

XIII INVENTORY OF METHODOLOGIES USED: AGRICULTURAL INCOME AND WEALTH STATISTICS

This chapter reviews the existing methodologies used to generate income and wealth statistics for agricultural households. First there is a review of the sorts of basic data sources that may be available, with their respective strengths and weaknesses. This is followed by an account of the definitions applied and data used in a range of countries. This is in two parts. The first describes the situation in developed countries (Members of the OECD and/or UNECE). The second deals with a sample of developing countries. Both parts draw on information gathered by the UNECE especially for this Handbook.

XIII.1 Data sources for agricultural income statistics – generic sources

The lack of basic data has for long been a problem in establishing statistics on the economic situation of agricultural households. In 1964, the OECD examined the issue of low-incomes in agriculture. As part of this investigation, the OECD attempted to collect information from 22 countries on the incomes farmers received from other sources and which might compensate for low earnings from farming. To its concern it found that:

...In most countries, the information available does not give a precise indication of the farm income situation. Farm families cannot be accurately classified according to their level of income; data on income received from non-farm sources are particularly deficient. These limitations are a serious handicap in devising suitable policies and in assessing the results of measures taken; attention should be given to improving the situation (OECD, 1964, p.7).

Although scraps of information about off-farm activities could be found for most countries, comprehensive sets of microeconomic income data that permitted the identification of farms with low total incomes were only encountered in the Scandinavian countries, Austria, Germany, Canada and United States.

Slattery (1966) reviewed what was known on the relative income of farmers up to the mid-1960s in seven countries where data on personal incomes could be found (Denmark, Germany, Sweden, United States, Canada, Australia, and New Zealand – the latter two not covered by the OECD work above). Tax records formed the prime source except for Germany where farm accounts were used. Slattery's analysis related to the average incomes of farm and non-farm sectors and did not explore the distributional issues for which such data are particularly suited. In 1989, Hill noted that in the EU, despite the passing of three decades during which the CAP, with its increasingly important income objective, had come to dominate the agricultural policies of Western Europe, the list of Member States with satisfactory microdata on the overall income of their farming households was almost unchanged from that found by the OECD in the 1960s. Only Ireland and the Netherlands had been added to Slattery's list. The absence of countries of such major importance to the CAP as France, Italy and United Kingdom was particularly regrettable. By 2000, virtually no progress had been made in putting what patchy data existed at the national level on to a common methodological basis that would permit comparison and aggregation (Hill, 2000).

A review of the current situation concerning data sources on a country-by-country basis is given in the next section. First, however, it is useful to describe the main data sources and their various strengths and weaknesses. It must be remembered, however, that while the existence of data is a prerequisite for the creation of statistics, it does not necessarily mean that they can be used for this. There may be practical or

legal impediments that must be overcome and, even when these can be circumvented, resource costs are involved.

XIII.1.1 Types of data sources

Microeconomic information on the personal incomes of farmers and their households in industrialized countries comes from data gathered in three main ways - from surveys of farm accounts, from family (household) budget surveys in which farmers form one of several socio-professional groups, and from taxation records where self-employed farmers can be identified as a trade group within the industrial classification. In addition, there are various other sources. Some are regular, as in the annual microcensus in Germany or claims for income support under welfare programmes in Ireland and France, while others are occasional, like the investigation of farming households in Luxembourg in 1978 by the Centre for Population and Policy Studies (CEPS) (Hill, 1988) and the special studies in France by the *Centre d'étude des revenus et des coûts* (CERC) for 1978 (Brangeon *et al.*, 1991; Jégouzo *et al.*, 1998) and for 1997 by the National Institute for Statistics and Economic Studies (known by its French acronym - INSEE) (Berthier, 2004). Occasional data also come from special studies that involve looking at the incomes of farmers, such as surveys of farm business structure, of part-time farmers and the large-scale multi-country study of farm household adjustment in Europe undertaken by the Arkleton Trust (Bryden *et al.*, 1992) and its national offshoots. Here emphasis is given to the regular sources.

Farm accounts surveys are important for policy purposes because they are mostly undertaken either by or for governments and form part of the official data set on agriculture. However, not all farms in developed countries draw up accounts. According to the Farm Structure Survey less than one third of holdings kept accounts in 2000 (31% in 2000 for ten Member States, though this was up from 15% for nine countries two decades earlier). In some countries it was virtually universal (including Denmark, the Netherlands and the United Kingdom), whereas in Greece only 1% of holdings kept accounts; in Austria it was 5% and in Spain 11%. However, bookkeeping has been encouraged to the extent that each EU15 country has at least one survey of farm accounts using a harmonized methodology that contributes to the European Commission's Farm Accountancy Data Network (FADN, also known by its French acronym RICA). The quality of the information is generally high because of the ways in which the sample is selected and the data collected. However, as suppliers of data on the total income of farm households, such surveys are of limited potential. First, the sample is designed to be representative of agricultural activity, not of farming households. Hence there may be a concentration on the larger "commercial" producers and relatively poor coverage of small "non-commercial" farms, even if the occupiers of such holdings are mainly dependent on the farm for their livelihood. A minimum size of farm may be used that cuts off a substantial proportion of farm operators.¹ This has led to criticism of the EU's FADN/RICA for its limitations with regard to exploring issues that relate to people engaged in agriculture (see views reported in Hill, 1988).

In addition to the above, farm accounting is often restricted to inputs and outputs of agricultural activity. For example, FADN/RICA does not require information beyond that related to the farm business. Whatever their relevance to the problems of farming at the time they were set up, such a narrow perspective restricts the capacity of the survey in providing answers to many of today's policy questions. A few national surveys in the EU go further and regularly collect additional data on the farm household's non-farm income, though there may be a problem in achieving high data quality across the various sources; among the EU 15 countries this list includes Denmark, Germany, Netherlands, Austria, Finland and, since 1989, the United Kingdom. In the United States, the Agricultural Resources Management Survey (ARMS) covers both the farm and non-farm income and wealth of operators. Data from the ARMS have proved highly

¹ In the FADN/RICA, coverage of about 98% of activity but only about 50% of operators is achieved.

valuable in analyses of the economic conditions of operator households (the ARMS is treated as a case study in Chapter XIV).

A final aspect of farm account surveys is that, by virtue of being purely farm surveys, they do not generate data on other socio-professional groups with which comparisons of the economic situation of farm households could be drawn. This means that alternative data sets may have to be used to provide results for the population in general or subsets of it (such as households headed by other self-employed persons), with the possibility that full comparability may not be achievable.

Nevertheless, where information is lacking, farm accounts surveys appear to be an attractive option for development by adding questions related to off-farm income, non-farm wealth and other aspects of the household that are of increasing relevance in explaining farm decisions and establishing the economic well-being of farm households.

Family (household) budget surveys and related panel studies are a second potential source of data. These take place in OECD Countries, including all EU Member States. Household budget surveys cover all households, including agricultural households. As a result, comparisons should be possible between agricultural households and other types of household. There have been moves towards a common methodology both within the EU and internationally (Canberra Group, 2001; Eurostat, 1993; 2003). The primary purpose of household budget surveys is to provide information for the weighting of price indices, and emphasis has traditionally fallen on the expenditure side. Despite this, the amount of information collected on incomes has gradually been expanding, though there is variation in the amount of detail among countries. This flows from the fact that income data are collected primarily to obtain a classifier for the study of patterns of consumption rather than to study income in its own right (Eurostat, 1993). Nevertheless, in countries with a substantial proportion of their population still engaged in agriculture, these surveys are a potentially valuable source of information on the total income of farmer households. The OECD used data from household budget surveys in 25 countries stored in the database of the Luxembourg Income Study as the basis for its study of low-income in agriculture (OECD, 2001).²

There are three main disadvantages of household budget surveys. First, because agricultural households constitute a small proportion of the population in most OECD Countries, few agricultural cases turn up in the surveys. As a result, the data are often insufficient for any statistical significance to be attached.

Second, they are expensive to carry out, with the result that they are conducted only occasionally - typically at five to seven year-intervals. This creates the problem of how their findings should be updated in non-survey years. In addition, results from the analysis of the mass of data also tend to be rather dated by the time they are published. These surveys are therefore best at providing detailed information when time is not of the essence.

Third, the reliability of data on incomes is not high (see, for example, the case of Greece in Sarris (1996)). Not all items leading to income may be collected (such as imputed items and rental values of owned dwellings) and there may be no coverage of assets, liabilities and net worth. The problem with the quality of income estimates comes from the underrepresentation of self-employed households in voluntary

² The Luxembourg Income Study (LIS) project began in 1983 under the joint sponsorship of the government of Luxembourg and the Centre for Population, Poverty and Public Policy Studies (CEPS). The main objective of the LIS project was to create a database containing social and economic data collected via household-based surveys in different countries. The LIS database contained information for 25 countries by the end of 2000, of which 22 are OECD countries.

surveys (there may be difficulty in making contact and a high non-cooperation rate), and also from the understatement of real income levels from self-employment. This may not be deliberate but can arise from the uncertainty which households have about the amounts they are earning from farming and even of what constitutes income (Martin *et al*, 1996; van der Laan, 1999). Ireland has attempted to circumvent the problem by integrating their household survey with the annual farm accounts survey (the National Farm Survey) that contributes to FADN/RICA, selecting as agricultural households cases that were already cooperating in the National Farm Survey (Hill, 1988). In Germany, incomes are estimated indirectly by summing consumption spending with the level of savings.

Longitudinal studies using a panel of households are needed where the main interest is the way in which income varies over time and the way in which various components change. The pattern by which many agricultural households diversify their income sources as a response to the pressure on the rewards from farming would be expected to be revealed by the use of constant samples. In reality, general surveys of households that use a panel approach often appear to suffer from the problem of small numbers of agricultural households. Box XIII.1 contains details of panel surveys for the EU.

