Integrating Rural Household Surveys

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1. The Current Situation

The report of the United Nations Secretary-General (02/04/2003) stated that "three quarters of the world's poor live in rural areas of developing countries and depend on agriculture and related activities for their livelihood. The Millennium Development Goals (MDGs) of halving the proportion of people living on less than a dollar a day and the proportion of those who suffer from hunger by 2015 cannot be achieved unless rural poverty is urgently reduced."

One of the underlying difficulties of assessing rural poverty is that most of the available data are only available at the national level. The same problem occurs with assessments of indicators of the other MDGs including Universal Primary Schooling, Gender Equality, Reducing Child Mortality, Improving Health, Ensuring Environmental Sustainability, and Promoting Economic Development. The primary indicators are mostly at the national level, while the greater problem is in rural areas. The degree of poverty is masked when only shown at the national level because the distribution of poverty is not even between rural and urban and can exist for different reasons.

Many developing countries lack the resources to maintain the statistical capacity needed to provide sustainable data on their core economic activities. As a result, resources are even more limited to monitor the progress towards meeting the millennium development goals.

Most of the funding for rural development at the national level has been obtained through support for agriculture. A similar statement can be made about the national level resources for statistics for indicators of rural development. Agriculture is viewed as a major economic activity in rural areas in many low income countries, therefore, they mainly support their major agricultural statistics programs. The quality of rural statistics has been weaker and more fragmented because there is often no single department having that responsibility nor are adequate resources provided. In many cases, there is no national statistical framework for rural statistics.

Policy for rural development has often grown out of policy for agriculture. Agricultural policy primarily impacts farmers and their households; a main objective is to support their incomes. Raising agricultural productivity is important for reducing poverty and promoting food security. However, while agriculture is the major activity and source of income of people living in rural

areas of developing countries, non-farm activities play an increasingly important role in expanding rural employment and income. The connection between these issues needs to be included in the monitoring activities to provide a better understanding of what policies can lead to a reduction in poverty.
The dilemma is that the primary policies affecting rural areas and the supporting statistics have been centered on agriculture. There have been few attempts to provide a statistical system for rural areas. Often this need can be met by disaggregating national data into urban and rural sectors.

The purpose of this paper is to provide a framework to integrate agricultural and rural statistics which is centered on the household as the unit of measure. This integration needs to take into account the complex nature of data needs required about households to understand how the forces affecting poverty are for example, related to education, health and the environment. The paper also calls for international and national statistical organizations to join their forces to integrate data requirements into a sustainable survey and data system. This data system should integrate the national statistical system's needs to provide data for core economic and social indicators with those needed to monitor progress towards meeting the MDGs. In this process, the statistical capabilities of the countries can be improved and maintained on a sustainable basis.

2. The Need for Agriculture and Rural Statistics integrated with MDG indicators.

Official statistics are used to make plans or decisions and to monitor their impact over time. These statistics have a myriad of users including all levels of government, international organizations such as the IMF, World Bank, regional development banks, private industry, and individuals . An efficient data system must recognize the different uses and users of its output whether it be a Consumer Price Index or measurements of progress towards meeting the MDGs. A brief overview of the three basic data needs follows.

Facilitate Sound Policy. Policy decisions, whether by international organizations or by national and local governments, are made for a wide range of reasons and purposes. Examples include decisions about using resources to improve the infrastructure via better roads, more schools, improved health care facilities, or incentives to increase investment. Therefore, priorities must be determined, goals set, and funds or other economic support such as regulations, tariffs, tax breaks, etc. furnished.

A very diverse set of indicators is needed to monitor rural development. The cornerstone should be indicators that measure the results of developmental efforts to reduce poverty and hunger and understand factors affecting progress towards meeting the MDGs. Comparable measures of per capita income, expenditures on health, education, infrastructure, and the socio demographics of rural households are needed to assess progress across countries. These

however, cannot be viewed independently. For example, land is one of the world's most important natural resources. The rising demand for food and fiber has been met by more intensive use of the land with increased use of irrigation and fertilizers, expansion of cultivation to marginal land and continual deforestation. The need to provide food security which is leading to more intensive use of water and agricultural chemicals are having environmental consequences. Policy makers, when dealing with reducing poverty are facing decisions about actions to ensure their agriculture is competitive in the world markets, yet is sustainable and in harmony with the environment.

An integral part of rural development is the reallocation of household labor from agriculture to other industries. As a result, it is not enough to measure agricultural income which is often the unit of measure, because as economies develop, the increase in household income often comes from non farm sources. The health of the farm and non-farm economies in rural areas is tightly linked.

The level of education of the rural labor force is an important indicator in any assessment of rural employment conditions. Unemployment rates differ significantly according to levels of education achieved. Again, a common measure of the effect of policies regarding education is the resulting changes in household income as education levels increase.

