings from the farm and hours worked for each member who worked on the farm over the last 12 months.

Of course, other modules can be added (e.g. participation in various government programs for labor force participants). But the point is, these minimum data (i) track key labor force indicators, and (ii) allow those indicators (and their trends) to be linked to household welfare. Labor market data without household welfare data are sterile (as are consumption data without earnings), as

no analysis of how growth was shared can be done. In addition, since some of the earnings of household businesses (farms or firms) are in kind, consumption data allow a check on the earnings data from these modules.

Labor Force Survey

Now the question is if Ghana does an LSS every 2 years, does Ghana need a separate labor force survey (LFS) at the frequency of twice a year?⁹ I would argue that for now it does not.

- Juan notes that Ghana's LMIS is in poor shape. The first step then should be to develop a system using the LSS data, combined with whatever data are collected from establishments and administratively (from the social insurance system). If the LSSs are done every 2 years (and eventually every year) this will provide a lot of data for analyzing labor market behavior.
- LFSs were designed to measure wage and salary employment. They do an OK job at measuring non-farm self employment, but they do a poor job at measuring agriculture employment and income (because you need a consumption model to help with income in kind). Yet half of Ghana's employment is in agriculture.
- Ghana can't do everything, and there are other, much higher, priorities.

Does Ghana need an LFS at all? Hard to say. There might be an argument for an LFS (including detailed time use and child labor) once every 5 years to calibrate the LMIS. But given that resources are limited, I would place developing an LFS quite a bit farther down on the priority list than Juan does. Other analytical needs stand out much stronger (such as, for instance, a panel survey).

Panel survey

If Ghana is ever to have real evidence-based policies, a panel data set using an LSS-type survey instrument is critical. Without these data, it will soon be very difficult to offer well-researched policy advice on micro-economic issues. Analysis of key questions for Ghana such as modeling enterprise dynamics (entry/exit and churning) and job mobility (in and out of informal sector and across jobs within sectors) over time and depicting their implications for changes in earnings and household welfare are constrained by the scarcity of comprehensive panel data. Panel surveys present the opportunity to follow socio-economic trajectories of the same households and communities and allow for more in-depth analysis in comparison to repeated cross-sectional surveys.

One approach would be to plan for a fraction of the next LSS sample to be the panel. These households would be followed up 2 years later, as part of the next GLSS, and so on.

⁹ The shape of the **LFS** boxes in the graphic representation of the roadmap may seem like a suggestion to conduct two LFSs each year, but the proposal is to field that survey as a permanent exercise (*JM*).

References

Ghana Statistical Service – Government of Ghana. “Ghana Statistical Service 5 Year Corporate Plan – 2009 to 2013”. July 2008

Ghana Statistical Service – Government of Ghana. “Ghana Statistics Development Plan 2009-2013”. November 2008

National Development Planning Commission – Government of Ghana. “Growth and Poverty Reduction Strategy (GPRS II) (2006-2009)”. November, 2005.

National Development Planning Commission – Government of Ghana. “Growth and Poverty Reduction Strategy (GPRS II) – National Monitoring and Evaluation Plan (2006-2009)”. November, 2005. 2006.

National Development Planning Commission – Government of Ghana. “2007 Annual Progress Report on the Implementation of the Growth and Poverty Reduction Strategy 2006-2009”. June, 2008.

National Development Planning Commission – Government of Ghana. “Guidelines for the Preparation of the Sector Medium-Term Development Plan 2010-2013”. June, 2009.

Ngeleza, G. and Asante, F.A. “Multi-Round Crop and Livestock Survey Questionnaire: A Review”, Draft report prepared for the International Food Policy Research Institute Ghana Strategy Support Program: July, 2010.

Nyanteng, V.K. and Aggrey-Fynn, E. “Agricultural Data Collection in Ghana”, Draft report prepared for the International Food Policy Research Institute Ghana Strategy Support Program: October, 2009.

Quiñones, Esteban J., Juan Muñoz, and Guyslain Ngeleza. “A Strategy for Agricultural Statistics in Ghana,” Ghana Strategy Support Program (GSSP) Working Paper. 2010.