Box XIII.1

The European Community Household Panel (ECHP) and European Union Statistics on Income and Living Conditions (EU-SILC)

The European Community Household Panel (ECHP) was initiated in 1993 with the intention of establishing a European database of comparable statistical information for all Member States (EU 12) on the income and living conditions of households. Details were collected on the incomes of individual household members, which then could be aggregated to the household level in various ways (for example, by using a dwelling or a single budget concept of the household). The first main survey took place in 1994, with a sample of some 60,500 cases. It was anticipated that about 3,300 would turn out to be agricultural households; in the United Kingdom the sample of 5,000 households was expected to yield about 100 farm households. In reality, the first round of the ECHP threw up fewer than 2,661 cases in which the head of household (or the reference person) was returned as self-employed and had agriculture as their broad industry group. In Germany there were 25 households with such a reference person and in United Kingdom 61 households; only in Greece, Ireland and Portugal were there more than 300 such households (Eurostat, personal correspondence). The number of cases corresponded to less than 1% of agricultural households estimated in Eurostat's sector-level Income of the Agricultural Households Sector (IAHS) statistics, and less than 0.5% in countries other than Ireland and Luxembourg. Over time the numbers were expected to become even smaller. By way of contrast, the EU's Farm Structure Survey aims for a minimum sample of 10% in order to catch the diversity found in this industry, although in practice this sometimes falls to 3%. In addition to the number of agricultural cases in the ECHP sample being too small to be usable, it may be expected to suffer from the same well-known problems as household budget surveys in its attempts to gather reliable income data from self-employed people, especially those in agriculture.

The ECHP has been replaced by the European Union Statistics on Income and Living Conditions (EU-SILC) survey, which has a cross-sectional sample size of 121,000 households for EU-25 (91,000 for the longitudinal study). A "full-scale pilot" survey took place in 2003 and the "true" EU-SILC survey was conducted in 2004. While full implementation is not expected until 2007, the first cross-sectional data will be available in 2006. However, in view of the sample size, it is likely that the EU-SILC will suffer from the same problem of a small number of agricultural households as did the ECHP.

As will become clear later in this chapter, in developing countries household surveys have become a dominant form for collecting data on incomes and consumption, supplementing or sometimes even replacing other data collection programmes and civil registration systems (UN, 2005).

Taxation records form the third main potential data source on the total personal incomes of farmers and their households. In countries that have income taxes for individuals or groups of people (such as couples, who may form a fiscal household), an advantage of using taxation records is that taxes are not voluntary, so records of the income on which tax is based should exist for all taxpayers. Data may be drawn from the whole universe or just a sample depending on the number of cases and degree of disaggregation required. Because there are usually penalties for illegal tax avoidance, some degree of quality assurance is built in, though there may be bias towards the underreporting of income. Assuming that taxpayers are identified by trade group, of which agriculture could be one, it should be possible to compare the situation of farmers with other classes of taxpayer.

However, there are many substantial drawbacks. First, tax records relate to concepts of income (and assets in some situations) used by tax authorities, and these may differ from those used by economic statisticians. For example, some forms of income may be deemed to be exempt from tax and are thus likely not to appear in income registers. In addition, rules on matters like capital allowances, offsetting losses and so on may not accord with the treatment appropriate for assessing personal incomes in the context of agricultural policy.

Second, low-income farmers may fall below the tax threshold and thus not be represented in statistics based on taxes (Ireland is a case in point - see Hill, 1988). This will complicate comparisons of income with other socio-professional groups.

Third, the system of taxation of agriculture may be different from the rest of the national system, so that income data may not be available. For example, in many OECD Countries (including no less than seven of the EU 15) at least some farmers (typically the smaller ones) are not taxed on their actual incomes but according to some standard - usually dependent on farm area or numbers of animals (OECD, 2004). Assessment on an actual income basis can only happen if the farmers keep accounts for their businesses. As was noted above, for the EU as a whole this seems to be still very much the exception.

Fourth, there may be a problem of timing. Where tax is assessed on the basis of an accounting profit this may be done in arrears, unlike other forms of income that are taxed in the year in which they are earned. Consequently there may be problems of aligning information on self-employment income with statistics on other income.

Fifth, there may be implications with respect to the institutional form the farm business takes; arranging a business as a company rather than as a partnership or sole trader will impact the way that income is reported and taxed.

Sixth, there may be practical or legal reasons why tax data are not available or appropriate. These range from technical difficulties, such as matching up the income declarations of individuals to create data for households, to legal restrictions in some countries on access to tax data for non-taxation purposes, even by statistical authorities.

Nevertheless, in situations where it is possible to combine tax data for individuals with other administrative and survey data, the outcome is a valuable and powerful tool for studying socio-economic problems and monitoring the performance of policy directed at solving these problems. This is the case in

some Scandinavian countries where the combination of tax data and other forms of data constitutes their Income Statistics Registers.

The discussion of alternative data sources so far has been relevant for OECD Countries. In developing countries farm accounts surveys and taxation may not exist. The main (perhaps the only) source of data for statistics on the income of agricultural households, and many other aspects of agriculture, may be household surveys.

XIII.2 Survey on definitions and measurement issues in selected countries

XIII.2.1 Predominately developed countries (UNECE and OECD countries)

XIII.2.1.1 Background

In March 2004, the UNECE contacted UNECE Member Countries and those OECD countries that are not UNECE Members to ask for information on definitions, data sources and other information concerning the collection of statistics on the income of agricultural households. The emphasis was on what was already used in available statistics rather than what might be possible within national data systems

Since Eurostat had already collected information for EU Member States, these countries were only asked to update the information already held and provide any information on changes that had taken place since the 2001 Inventories of Income of the Agriculture Households Sector (IAHS) report³ (Eurostat, 2002) was put together. Non-EU countries were sent a questionnaire (see Annex A at the end of the present chapter) and were asked to provide any further information available concerning agricultural household income. Replies have been received from 20 EU countries and 25 Non-EU countries (see Annex B at the end of the present chapter).

The replies varied in the amount of information supplied. The Czech Republic and Malta indicated that there is no information available yet and are excluded from the tables. Switzerland pointed out that 'agricultural households economic accounts' were removed from their statistical programme in autumn 2003 without giving any information on the activities recorded before 2003. Switzerland is also excluded from the tables. Luxembourg also indicated that there was no information available and that there is no intention to collect data on agricultural household income. Luxembourg is nevertheless included in the tables since some information is available in the 2001 IAHS report. For the same reason, Austria, Greece, Netherlands and Spain are included in the tables even though no reply has yet been received from them.

This report provides a short summary of the areas covered in the questionnaire. The questionnaire and tables with more detailed information of the survey can be found in Annex 9 at the end of this Handbook.

³ An inventory of Income of the Agricultural Households Sector (IAHS) statistics covering EU Member States was first undertaken in 1990 (Eurostat working paper F/LG/187) and a second (in two stages) in 1996 (F/LG/320, 324, 350 and 366). The consolidated inventory, covering all the main elements of the methodology, was published as part of the IAHS 2001 Report (Eurostat, 2002).

XIII.2.1.2 Definition of household

The way the household is defined is important because it influences the survey's coverage of the population and the analysis of the data, in particular when cross-country comparisons are made (see Chapter IX in this Handbook). The most commonly used criteria in the definition of a household are co-residence (living together in the same dwelling unit), a pooling of income and resources, the sharing of expenditures (including joint provision of the essentials of living such as food) and, finally, the existence of family or emotional ties.

EU countries

Table XIII.1 shows that 11 out of the 22 EU countries for which data are available use the target definition of a household as specified in paragraphs 2.1 to 2.5 of the revised Manual that Eurostat published, after discussion with Member States, for its Total Income of Agricultural Households (TIAH) statistics (Eurostat, 1995). These statistics subsequently were renamed the Income of the Agricultural Households Sector (IAHS) statistics, and the two acronyms are used interchangeably in this Handbook. Eurostat's TIAH/IAHS target household definition was based on that of the European System of Accounts (ESA) (itself being rooted in the UN System of National Accounts - SNA). This definition refers to people living in the same accommodation, with a shared budget and who consume certain types of goods and services such as food collectively. People do not have to have a family link. Four other countries (Estonia, Latvia, Slovenia and Sweden) provided a definition very close to the one stated in the ESA.

Table XIII.1

Definition of household in EU countries

Country	Reference to				
	common dwelling	shared budget	shared food/meals	family link necessary	students/temporarily absent
Austria	Yes.	No.	Yes.	Yes.	Not mentioned.
Belgium	(Yes.)	No.	No.	Yes.	Not mentioned.
Denmark	Yes.	No.	No.	Yes.	Not mentioned.
Estonia	Yes.	Yes.	Yes.	No.	Not mentioned.
Finland	Yes.	Yes.	Yes.	No.	Not mentioned.
France	Yes.	Yes.	Yes.	No.	Not mentioned.
Germany	Yes.	Yes.	Yes.	No.	Not mentioned.
Greece	Yes.	Yes.	Yes.	No.	Not mentioned.
Hungary	Yes.	Yes.	Yes.	No.	Not mentioned.
Ireland	Yes.	Yes.	Yes.	No.	Not mentioned.
Italy	Yes.	Yes.	Yes.	No.	Not mentioned.
Latvia	Yes.	Yes.	No.	No.	Not mentioned.
Lithuania	Yes.	Yes.	Yes.	No.	Not mentioned.
Luxembourg	Yes.	Yes.	Yes.	No.	Not mentioned.
Netherlands	Yes.	Yes.	Yes.	No.	Not mentioned.
Poland	Yes. but seamen and workers abroad included.	Yes.	Yes.	No.	No.
Portugal	Yes.	Yes.	Yes.	No.	Not mentioned.
Slovakia	N/A.	N/A.	N/A.	N/A.	N/A.
Slovenia	Yes.	Yes.	Yes.	No.	Not mentioned.
Spain	Yes.	Yes.	Yes.	No.	Not mentioned.
Sweden	Yes.	No.	No.	No.	Not mentioned.
United Kingdom	Not applicable since based on tax returns of individuals				

Source: UNECE survey on agricultural household income statistics.

In practice the definitions used deviate to different degrees from the TIAH/IAHS target definition, the UK's definition being the most dissimilar. This stems from the fact that the UK's statistics are based on the tax records of individuals. Finally, it should be pointed out that the family link criterion is used only in Austria, Belgium and Denmark.