Enhance Investment. Economic growth is essential for rural development and to help lift people out of poverty, and is largely driven by investment whether from public or private resources. Investment in public goods such as roads, irrigation systems, etc are done to improve the competitiveness and thus the income of farmers and rural households. For example, decisions to locate additional schools with incentives for families to spare their children's labor on their farm need to be based on knowledge about current numbers of households, numbers of children of both pre-school and school age, and the levels of income by the distribution of the education of the adults in the households. For large countries, these decisions need to be based on small area statistics to determine where to focus the developmental efforts.

Private investment involves everything from the construction of processing facilities to forming new enterprises for a multitude of reasons all the way to the individual farmer deciding to invest in a new technology or equipment. Decisions about where to invest, how much and when are best made with the availability of data that first describe the current situation starting with the availability of resources and infrastructure to support the effort. Suppose a food processing firm wishes to build a plant to process soybeans into oil, meal, and related products. Data requirements include the availability and sustainability of soybean production, a labor force, infrastructure such as roads and railways, and finally an assessment of the demand for its products. These data requirements include a combination of very specific small area statistics to what could be national and global measures of demand. The data system needs to ensure that

investment decisions are made to ensure progress continues towards meeting the MDGs of ensuring environmental sustainability and fostering partnerships for development.

Promote Efficient Markets. A factor often overlooked by organizations, both national and international, in monitoring progress towards meeting the MDGs is that agriculture is an important part of many country's trade balances. Agricultural production and the subsequent prices, more than in any other sector, are very volatile as they suffer from the vagaries of weather on top of market and policy driven effects. The shifting of major producing countries away from planned systems to market driven policies has created a market economy for agricultural products. Efforts to improve the production capabilities of a nations' farms needs to be accompanied by an information system that supports effective marketing of the increased production. Statistical organizations need to ensure initiatives to monitor progress towards meeting the MDGs are integrated with a data system that supports the functioning of the marketing system.

The production in developing countries is an important part of the world supply situation. For example, 60 percent of the world's rice production comes from China, India, and Indonesia, and over a fourth of the wheat production comes from India and China. The soybean market is driven by production in Brazil and Argentina.

A key element that ensures that markets function efficiently for both buyers and sellers is basic information on what is produced, where it is produced and the total supplies including quantities in storage. Market information needs to be timely. Even more important is market information that provides projections of future supplies. The time to be marketing a bumper crop is before harvest, not after storage facilities are overflowing and the product rotting. On the flip side, if there is a shortage, procurements need to be made before the poor face a famine. .

3. Data Requirements

Both policy and investment decisions have long run implications. In other words, once a policy decision is made or investment committed and expended, it is not easily changed or discontinued. Another important point often overlooked is that the various policy and investment decisions are not independent. A policy decision or commitment to invest can have an effect on the consequences of other decisions previously made.

Considerable effort has gone into identifying indicators of economic development and measurement of factors to monitor the progress towards meeting the MDGs. Another fact that can be overlooked when preparing data to support policy and

investment decisions is to consider what is needed to forecast the consequences of those actions before the decisions are actually made.

While the need for data to support all possible policy and investment decisions can be overwhelming, the core data that supports all decisions is that related to the rural household as the unit of measure. This is based on the assumption that the primary impetus behind rural development is to improve the well-being of rural households and reduce the number living below the poverty line. These core data are basically represented by the household income and expenditures by source whether on or off farm, education levels, employment status, and health situation, to name a few.

The importance of households as the unit of measure has been recognized by the World Health Organization and World Bank by their World Health Surveys and Living Standard Measurement Surveys, respectively. The administrative data collected by the International Labor Organization and the United Nations Educational Social and Cultural Organization would be enhanced if they could be connected to households and related demographics. The data need to be measured at the household level to enable analysis to obtain predictions of the consequences of policy or investment decisions.

There is a basic need for household level data that are available on a repeated basis to not only monitor changes that are occurring over time, but also to understand what caused the changes. For examples, various policy and investment decisions can be made regarding health, education, the environment. How does one know they were effective?

A framework for such a data system follows in section 5.

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4. Frequency and Level of Detail

Many policy and investment decisions take years to bear fruit. Therefore, periodic surveys to measure the progress towards the goals may be sufficient. However, these surveys will probably need to produce data below the national level. Certainly, to measure the progress towards improving income and reducing poverty in rural areas as well as making progress towards meeting the other MDGS requires that household survey data be at that level. It may be necessary to have rural data at the provincial level for large, diverse countries.

If one accepts the goal to integrate data needs to provide core economic indicators with those to monitor MDGs in a national statistical system, then some basic decisions need to be made about how often the data are required and at what level of detail. The data needed for each indicator needs to be subjected to the test of time and geographic detail required. The various indicators need to

be categorized by degree of importance. This three way look at determining the content of a statistical system needs to be based on the realities of available resources and statistical capabilities.

Table 1 shows how the frequency and level of geographic detail can be viewed for data items. Because of cost and other resources, there is a necessary trade-off between the degree of frequency of providing data and the level of geographic detail.
This exercise needs to be done before establishing the framework for integrating the overall data requirements into the statistical system. Once this process has been completed and the integrated data system established, it will need to be reviewed on a periodic basis such as on 5-year intervals if the survey framework presented below is developed.