Non-EU countries

Out of the 25 non-EU countries that replied to the questionnaire, 18 provided a definition of household (see Table XIII.2). All the countries use the co-residence criterion with the only exception being Andorra. In addition, Andorra is the only country to require members of the household to be part of the same family.

The definitions used in Canada, Norway and the United States do not refer to shared budgets but only refer to sharing a dwelling unit. The wording of the definition of household provided by the Republic of Korea does not refer to sharing a dwelling unit but it seems to be implied. Reference to shared meals and/or common provision of food can be found in the definition of household in 10 countries.

Table XIII.2

Definition of household in Non-EU

Country	Reference to				
	common dwelling	shared budget	shared food/meals	family link necessary	students/temporarily absent
Albania	N/A.	N/A.	N/A.	N/A.	N/A.
Andorra	No.	Yes.	Yes.	Yes.	Not mentioned.
Armenia	Yes.	Yes.	No.	No.	Not mentioned.
Australia	N/A.	N/A.	N/A.	N/A.	N/A.
Azerbaijan	Yes.	Yes.	Yes.	No.	Not mentioned.
Belarus	Yes.	Yes.	No.	No.	Not mentioned.
Bulgaria	Yes.	Yes.	Yes.	No.	Included.
Canada	Yes.	No.	No.	No.	Included.
Croatia	Yes.	Yes.	Yes.	No.	Not mentioned.
Georgia	Yes.	Yes.	No.	No.	Not mentioned.
Japan	N/A.	N/A.	N/A.	N/A.	N/A.
Kazakhstan	Yes.	Yes.	Yes.	No.	Not mentioned.
Kyrgyzstan	Yes.	Yes.	No.	No.	Not mentioned.
Mexico	Yes.	No.	Yes.	No.	Not mentioned.
New Zealand	Yes.	Yes.	Yes.	No.	Not mentioned.
Norway	Yes.	No.	No.	No.	Not mentioned.
Republic of Korea	N/A.	Yes.	Yes.	No.	Not mentioned.
Republic of Moldova	Yes.	Yes.	No.	No.	Not mentioned.
Romania	Yes.	Yes.	No.	No. but definition is 'generally relatives.'	Not mentioned.
Switzerland	Yes.	Yes.	Yes.	No.	Not mentioned.
The former Yugoslav Republic of Macedonia	Yes.	Yes.	Yes.	1/	2/
Turkey	N/A.	N/A.	N/A.	N/A.	N/A.
Turkmenistan	Yes.	Yes.	No.	No.	Not mentioned.
Ukraine	Yes.	Yes.	No.	No.	Not mentioned.
United States of America	Yes.	No.	No.	No.	Not mentioned.

Source: UNECE survey on agricultural household income statistics.

1/ Not necessary but non-family members need to work, eat and reside in the house community.

2/ Students always included, other people absent for more than 45 days in last three months are excluded.

XIII.2.1.3 Definition of agricultural household

EU countries

The two definitions of agricultural household most commonly applied in the EU countries are the “narrow” and the “broad” ones (see Table XIII.3). According to the “narrow” definition “agricultural households are those where the income from independent agricultural activity, net of capital consumption, constitutes the *main source* of the total income of the reference person” (TIAH Manual, Rev.1, paragraph 2.7.3). This approach forms part of a complete disaggregation of households into socio-professional groups, permitting income results to be compared on a consistent basis. In contrast, agricultural households, in the “broad” sense, are those that derive *some income* from independent activity in agriculture (other than income solely in kind). This income can arise from activity of the head of household or any other member” (TIAH Manual, Rev.1, paragraph 2.10.1). The use of the “broad” definition does not allow comparisons of agricultural household income to be made, except with the “all households” average (or “all other households”). See Chapter IX of this Handbook for a full discussion of the concepts and definitions of agricultural households. There the use of both definitions was proposed to cater for different policy contexts, with additional possibilities (such as being linked with farm size) also considered.

Table XIII.3

Definition of agricultural household (narrow or broad) and inclusion of fishery/forestry in EU countries

Countries	Narrow/Broad	Fishery/Forestry
Austria	Narrower than IAHS target.	Included.
Belgium	No information on definition used.	Not included.
Denmark	Narrow.	Not included.
Estonia	Not in use.	Included.
Finland	Broad.	Not included.
France	Not in use.	Not included.
Germany	Narrow.	Not included.
Greece	Narrow.	Included.
Hungary	Narrow.	Not included.
Ireland	Narrow.	Not included.
Italy	Narrow.	Not included.
Latvia	Not in use.	
Lithuania	Narrow.	Not included.
Luxembourg	Not in use.	
Netherlands	Narrow.	Not included.
Poland	Narrow.	Not included.
Portugal	Not in use.	
Slovakia	Not in use.	
Slovenia	Broad.	Not included.
Spain	Between the IAHS “narrow” and “broad” definitions.	Not included.
Sweden	Narrow.	Not included.
United Kingdom	Between the IAHS “narrow” and “broad” definitions.	

Source: UNECE survey on agricultural household income statistics.

Ten countries (Denmark, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland and Sweden) replied to the UNECE survey that they use a “narrow” definition of an agricultural household in their published statistics. Finland and Slovenia replied that a “broad” definition of the agricultural household is used. Austria replied that the definition is based on a farm size criterion, while in Spain

agriculture has to be the main income source of at least one member of the household, not necessarily the household head. Six countries stated explicitly that no definition of agricultural household is used (Estonia, France, Latvia, Luxembourg, Portugal and Slovakia). These replies are not fully in accord with other information sources. It is known from the IAHS report (Eurostat, 2002) Spain, France, and Finland have used “narrow” definitions when sending results to Eurostat and that seven EU Member States (Denmark, Germany, Greece, Ireland, Netherlands, Finland and Sweden) have generated results for both the “narrow” and “broad” definitions for at least one year for comparative purposes, with some striking findings in terms of numbers of households and income levels (see Box IX.4 of Chapter IX of this Handbook).

Following the indications given in the TIAH Manual, forestry and fishing are usually excluded from agricultural households in published statistics.

In the EU countries there is usually no shortage of data on farm income, these data are collected by the FADN/RICA survey. More problems arise when the farm household global income has to be calculated. The main statistical sources that can be used are farm account surveys, administrative data (taxation), national Household Budget Surveys and the Statistics on Income and Living Conditions (EU-SILC). In some countries farm account surveys have been expanded in order to collect data on non-agricultural incomes of farm households. The taxation source is not always exploitable and in addition, the available information does not always allow the agricultural household income to be reconstructed, due to the special taxation regime applied to small farms (estimated agricultural income). This is the case in France and, to a lesser extent, in Hungary.

Household Budget Surveys and EU-SILC surveys do contain data on the global income of agricultural households; the problem is that the coverage of farm households is too low to produce a statistically significant sample. This is, for instance, the case of the Belgium SILC survey that contains data on only about 90 agricultural households, which accounts for 0.15% of the total number of farm households. Similar problems are reported for Hungary and France. For example, the French Family Budget survey collects data on only 237 agricultural farm households and the number falls to about 150 in the Income and Living Conditions Survey (ERCV). The National Institute for Statistics and Economic Studies (INSEE) is presently working on a project based on the joint utilization of the FADN/RICA data and those collected by the survey on taxable income.

Non-EU countries

Out of the 23 non-EU countries, 12 gave a definition of agricultural household (see Table XIII.4). The majority gave a definition closer to the broad target definition in the IAHS Manual than to the narrow definition, in the sense that reference is made to the household or any household member rather than to the reference person who is involved in agricultural activities. It then depends on the size of the thresholds whether the activity is likely to give rise to a large share of the household’s income or not. No reference is usually made to the share of income coming from agricultural activities. In the former Yugoslav Republic of Macedonia, a household is only classified as agricultural if all members of the household are engaged on the agricultural holding. If one or more members receive income from other sources then the household is classed as “mixed.” In the Republic of Korea it is also necessary that all members be mainly engaged in farm work to be classified as full-time farm households.

Table XIII.4

Definition of agricultural household (narrow or broad) and inclusion of fishery/forestry in non-EU countries

Countries	Narrow/Broad	Fishery/Forestry
Albania	N/A.	N/A.
Andorra	No definition provided. However, in the survey of family budgets the category 'worker in agriculture' is one of the ten socio-professional groups based on the main source of income of the household reference person.	N/A.
Armenia	N/A.	N/A.
Australia	N/A.	N/A.
Azerbaijan	No information on definition provided. However, the Household Budget Survey has information on main source of income of household head of which one is 'hired workers in agriculture' and one is 'work in household production'.	N/A.
Belarus	Not in use.	N/A.
Bulgaria	Broad.	Excluded.
Canada	Broad. 1/	Excluded, unless household is also involved in agricultural activity.
Croatia	Broad. 2/	Included.
Georgia	N/A.	N/A.
Japan	Household having cultivated land of 30 acres or over, or whose annual sales of agricultural products amounts to 500,000 Yen and over.	Excluded.
Kazakhstan	N/A.	N/A.
Kyrgyzstan	An agricultural household is a household in a rural area (according to the Territorial Classification of the Kyrgyz Republic SAOTO) and produce agricultural produce.	Excluded.
Mexico	Households in which agriculture is the main income source.	Excluded.
New Zealand	Not currently applied.	N/A.
Norway	Households having agricultural land or livestock. An agricultural household may have zero or negative income from agricultural activity and still be included in the statistics.	Households solely engaged in forestry and/or fisheries are not included.
Republic of Korea	Households with 10 acres or more, or which raises livestock and sells products.	Excluded.
Republic of Moldova	Household category 'farmers': households whose heads have their main source of income from individual agricultural activity. Household category 'Employees in agricultural sector': households whose heads have their main source of income from remunerated agricultural activity.	N/A.
Romania	A farmer household is a household where the head of household has the occupational status of being self-employed in agriculture or is a member of an agricultural association.	N/A.
Switzerland	N/A.	N/A.
The former Yugoslav Rep. of Macedonia	See 3/	Included.
Turkey	Not in use.	N/A.
Turkmenistan	Not in use.	N/A.
Ukraine	Not in use. But information on types of activities is available so that households with income from agriculture, fisheries, forestry could be identified.	N/A.
United States of America	A subset of households engaged in the operation of a farm business establishment (land under operating arrangement on which there are or could be sales of at least \$1,000 annual worth of agricultural products). For purposes of the U.S. Department of Agriculture's Agricultural Resource Management Survey (ARMS), the definition refers to a household as 'The operator, spouse and all individuals living in the operators residence who share the financial resources of the farm operator. Students living away from home who are dependent upon the operator's household for support are included.'	Excluded.

Source: UNECE survey on agricultural household income statistics.

1/ One of the residents of the household must be a farm operator, as identified on the Census of Agriculture.

2/ An agricultural household is every household that has an agricultural estate (over 10 ha) and whose members are involved in agricultural production.

3/ A household with its own agricultural holding and all its members able to work are engaged on the holding as agricultural workers. None of the household members is officially employed outside the holding, none of them owns a store for trade and none of them is a pensioner, but one or more of its members can occasionally work outside the holding in order to earn some additional income. It also includes agricultural workers with no land who work regularly on the holdings of other private agricultural workers; agricultural households with elderly members who own a holding, but are not capable of working, regardless of whether they pay for the cultivation of land, lease their land or give it to sharecroppers since their income comes from the holding and they do not have any other income; households whose members have acquired the right to receive agricultural pension on the basis of the Law on Retirement and Disability Insurance; agricultural households whose members are temporarily working abroad.

Of the remaining countries, four explicitly stated that a definition for agricultural household did not exist (Albania, Belarus, New Zealand and Ukraine). The countries that did not provide a definition, but did not state explicitly that no definition of agricultural household was used, most probably do not use an official definition of agricultural household. Three countries that did not provide a definition gave detailed information on the socio-economic classification of households according to the main source of income of the reference person and had 'agricultural workers' as one of the categories (Andorra, Azerbaijan and the Republic of Moldova). However, only the Republic of Moldova has a separate category for income from independent agricultural activity.

XIII.2.1.4 Definition of rural household

EU countries and non-EU countries

The survey also asked for information on the definition of rural households. This was done primarily to complement statistics on rural areas covered in Part One of this Handbook. It is recognized that, especially in developed countries, farm operators are only one component in the makeup of rural communities. The information provided is sketchy. For some countries, more information is available from the UNECE survey on rural development statistics; see Chapter III of this Handbook.

XIII.2.1.5 Treatment of special institutions

EU countries

All the EU countries that provided information on this point follow the TIAH Manual and exclude religious houses, farming cooperatives and similar institutions from the agricultural households sector when generating statistics.

Non-EU countries

With the exception of Belarus, the thirteen countries that provided information on this point declared that they do not include special institutions in the agricultural households sector.

XIII.2.1.6 Classification into socio-economic groups when using the "narrow" definition of an agricultural household

EU Countries

The TIAH Manual (Rev.1.) is primarily concerned with the use of the "narrow" definition for generating results because this enables comparisons to be made between socio-professional groups drawn up in a consistent manner. In paragraph 2.7.3 it states that: "The basis for classifying households into socio-professional groups within the TIAH is the main source of income of the household's reference person." When generating results using the "narrow" definition most EU countries have a classification that is close to this target definition. In the Netherlands and Poland the income of the whole household is considered. In France and Italy the classification is based on what the reference person declares to be his/her main activity, taking different factors into account. In Finland and Sweden, reference is made to the main activity of the reference person without any details of how to determine what the main activity is. Luxembourg and Belgium base their classification on both income and time spent by the reference person.

Non-EU countries

Six countries explicitly stated that they do not use socio-professional classification of households. A further nine countries did not provide any information on socio-professional classifications. Of the remaining, Andorra and Croatia use the main source of income of the reference person/head of household to classify households into socio-professional groups. Belarus and the United States also use income in the classification but from the information provided it is not evident if it is the income of the household or of the reference person. In the Republic of Korea the main source of income of all household members is used.

XIII.2.1.7 Short-term stability mechanismEU countries and non-EU countries

Four EU countries make use of smoothing to improve the stability of the number of households deemed to be agricultural. None of the non-EU countries make use of short-term stability mechanisms.

XIII.2.1.8 Equivalence scalesEU countries

Thirteen countries use equivalence scales to convert the number of household members into consumer unit equivalent (see Table XIII.5). With the exception of Luxembourg, the same coefficients are used for both adult men and adult women. The coefficient for the head of household is in general 1.0 in all countries for which data are available. In Hungary, a smaller coefficient (0.9) is used if the head of household is a pensioner. In Luxembourg, the coefficient depends on whether the head of household is male (1.0) or female (0.8) and, if the head of household is male, also on whether he is over or under 60 (0.8 if he is over 60). Coefficients for additional adults vary between 0.8 and 0.65. The coefficient for additional adults used in the majority of countries is 0.7.

In nine countries, the coefficient for children is 0.5 regardless of the age of the children. However, in Hungary, Portugal and Luxembourg the coefficient for children is age dependent (ranging from 0.2 to 0.8 in Luxembourg and Portugal and from 0.4 to 0.65 in Hungary). In most countries persons of age 14 and above are classified as adults. The exceptions are Denmark (17 years) and Italy (15 years).

Non-EU countries

Eight of the countries that replied to the questionnaire gave details on the equivalence scales used (see Table XIII.6). In general, a coefficient of 1.0 is used for the first adult. In Armenia, the coefficient for the first adult is 1.0 if male and 0.8 if female. In Georgia, the coefficient depends both on the sex of the first adult and age, with people over 60 getting a lower coefficient. The coefficient used for additional adults varies between 0.5 in Croatia and 1.0 for males in Armenia. With the exception of Georgia, countries use just one coefficient for children, regardless of age. In most countries this coefficient for children is 0.5. Countries that do not use 0.5 include Croatia (0.3), Kazakhstan (0.8) and Ukraine (0.7). Only five countries provided information on the age from which persons are classified as adult. Two use a threshold of 14 years (Azerbaijan and Belarus), one uses 15 years (Armenia) and two use 16 years (Georgia and Republic of Moldova).

Table XIII.5

Equivalence scale used to give consumer units in EU countries

Country	First adult/head of household		Other adults		Children	Threshold age child/adult
	male	female	male	female		
Austria						
Belgium						
Denmark	1	1	0.7	0.7	0.5	17
Estonia	1	1	0.8	0.8	0.8	
Finland	1	1	0.7	0.7	0.5	
France	1	1	0.7	0.7	0.5	14
Germany	1	1	0.7	0.7	0.5	14
Greece	1	1	0.7	0.7	0.5	14
Hungary	1.0 ; 0.9 if pensioner household.	1.0; 0.9 if pensioner household.	0.75; 0.65 if pensioner household.	0.75; 0.65 if pensioner household.	0.65; 0.5; 0.4	
Ireland	1	1	0.7	0.7	0.5	14
Italy	1	1	0.7	0.7	0.5	15
Latvia						
Lithuania						
Luxembourg	1.0; 0.8 if 60 and over.	0.8	1.0; 0.8 if 60 and over.	0.8	Seven age dependent coefficients ranging from 0.2 to 0.8.	14
Netherlands						
Poland	1	1	0.7	0.7	0.5	14
Portugal	1	1	1.0; 0.8 if aged 60 and over.	0.8	Seven age dependent coefficients ranging from 0.2 to 0.8.	14
Slovakia						
Slovenia						
Spain	1	1	0.7	0.7	0.5	14
Sweden						
United Kingdom						

Source: UNECE survey on agricultural household income statistics.

Table XIII.6

Equivalence scale used to give consumer units in non-EU countries

Country	First adult/head of household		Other adults		Children	Threshold age child/adult
	male	female	male	female		
Albania						
Andorra						
Armenia	1	0.8	1	0.8	0.5	15
Australia						
Azerbaijan	1	1	0.7	0.7	0.5	14
Belarus	1	1	0.75	0.75	0.5	14
Bulgaria						
Canada						
Croatia	1	1	0.5	0.5	0.3	
Georgia	1.0 if between 16 and 60; 0.88 if over 60.	0.84 if between 16 and 60; 0.76 if over 60.	1.0 if between 16 and 60; 0.88 if over 60.	0.84 if between 16 and 60; 0.76 if over 60.	1.0 if between 7 and 16; 0.64 if 0 to 7.	16
Japan						
Kazakhstan	1	1	0.8	0.8	0.8	
Kyrgyzstan						
Mexico						
New Zealand						
Norway						
Republic of Korea						
Republic of Moldova	1	1	0.7	0.7	0.5	16
Romania						
Switzerland						
FYROM a/						
Turkey						
Turkmenistan						
Ukraine	1	1	0.7	0.7	0.7	
United States of America						

Source: UNECE survey on agricultural household

a/ The former Yugoslav Republic of Macedonia

XIII.2.1.9 Own consumption

EU countries

The TIAH Manual (3.4.2) states that own consumption should be valued “at the basic price of similar goods sold on the market.” Almost all of the EU countries estimate own consumption; the only exception is Finland that stopped producing such estimates in 2000. In Estonia and Lithuania the value is a self-reported estimation by survey respondents at market prices. Most of the countries declared that own consumption is valued at market price without specifying exactly what kind of price is used. Germany, Greece and Ireland make use of the producer/farm gate price, while in Spain the retail price is used.

Non-EU countries

Canada and Kyrgyzstan do not provide any estimation of own consumption value. The United States and Norway make use of self-reported estimations made by survey respondents. With the exception of Japan, that uses farm gate prices, the value of own consumption is usually obtained by using market price.

XIII.2.1.10 Imputed rent*EU countries*

Out of the 19 countries that replied to this question, four countries do not calculate an imputed rental value of dwellings. Of the remaining 15 countries, the imputed rental value of owned dwellings is usually measured on the basis of the value of actual rents of similar dwellings. In Estonia, Greece, Lithuania and Slovenia the value is a self-reported estimation by survey respondents.