Table 1. Frequency and Level of Geographic Detail

Detail / Frequency	National	Regional	Province/ State	County	GIS Referenced
Decennial					
Quinquennial					
Bi Annual					
Annual					
Semi Annual					
Quarterly					
Monthly					

There is a necessary trade-off between Frequency and level of geographic detail

Data requirements must be prioritized by importance, then required frequency and level of detail required

5 Frame work for integrating rural household surveys.

A framework and overall design of an integrated annual rural household survey program is proposed. This would integrate a country's core statistical needs with those needed to monitor progress towards meeting the MDGs. It should be recognized that some of the MDG indicators should be part of the core items. There are several issues to keep in mind when considering the proposed survey design. One is that there are core data items at the household level that need to be monitored every year. It should also be recognized that there is no need to monitor some items every year because situations do not change that rapidly. There are two reasons for proposing an annual survey framework. One is to build a data base of household data that can be used for analysis purposes for current and future policy and investment decisions, especially to forecast the

consequences of the proposed actions. A primary goal is to provide a survey framework that provides the data needs to monitor progress towards meeting the MDGs, and more importantly, the inter relationships between them. The other is to foster statistical capacity building. When countries do periodic household surveys, they receive training and technical assistance. However, when the survey is completed the sponsor or donor goes elsewhere leaving the country without the capacity to continue.

Table 2 provides a brief description of the proposed survey framework. Note that the proposal is to have a national level rural household survey to provide a cross section of information over time.

First, note that the sample is divided into replicates with 5 being used each year. Also note that by the 5th year, each replicate will have been in the sample for 5 consecutive years.

Every sample household in every replicate will receive the same core questionnaire that will remain essentially the same over time. The core questionnaire will obtain information needed on an annual basis, have considerable year to year volatility, are important to monitor food security issues, and provide an overall overview of progress to meeting the MDG's. The design will provide longitudinal analysis of the core data so that short run evaluations of the effects of policy or investment decisions can be apprised.

The key to the design is that each year each household is also surveyed by a detailed questionnaire that rotates by subject matter each year. The variables to be measured on a rotating basis are those for which change would be difficult to monitor on an annual basis. During the period a household is in the sample, it will be queried by each of the detailed questionnaires at least once with one fifth of the households surveyed twice for one of the detailed questionnaires.

At the end of the 5th year a household is in the sample, it will have been surveyed annually for the core items, once for each detailed questionnaire, and twice for one of the detailed version to provide a matching sample comparison over time.

The content of the detailed questionnaires to be used each year will be targeted to include indicators to measure progress the Millennium Development Goals. An overview of the content of the detailed questionnaires follows:

- A. (MDG 1) Indicators of progress toward eradicating poverty and hunger. This would also information about employment and wage rates included in the October Inquiry. This would provide the primary data to enable computing Purchasing Power Parities for the poor in conjunction with the International Comparison Program.
- B. (MDGs 2 and 3) Indicators of progress toward achieving universal primary education and gender equality for women.

- C. (MDGs 4, 5, and 6) Indicators of progress made to reduce child mortality, improve maternal health and combat diseases.
- D. (MDGs 7 and 8) Indicators at the household level to measure the consequences of improving the environment and improving the competitiveness of markets by removing distortions to trade.

Table 2. Description of distribution of sample replicates by year and detailed questionnaire to be used.

Replicate / Year	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	Rep 11	Rep 12
1	A	A	A	A	A							
2		B	B	B	B	B						
3			C	C	C	C	C					
4				D	D	D	D	D				
5					A	A	A	A				
6						B	B	B	B	B		
7							C	C	C	C	C	
8								D	D	D	D	D
9									A	A	A	A
10										B	B	B
11											C	C
12												D

Every replicate receives same core questionnaire every year

Detailed Questionnaires
A. MDG 1. Poverty, Hunger, Employment, income
B. MDG 2 & 3 Education
C. MDG 4,5, & 6 Health
D. MDG 7 Environment

Summary

The primary themes in this paper are the need to disaggregate national data to better describe and understand the rural sector, to base the statistics on the household as the unit of measure, and to call for an integration of international and national resources to provide a sustainable statistical system to monitor progress towards meeting the MDGs using an integrated survey approach.

International and National statistical offices need to view data systems from a global point of view down to the local level and recognize there are data uses beyond their own needs when designing data systems.

The recognition of the many needs for statistical information by a myriad of data users will foster support to sustain the survey programs to meet those needs.

The integration of the household data will provide information that will improve the understanding of the relationships between the different items being measured. This will widen the audience of data users and analysts that will further foster support for the data system.

The question is whether the donor organizations, international institutes and national governments have the will to work together to meet the challenge to harmonize their data requirements, combine resources and strive for a sustainable international statistical system