Non-EU countries

Six countries, out of the seventeen that replied to this question, do not impute the rental value of owned dwellings.

The U.S. Department of Agriculture measures the rental value of operator dwelling by using direct reported values of the operator dwelling and rent to value ratios obtained from the U.S. Department of Commerce. The product of these two items gives a measure of gross space rent. Survey respondents report expenses on their dwellings except for depreciation, which is imputed. Gross rents and expenses are used to calculate an estimate of net rent for operator. In Japan, the imputed rent is valued on the basis of the purchase value of “own dwellings” less depreciation. In Norway, the value is included in the tax return data, though the stipulated taxation value of “own dwellings” is much lower than the real market value.

XIII.2.1.11 Calculation of net disposable income of agriculture households – items covered

Countries were asked to indicate from a list of items, based on the Eurostat IAHS Manual’s definition of disposable income (see Chapter X of this Handbook), which elements were included in their national statistics on agricultural household income. Because of the large number of individual items and differences between countries in what they cover, it is not proposed to make a detailed report here. Rather, reference should be made to Annex 9 of this Handbook.

Nevertheless, a general observation can be made about one aspect of the definition of income – the use of “adjustment.” As was described in Chapter X, disposable income can be interpreted as measuring the maximum value of the final consumption of goods and services (used to satisfy the needs and wants of its members) that a household can afford to consume in the current period without having to reduce its cash, dispose of other assets or increase its liabilities. However, the consumption possibilities of a household are also affected by the value of consumption goods and services received from the government as social transfers in kind. When these latter items are taken into consideration, the result is referred to as the “adjusted” disposable income.

EU countries

Nearly all EU countries calculate, or have calculated in the past, net disposable income of agricultural households, though the regularity and up-to-dateness of published statistics varies widely. Those

with no published estimates available are Hungary, Latvia, Slovakia, Slovenia and the United Kingdom. Most published results do not take social benefits in kind into account; only three countries (Lithuania, Spain and Estonia) calculate the “adjusted” disposable income.

Non-EU countries

Only nine non-EU countries reported that they calculate net disposable income of agricultural households. Japan, Mexico and Republic of Moldavia calculate the “adjusted” disposable income by allowing for social transfers in kind. Australia reported that it deducts *imputed* social transfers in kind. In addition, Albania reported that implied data are covered elsewhere.

XIII.2.1.12 Conclusions

The results of the survey on agricultural household income statistics undertaken by UNECE show that there are many differences in the concepts, definitions and coverage used by countries in defining the income of agricultural households. It might be argued that such flexibility of detail is needed in order to reflect differing socio-economic conditions. However, these differences make cross-country comparisons difficult. This Handbook may be able to improve this situation by pointing to good practice in terms of definitions and their use.

XIII.2.2 Selected developing countries

XIII.2.2.1 Background

The UNECE survey on agricultural household income statistics detailed in the preceding section (XIII.2.1) was repeated in March 2005, when the UNECE sent out exactly the same survey questionnaire to a group of developing countries. It is recognized that such countries face problems of a conceptual and practical nature that are different from those of OECD Members, requiring a separate treatment in this part of the Handbook that deals with what happens in practice. The group of developing countries was selected mainly on the basis of two criteria: The country should have conducted at least one Living Standards Measurement Study (LSMS) household survey and/or conducted a census of agriculture within the FAO's decennial World Census of Agriculture Programmes (WCAP)(see Box XIII.1); and the government in question should have a data access policy, which preferably requires no prior permission from the respective government to use the data.⁴ Whereas the first criteria was based on purely methodologically grounds, the second criteria was rooted in the realization that a lot of the needed information had to be extracted from online Internet resources, due to the low response rate amongst the survey recipients. The ten countries that formed the basis of this analysis are Brazil, China, Ghana, India, Jamaica, Morocco, Peru, South Africa, Vietnam, and Zambia (see Annexes C and D at the end of this chapter).

Household surveys have become a dominant form for collecting socio-economic data in developing countries, supplementing or sometimes even replacing other data collection programmes and civil registration systems (UN, 2005). Important indicators to inform and monitor development policies are often derived from such surveys. Since 1970, several major international programmes have been organized to support the collection of household survey data in developing countries. Among the largest such

⁴ Many countries have alternative sources for some of the information they need on persons working in or dependent on agriculture (for instance, population census or sample survey evidence) and therefore may be inclined to collect only selected data instead of conducting a full agricultural census.

programmes have been the United Nations Household Survey Capability Programme (UN, 2005), and the World Bank's Living Standards Measurement Study (LSMS). The LSMS is a multitopic survey.

A series of over 60 Living Standards Measurement Study (LSMS) surveys has been carried out under the aegis of the World Bank in over 40 countries. The methodology of the LSMS surveys, which gather data on many aspects of household welfare, was developed by the World Bank in order to provide policy relevant, household level data for evaluating the effect of a variety of government policies on the living conditions of the population. Because of the substantial variation in the contents of the surveys it is important to scrutinise the LSMS Information Table. The Basic Information Documents contain information on the purpose of the survey, sample design, organization of the survey team, names of original and constructed data files, and codes not contained in the questionnaires. Over time, LSMS surveys have become increasingly customized to fit specific country circumstances, including policy issues, social and economic characteristics, and local household survey traditions (Grosh and Glewwe, 2000a). The principal implementing agency is usually the national statistical office (NSO) which takes the lead in questionnaire design, sample design, and fieldwork methodology using the techniques found by the LSMS to be most effective (Scott et al., 2005).

Box XIII.2

The World Census of Agriculture Programme (WCAP)

Since 1950 the FAO has been assisting countries in planning and conducting censuses of agriculture. The agricultural census is of particular importance to countries in which significant segments of the population depend on agriculture for their livelihood. From a strictly statistical viewpoint, the census data represent one of the most important components of the information system in a country and can serve as the basis for many other statistical activities related to food and agriculture, such as conducting various agricultural sample surveys.

Each decennial WCAP, promoted first by the International Institute of Agriculture and then prepared by the FAO, has provided methodological guidelines for organizing national agricultural censuses. The six decennial Programmes - centred on 1950, 1960, 1970, 1980, 1990 and 2000 - gradually expanded the census scope while keeping structural aspects of the agricultural production sector as the central theme (Stloukal, 1999). Today, there are more than 100 countries participating in the WCAP at set periods.

The publication "Programme for the World Census of Agriculture 2000," (Vol. 5), is intended to assist countries by providing definitions, concepts, standards and guidelines for censuses in the decade 1996-2005. The FAO's Statistics Division is currently developing the Programme for the 2010 round of agricultural censuses, covering the period from 2005 to 2014. The programme is expected to be finalized in 2005.

Each WCAP has attempted, in one way or another, to cover some of the basic demographic and economic characteristics of persons belonging to the population of the holders' households. The FAO recommendations have typically been decided on the basis of extensive consultations with statistical offices in individual countries. Their evolution thus mirrors the collective experience of national and international organizations with regard to the collection of agricultural information.

Recognizing that countries differ in their capacity to carry out a census of agriculture, FAO WCAPs have always included a recommendation that countries should tailor the agricultural census to their unique situation. Countries with poor statistical systems have been advised to restrict the scope to essential items, whereas statistically more developed countries have been invited to broaden their census objectives. Ultimately, however, it is up to the national authorities to choose the statistical topics to be monitored, and the classifications to be used, in the agricultural census in their country (Stloukal, 1999).

Source: <http://www.fao.org/es/ess/census/default.asp>

LSMS surveys have several characteristics that distinguish them from other surveys. First, and perhaps the most important, is that they use several questionnaires to collect information about different aspects of household welfare and behaviour. Second, they typically have nationally representative, but relatively small, samples - usually between 2,000 and 5,000 households. This only yields accurate descriptive statistics for the country as a whole and for large sub-areas (such as a division into rural and urban areas) (Grosh and Glewwe, 2000a). Third, because of the complexity of most LSMS surveys, they have rigorous quality control procedures to ensure that the data they gather are of high quality. These procedures are generally difficult to implement on larger samples (Grosh and Glewwe, 2000a).

Despite the success of the LSMS programme, several challenges remain for LSMS surveys and other multitopic household surveys. First and most obviously, many developing countries still have inadequate household survey data. This is true even for some of the countries that have recently fielded new surveys. Ideally, all governments should collect data on a regular, ongoing basis in order to monitor poverty trends over time. However, survey efforts are still sporadic in many developing countries today, and many surveys have serious deficiencies such as limited questionnaires, samples that exclude rural areas, and long delays in processing the data after completing the fieldwork.

Second, improvements are needed in the process of adapting the LSMS approach to countries that have not yet implemented LSMS-type surveys.

Third, the data gathered from some parts of LSMS survey questionnaires have been disappointing. Two particularly difficult problems entail the measuring of household income from agriculture and non-agricultural self-employment and the measuring of savings and financial assets (see Chapter XII of this Handbook).

Fourth, new issues have emerged since the first LSMS surveys were implemented. The economics profession has increasingly discounted the notion of the household as a unified decision-making body, trying instead to understand how goods, services, and power are allocated among the different members of a given household (Grosh and Glewwe, 2000a).

XIII.2.2.2 Definition of household

There is no uniformity in the definition of the household across different surveys, although all involve some form of living and eating together (see Table XIII.7). Some definitions incorporate the pooling of funds. Unfortunately, different criteria are often in conflict, and household arrangements are often not constant over time. Many of the problems are associated with the complex structure of living arrangements in developing countries. As noted in Chapter IX of this Handbook, when men have several wives, each wife often runs what is effectively a separate household within a larger compound presided over by the husband. Even without polyandry, several generations of the families of siblings may live in a single compound, sometimes eating together and sometimes not, and with the group breaking up and reforming in response to economic conditions. In some countries, there are lineages to which groups of households belong, and the head of the lineage may have power to command labour, to order migration, to tax and reward individuals, and to control communal assets. Even so, members of the lineage will typically live in separate households, which may not be the appropriate units for the analysis of at least some decisions (Deaton, 1997). An overall view of the characteristics of the definitions is given in Table XIII.8.

A decision to separate previously pooled households should not affect estimates of average consumption or income per head, but will increase measures of inequality, since the previous single estimate for the pooled household is replaced by multiple estimates for each of the sub-households. Splitting

households has the same effect on the distribution of income or consumption as an increase in dispersion with no change in mean, and so must increase measures of inequality (Deaton, 1997).

From Table XIII.7 it appears that all the (non-randomly) selected developing countries in the sample use common dwelling as the main criteria in their definition of household, while de-emphasizing the necessity of a family link. Moreover, most of the sampled developing countries do make reference either explicitly or implicitly to shared budget and food/meals in their definition of a household within the framework of the Living Conditions Surveys.

Table XIII.7

Definition of household in a selected group of developing countries

Country	Definition of 'household'
Brazil	A household is defined as the person or collection of persons, whether related or not, that habitually live in the same private dwelling, occupying it in part or in whole, and that tend to their life needs together.
China	Household members were defined to include "all the people who normally live and eat their meals together in this dwelling." Those who were absent more than nine of the last twelve months were excluded, except for the head of household.
Ghana	A household was defined as a group of people who have usually slept in the same dwelling and taken their meals together for <u>at least 9 of the 12 months</u> preceding the interview.
India	A household is defined as a group of people who normally live and eat their meals together. For the purposes of this survey, "normally" is taken to mean that the person concerned has lived in the household for at least 3 of the past 12 months.
Jamaica	A household consists of one person who lives alone or a group of persons, who, as a unit, jointly occupy the whole or part of a dwelling unit, who have common arrangements for housekeeping, and who generally share at least one meal. The household may be composed of related persons only, of unrelated persons, or of a combination of both.
Morocco	A household is defined to include all those individuals for whom the household is their primary residence, and who are economically dependent on the household. Household members also include: individuals who are not physically present but whose absence has been for <u>less than one month</u> .
Peru	The household is defined as the person or collection of persons, whether related or not, that habitually live in the same private dwelling, occupying it in part or in whole, and that tend to their life needs together.
South Africa	The first definition of the household comprises individuals who: (I) Live under this 'roof' or within the same compound/homestead/stand at least 15 days out of the past year, and (II) When they are together they share food from a common source (i.e. they cook and eat together); and (III) Contribute to or share in, a common resource pool (i.e. they contribute to the household through wages and salaries or other cash and in-kind income or they may be benefiting from this income but not contributing to it, e.g. children, and other non-economically active people in the household. Visitors were excluded from this definition. The second definition of the household includes only those members who had lived "under this roof for more than 15 days of the last 30 days". This definition was derived to eliminate double-counting of individuals.
Vietnam	Household members were defined generally to include "all people who normally live and eat their meals together in this house and have done so for 6 or more months out of the past year" which is the same as in 1992-93. However, specific cases to include as members or exclude as non-members differ slightly from 1992-93 and are listed in the questionnaire.
Zambia	A household is defined as a group of persons who normally eat and live together. These people may or may not be related by blood, but more common provision for food or other essential living, and they have only one person whom they all regard as the head of household. A household may comprise several members and in some cases may have only one member. Usual Member of the household -- The de jure approach was adopted for collecting data on household composition. It relies on the concept of usual residence. A usual member of household was considered to be one who had been living with a household for at least 6 months. Newly married couples were regarded as usual members of the household even if one or both of them had been in the household for less than 6 months. Newly born babies of usual members were also considered as usual members of the household. Members of the household who were at boarding schools or temporarily away from the household, e.g. away on seasonal work, in hospital, away to give birth, visiting relatives of friends, but who normally live and eat together, were included in the list of usual members of the household.

Source: UNECE (2005) Survey.

In certain provinces of **Zambia** households are characterized by being polygamous, e.g. a man living in a village with several wives each living with her children in a separate hut or group of huts should be regarded as separate households if each wife cooks and eats meals separately. In this case, even if they sometimes eat together, the fact remains that the wives are running separate households. Therefore, they are treated as different households. On the other hand, a man living in a village with several wives, each living with her children in a separate hut or group of huts, is regarded as one household if all those wives cook and eat together.

Table XIII.8
Definition of household in selected developing countries

Country	Definition of household				
	common dwelling	shared budget	shared food/meals	Reference to family link necessary	students/temporarily absent
Target definition (from TIAH Manual, Rev.1, para 2.4.1)	yes	yes	yes	no	not mentioned
Brazil	yes	(yes)	(yes)	no	not more than 12 months
China	yes	(yes)	yes	no	not more than 9 of the last 12 months
Ghana	yes	(yes)	yes	no	not more than 3 of the 12 months
India	yes	(yes)	yes	no	not more than 9 of the last 12 months
Jamaica	yes	yes	yes	no	not mentioned
Morocco	yes	(yes)	yes	no	absent for less than one month
Peru	yes	(yes)	(yes)	no	at least 3 of the last 12 months
South Africa	yes	yes	yes	no	at least 15 days out of the past year or more than 15 days of the past 30 days
Vietnam	yes	(yes)	yes	no	less than 6 of the past 12 months
Zambia	yes	yes	yes	no	at least six months

Source: UNECE (2005) Survey on Agricultural Household Income Statistics.

Note: Information extracted from official websites.

The **Zambian** Living Conditions Monitoring Survey uses the *de jure* (“usual”) system of enumeration as opposed to *de facto* (“as of previous night”) system. A “usual” member of household is defined as one who has been living with a household for at least six months. He/she may or may not be related to the other household members by blood or marriage, and may be a house helper or labourer. A usual household member normally lives together with other household members in one house or closely related premises and takes his/her meals from the same kitchen. Newly married couples are to be regarded as usual members of the households even if one of them has been in the household for less than six months.

Members of the household who are at boarding schools or any other persons temporarily away from the household who normally live and eat there such as persons temporarily away for seasonal work, because of illness, giving birth, visiting relatives or friends have to be included in the list of usual members of the household. Any other persons such as visitors who have spent at least six months with the household also have to be included as usual members of the household. Other persons such as servants and lodgers who are part of this household must be taken as usual members (CSO, 1996).

In **Ghana** Living Standards Survey IV a household is defined as a group of people who have usually slept in the same dwelling and taken their meals together for at least 9 of the 12 months preceding the interview. All listed persons who have been away from the household for more than three months are not considered to be household members except, (1) the person identified as the head of household even if he/she has not been with the household for 9 months or more; (2) newly born children; (3) students and seasonal workers who have not been living in or as part of another household.⁵

⁵ In full, the Ghana Living Standards Survey includes the following as part of the household: All the persons not present but who normally live, sleep and eat together with the household, i.e. those who are temporarily away for schooling, temporarily left for marriage, vacation, seasonal work, illness, giving birth, military training, prisons etc.

In the **South Africa** “Baseline Household Statistics” methodological report, the household concept definition was drawn up in such a way as to avoid double counting of individuals who may live in more than one place. Hence, two definitions were used. The first definition was used only in the first section of the questionnaire, i.e. the Household Roster and the second was used for the rest of the questionnaire. The first definition of the household comprised all individuals who: (i) live under this roof or within the same compound/homestead/stand at least 15 days out of the past year; and (ii) when they are together they share food from a common source; (iii) contribute to or share in, a common resource pool. Visitors were excluded from this definition.⁶

The second definition of the household only included those members who had lived “under this roof for more than 15 days of the last 30 days.” This definition was derived to avoid double counting of individuals.

The **Brazil** LSMS survey, 1996-1997, defines a **resident** as a person for whom the dwelling unit is his/her place of habitual residence. The following are also considered as residents of the dwelling unit: the person present on the date of the interview and who does not have another place of habitual residence; the person for whom the dwelling is his/her place of habitual residence but who is temporarily absent on the date of the interview for a period of not more than 12 months, as a result of, for example, boarding at a school.⁷

The **China** Living Standards Survey (CLSS), which consists of one household survey and one community (village) survey, was conducted in Hebei and Liaoning Provinces (northern and north-east China) in July 1995 and July 1997, respectively. In this CLSS, household members were defined as “all the people who normally live and eat their meals together in this dwelling.” Those who were absent more than nine of the last twelve months were excluded, except for the head of household.

The **India** Survey of Living Conditions in Uttar Pradesh and Bihar, 1997-1998, defines a household as a group of people who normally live and eat their meals together. For the purposes of that survey, “normally” is taken to mean that the person concerned has lived in the household for at least 3 of the past 12 months.⁸ People who live in the same dwelling, but do not share food expenses or eat meals together, are not members of the same household. For example, if two brothers, each having his own family, live in the same house but maintain separate food budgets and cooking facilities, they would constitute two separate households. Likewise, people who eat together but do not sleep in the same dwelling are not members of the same household. However, exception to this rule may be made in the case of those persons who normally take their meals together and for all purposes live together, but may sometimes sleep in other places for security reasons (e.g. with livestock, or in shop or other place of business).

For the 1982 **Jamaica** Population Census, the following definition of household was adopted and has been used for all household surveys conducted since: a household consists of one person who lives alone

⁶ The South Africa Integrated Household Survey is a nationally representative, multi-purpose household survey, which was undertaken in the nine months prior to the country’s first democratic elections in April 1994.

⁷ The following criteria are applied to define the dwelling in which a person is to be considered a resident when more than one dwelling is occupied by that person. The first criterion found to be applicable will determine the dwelling: (1) the person is considered a resident of the dwelling unit in which that person’s family resides; (2) the person is considered a resident at the dwelling unit in which that person spends the major part of the year; (3) the person is considered a resident of the dwelling unit in which that person has resided for the longest period of time.

⁸ The only exceptions to be made to this rule should be for (i) persons who are the main provider for the household, (ii) infants who are less than 3 months old, and (iii) newly weds who have been living together for less than 3 months. Servants, lodgers, farm-workers, and other such individuals who live and take meals with the household are to be counted as household members, even though they may have no blood relation to the household head.

or a group of persons, who, as a unit, jointly occupy the whole or part of a dwelling unit, who have common arrangements for housekeeping, and who generally share at least one meal. The household may be composed of related persons only, of unrelated persons, or of a combination of both. The same definition was adopted for the 1991 Population Census.⁹

The first **Morocco** Living Standards Survey (MLSS) was conducted between October 1990 and October 1991 and provides data for a sample of 3,323 households and 19,577 individuals.¹⁰ The MLSS 1990-1991 survey covers all household members, defined to include all those individuals for whom the household is their primary residence, and who are economically dependent on the household. Household members also include: individuals who are not physically present but whose absence has been for less than one month (or in the case of those hospitalized, less than six months), lodgers who share at least one meal with the household, and servants who reside at and share meals with the household.

The first **Vietnam** Living Standards Survey (VLSS) was conducted in 1992-1993 by the State Planning Committee (now the Ministry of Planning and Investment), together with the General Statistical Office. The second round of the VLSS was conducted between December 1997 and December 1998.¹¹ This survey defines the household members as “all people who normally live and eat their meals together in this house and have done so for 6 or more months out of the past year.” While this is the same definition as used in 1992-1993, there are some differences with respect to specific cases about who to include and who to exclude from the household.¹²

XIII.2.2.3 Definition of agricultural household

When constructing statistics for agricultural households in developing countries the primary unit of enumeration is the agricultural holding, which may be briefly defined as a techno-economic unit comprising all land and livestock used for agricultural purposes and operated under a single management, without regard to title or legal form. The census should, in principle, cover all holdings in the country. For practical reasons, however, the census enumeration is usually limited to those holdings above prescribed limits of size and do not include land solely used for communal grazing, etc. A holder is defined as a person who exercises management control over the operations of the agricultural holding. Usually there is one holder in an agricultural household, who may or may not be the head of the household. In developing countries, a one-to-one correspondence between a household and a holding is quite usual, but it is certainly not universal. A single agricultural holding can include several agricultural households, and one agricultural household can operate on several agricultural holdings.

When using agricultural census data, one has to remember that in some contexts it is common that the demographic data collected in a census of agriculture refers only to persons attached to agricultural holdings and that there may be no coverage of other persons belonging to the holders' household, and hired

⁹ The Jamaica Survey of Living Conditions (JSLC), first conducted in 1988, was originally conceived to be a semi-annual survey. In 1990, an annual survey was deemed to be sufficient and an annual schedule was adopted. Fourteen rounds of the survey were completed from August 1988 to July 2000. The JSLC differs from other LSMS surveys in its relatively narrow focus and greater emphasis on immediate policy impact. The JSLC is linked to the ongoing quarterly Labour Force Survey.

¹⁰ Survey fieldwork began on October 15, 1990, and ended on October 30, 1991. Fieldwork was organized into 10 four-week periods (survey “months”), but there were some breaks during this time so that the survey itself took about 54 weeks to complete.

¹¹ The second round of the VLSS used 5 questionnaires: commune, price, school, clinic, and household. The household questionnaire contained 15 sections each of which covered a separate aspect of household activity.

¹² See Table 2.2: Categories of household members and Non-members at: <http://www.worldbank.org/html/prdph/lms/country/vn98/vn98bif.pdf>

workers who either permanently or occasionally work on the holding. Thus, agricultural censuses do not cover all persons associated with agriculture (Stloukal, 1999).¹³ Many of these problems also are faced by surveys of holdings in developed countries.

An agricultural household is defined as a household in which at least one member is carrying out some agricultural activity on the holding belonging to the household (excluding the growing of vegetables meant for home consumption). Table XIII.9 describes the relationship between the holding and the agricultural household for a number of developing countries.

Table XIII.9

Definition of agricultural household and treatment of fishery/forestry in developing countries

Country	Definition of agriculture households
Brazil	The definition of holding matches with the one suggested in the FAO Programme for the World Census of Agriculture (WCA) 2000.
China	Agricultural household: refers to rural household whose members are either engaged in purely agricultural activities, or in a combination of agricultural and non-agricultural activities
India	Operational Holding (the statistical unit for census) is defined as all land wholly or partly used for agricultural production and operated as one technical unit by one person, alone or with others, without regard to title, legal form, size or location. Operational Holder is the person who takes all managerial decisions regarding cultivation of land. He may be the legal owner or a leaser or a tenant farmer.
Jamaica	Farmers that possessed a total area of under 25 acres (the definition of small farmer used by ACB).
Morocco	Agricultural holding was defined as an economic unit of agricultural production under single management, comprising all livestock kept and all land used for agricultural production purposes, regardless to title or legal form.
Peru	The selected statistical unit is the Agricultural Unit defined as any piece of land consisting of one or more parcels, totally or partially used for agricultural production, carried out as a technical-economic unit by the agricultural holder, without regard to size, tenure or legal status
South Africa	If the household members are engaged 50% in agricultural and 50% in non-agricultural activities, the category is defined by the household's income.
Vietnam	Agriculture, forestry, fishery households: are households with all or most of labourers regularly participating, directly or indirectly, in agricultural, forestry or fishery production and these activities are the principal source of their income.
Zambia	Agricultural Household: Is a household in which at least one member is carrying out some agricultural activity on the holding belonging to the household (excluding the growing of vegetables meant for home consumption). Preliminary testing showed that there was almost one-to-one relationship between the agricultural household and holding. The terms holding and agricultural household are therefore used interchangeably.

Source: UNECE (2005) Survey.

XIII.2.2.4 Classification into socio-economic groups

The basis of classifying households into socio-professional groups in developing countries is usually the use of their labour. The **China** Living Standards Survey (CLSS), 1995-1997, asked all individuals age thirteen and above to respond to the employment activity questions. The CLSS collected general information on farm and non-farm employment, such as, for example, whether or not the household member worked on a household owned farm in 1994, number of work days and number of hours worked during the busy season, occupation and sector codes of the major, second, and the third non-farm jobs, and the number of days worked on, and total income derived from, these non-farm jobs. Furthermore, detailed information on the major and the second non-farm job is collected.

¹³ <http://www.fao.org/sd/wpdirect/wpan0041.htm>

The **Ghana** Living Standards Survey round four (GLSS 4) 1998-1999 was designed to gather information on employment, time use and the different sources of income for household members aged seven years and over.¹⁴ GLSS 4 provided information on the characteristics of main occupation for the previous 12 months by detailing the kind of work or industry a respondent was mainly engaged in.

Individuals in **Jamaica** Survey of Living Conditions (JSLC) can be linked to the data from the Jamaican Labour Force Survey. Each member of the household older than 14 years of age is asked questions regarding his or her employment status.¹⁵ In the 1997 JSLC, a module was included to obtain an in-depth picture of earnings in the country. This module was based on the employment and earnings portion of the 1993 Time Use module that was found to be superior in its response rate for earnings data compared to other attempts including the Labour Force Surveys. The information collected included details on the main occupation, allowances received in addition to or as part of salary, income, additional employment, information on the unemployed, and household enterprises.

The **Morocco** Living Standard Survey, 1990-1991, provided, for example, information on current principal employment for individuals aged seven or more; characteristics of salaried employees; current secondary employment; principal employment in the previous 12 months; salary earnings; and secondary employment in the past 12 months.

The **Peru** Living Standards Survey (LSS) asked questions on the economic activity of those six years and older and provides a description and code of occupation and a description and code of establishment.¹⁶ The Peruvian LSS also provides a description and code of secondary occupation at which most hours were spent in last 7 days and a description and code of Establishment.

The **South Africa** Integrated Household Survey, 1994, asked questions about what job the household members did and in which sector they were employed. These questions were repeated for a second casual or temporary job.

The **Vietnam** Living Standards Survey asked all individuals age six and older to respond to the economic activity questions. These began with questions on the nature of their work in the last seven days. For work in the last seven days, information was collected on, for example, length of employment, type of employer and money and in kind compensation and benefits. Similar questions were asked of any secondary job in the last seven days. If the main work in the past twelve months was different from the main or secondary job in the past seven days, the complete set of questions was answered for that work as well. For those in self-employed agricultural work, a different series of questions was asked on hours worked in peak and non-peak weeks in the past 12 months for six different agricultural-related work activities. Occupation and industry of employment codes are printed directly in the household questionnaire. In addition, this survey gathered data on household businesses for up to the four most important enterprises operated by the household.

¹⁴ In this survey, main occupation is defined as: the work to which most time is devoted when a respondent has several jobs. For instance, the main occupation for the past 12 months of a respondent who farms mostly but often goes fishing during the dry season is farming.

¹⁵ The Labour Force Survey contains much less detail than the standard LSMS employment and job search modules. Moreover, the Labour Force Survey income data are of dubious quality.

¹⁶ Principal Economic Activity was defined as the activity on which most hours were spent (NOT which provided the most earned income).

XIII.2.2.5 Short-term stability mechanism

None of the surveyed developing countries make use of short-term stability mechanisms.

XIII.2.2.6 Equivalence Scale

As noted in Chapter IX, equivalence scales are designed to account for the varying requirements of families of differing sizes and age compositions, and an extensive literature exists on their conceptual bases and estimation. A feature of developing countries is that nutritional requirements play a far more significant role than among OECD Members. Tables XIII.10 and XIII.11 give basic calorie requirements and calorie equivalence scales.

There are two major approaches to the construction of equivalence scales. The first can be termed the subjective method and is based on personal assessment using survey data. This survey approach attempts to measure a minimum standard of living for alternative family structures. Jane Xi Pan *et al.* (2004) used the subjective-qualitative method to estimate household equivalence scales for their study of urban Chinese poverty in 1988 and 1995. To avoid the problem that persons in rich regions tend to have higher perceived needs they incorporate objectively determined cost-of-living indices to adjust for regional differences in purchasing power. Minimum needs thresholds were constructed for seven family types and converted into equivalence scales. They found that a two-person family composed of two adults with the age of the household's head greater than or equal to 60 years old would need 1.54 times as much as a single adult, and three-person family without children would need 1.99 times as much as a single person. Three persons with one child would need a little less, 1.77 times that of a single person. Finally, four or more person households with children (D4+_K) and without children have equivalence factors of 2.00 and 2.38. Pan *et al.* (2004) went on to construct minimum needs thresholds for four different regions.

The second major approach is to use expert-based equivalence scales. Gustafsson and Li (2001) provide a set of expert based equivalence scales, which they use to measure inequality in Chinese incomes.¹⁷

An interesting observation is drawn from Burgess (2001). In **China** the land equivalence scales for children 0-14 are 0.567 and 0.507 in Sichuan and Jiangsu respectively which are almost directly in line with the calorie equivalence scales, 0.576 and 0.522. This, according to Burgess (2001), serves as preliminary evidence that land is being allocated in line with nutritional needs. If the nutritional hypothesis holds then land allocation should be done mainly on the basis of the number of adult equivalents in a given household as determined by the calorie share method.¹⁸

¹⁷ Gustafsson and Li (2001) indicate that one person = 1.0, two persons = 1.88, three persons = 2.66, four persons = 3.54 and five-plus persons = 5.0.

¹⁸ Calorie based equivalence scales are thus closer to the notion of physiological or nutritional welfare which motivated the earliest work on equivalence scales though the method is not prescriptive and behavioural responses are taken into account.

Based on a 0-4, 5-9, 10-14, 15-55+ age breakdown there are 138 household types in Sichuan and 117 household types in Jiangsu each of which was assigned a unique equivalence scale. A 0001 household containing one adult was set as the numeraire and had a scale equal to unity. Scales calculated for other households are thus interpretable as adult equivalents.

Table XIII.11
Nutrition (calorie) based adult equivalence scales

Age (years)	Male Weight	Female Weight
0	0.33	0.33
1	0.46	0.46
<hr/>		
2	0.54	0.54
3-4	0.62	0.62
5-6	0.74	0.70
7-9	0.84	0.72
10-11	0.88	0.78
12-13	0.96	0.84
14-15	1.06	0.86
16-17	1.14	0.86
18-29	1.04	0.80
30-59	1.00	0.82
60+	0.84	0.74

Source: Dercon (1998).

Note: Calculated from World Health Organization data.

It should first be noted that imputation is an inherently difficult and error-ridden process. Imputation is likely to work best where there is relatively little need for it - when the economy is highly monetized but there is a relatively small amount of own production (such as vegetable gardens) involving goods that have clear market equivalents. Imputation works badly in economies in which a large share of transactions do not pass through the market.

Food that is either home-produced or received as gifts or payment in kind has been the most important imputed item in LSMS surveys to date. In principle, the calculations are straightforward. The respondent is asked to report the values of any home-produced food items consumed by the household during the reference period, and the sum of these values is added to the consumption total. Given the seasonality of production, the recall period probably has to be a year, or at least a typical month over the last year. It may be possible to do better than this when there is a multiple-visit agricultural module in the survey. However, the major difficulties are with valuation, since the respondent is being asked a purely hypothetical question about the sale or purchase of an item that is rarely traded or that may have been traded some time ago (Deaton and Grosh, 2000).

The value of the physical quantities of goods consumed observed by the respondent can be obtained in several ways. As noted in Chapter X, *farm-gate prices* set a lower bound on valuation, since it is usually presumed that consumption is evidence that the good is valued beyond what it would fetch, whereas *market*

prices, are likely to be too high because they include transport and distribution margins and because the commodity traded is often of higher quality than its home-grown counterpart. However, once the quantity has been obtained, the respondent could be asked to report one or both of these two prices or simply to estimate the value of the commodity directly. Some degree of cross-checking is possible from the quantities and prices of purchases reported in the agricultural module or from the prices gathered in the community questionnaire (Deaton and Grosh, 2000).

The **China** Living Standards Survey (CLSS), 1995-1997, provides information on household consumption expenditure. The CLSS collects detailed expenditure information on thirty-four items of market purchased food (including expenditure in restaurants) in the previous year. Besides market purchases (including barter), the CLSS gathers information on consumption from home-produced food (total thirty-two items) over the previous year.

The **India** Survey of Living Conditions Uttar Pradesh and Bihar, 1997-1998, on food expenses and home production, collects information on the household's total expenditure on food of various types, including an estimate of the value of home-produced or home-grown food consumed by the household. It also provides an estimate of food consumed that was received as payment in kind, i.e. as remuneration for work done on someone else's farm, as gifts, or as presents from relatives and/or friends.

The **Jamaica** Survey of Living Conditions asks the respondent if there was any expenditure in the previous twelve months on 43 categories of food items. For each item that had been purchased in the last year, the amounts spent during the past seven days and the amount spent during the past 30 days/4 weeks was recorded. In 1992 through 2000, the value of home production and gift food was integrated into the food expense module. Thus the number of items for which this information was collected was expanded from 43 to 55.

In the JSLC surveys from 1988 through 1991, for sixteen food items, the respondent was asked if the household had eaten any food that was home-produced or that was received as a gift. The respondent was asked how much it would cost to buy the amount of home-produced food consumed during the past seven days and the amount consumed during the past 30 days/4 weeks, and the amount it would cost to buy the amount received as gift during the past 30 days/4 weeks. Starting in 1992, the value of home production and gift food was integrated into the food expense module.

The **Morocco** Living Standards Survey provides information on individual expenditures in the past 30 days; individual expenditures in the past seven days; daily (over four days) expenditures on food and household items; and home production and consumption of food.

The **Peru** Living Standards Survey asks questions such as: Does the household produce any food for business or home use; did the household purchase or use self-produced products in past 15 days; how the food item was obtained (for example, self-supplied); and total amount of purchases or self-production in the past 15 days.

The **South Africa** Integrated Household Survey looks at the patterns of food consumption for all the people in the household. It inquires as to whether any of those foods were received in the form of a gift or as payment for work that any member of the household did. It elicits information about whether the household was able to consume any of the foods listed as a result of its being produced by the household. It also asks about what crops, if any, the household was harvesting in the past year.

The **Vietnam** Living Standards Survey, 1997-1998, collects detailed information on market purchases and consumption from home production for 45 food items. Thus, besides market purchases

(including barter), information is also collected on consumption from home production. Again data is obtained on the number of months each item was consumed, but unlike market purchases, the information on the quantity and value of consumption is obtained by asking a single question on the total amount for the previous 12 months (as opposed to asking how often the item was purchased each month and the quantity purchased each time).

The **Zambia** Living Conditions Monitoring Survey I (1996) asked about how much was spent on and consumed from own produce from a list of food items during the previous two weeks.

XIII.2.2.8 Imputed rent

For housing, the largest of the durable goods, the imputation approach again starts from the rental equivalent. Unlike the value of most other durable goods, rents can sometimes be observed directly, and these are the correct numbers to add into the consumption aggregate. For households that do not report rents, the standard procedure is to impute a rent based on the characteristics of the house, as reported in the housing module. One approach is through “hedonic” regressions in which reported rent is regressed on the house’s characteristics (such as size, number of rooms, construction material, and location) and the results are used to calculate rents for other properties where rents are not reported.

The credibility of these regressions is compromised if only a small fraction of the sample reports rents and, more generally, if those who report rents are unrepresentative of the population as a whole. While it is possible to make mechanical corrections for the selection, these corrections usually require arbitrary and untestable assumptions that further compromise the credibility of the process. This is a difficult area. In general, survey analysts should make sure that indefensible imputations are not dominating welfare comparisons. The data required for rent imputations are gathered in the LSMS housing module (and to some extent in the community questionnaire) (Deaton and Grosh, 2000).

The **China** Living Standards Survey (CLSS), 1995-1997, contains basic information on housing from all the 880 farm households interviewed and selected from a total of thirty-one sample villages for the household survey. However, no information was collected on housing rent.¹⁹

The **Ghana** Living Standards Survey round four (GLSS 4) 1998-1999 seeks information on the type of dwelling, occupancy status, number of rooms and room space, **expenditures**, utilities and amenities as well as the physical characteristics of the dwelling. GLSS 4 seeks information on rent payment(s), either cash or in kind.

The **India** Survey of Living Conditions Uttar Pradesh and Bihar, 1997-1998, on housing and access to facilities, collects information in three areas: the type of dwelling occupied by the household, access to basic services (water, sanitation, and electricity), and access to various facilities providing services. However, no information is collected on rent, despite the fact that certain questions are for renters only.

In **Jamaica** Survey of Living Conditions, questions on housing are designed to characterize the type of dwelling occupied by the household and to determine the amount spent on housing, including rent, water, electricity, and other expenses. Expenses include the amount paid for water and electricity. Information on ownership, rent, mortgage and taxes is also collected.

¹⁹ Several rounds of pilot surveys for preparing the CLSS questionnaire showed that there are almost no households living in dwellings they do not own. Therefore, in the housing section of the formal questionnaire, there are no questions about house renting activities. To see which method was used to get the house depreciation rate and eventually to obtain the “use value” of dwellings see Appendix D: Household Expenditure Calculation, section 2.3 in: <http://www.worldbank.org/lms/country/china/docs/chnbinf.pdf>

The **Morocco** Living Standard Survey, 1990-1991, collects information on the status of ownership or rental arrangement; physical characteristics of dwelling; services (water, sewage, etc.); and expenditures on housing.

Peru National Survey of Households Living Standards Measurement, May - July 1994, provides information on Ownership Status of Dwelling. For example, rented in exchange for in kind services or money, and asks follow-up questions such as "if rented, from whom rented; if you had to rent, estimated rental value in Soles per month?"

Vietnam Living Standards Survey, 1997-1998, contains information on the type of dwelling, housing expenses, and housing characteristics for all households interviewed. Information was collected on ownership status and rental cost if rented.

The **Zambia** Living Conditions Monitoring Survey I (1996) asks about the basis upon which the household occupies the dwelling; how the rent is paid; and how much the household pays in rent per month.

XIII.2.2.9 Calculation of net disposable income of agriculture households

As was noted in Chapter X, income and consumption are different but related concepts. Though the focus of this Handbook is the income of agricultural households, the purpose of measuring income is very much linked to the ability that income gives to consume and thus be reflected in the livelihood of the household. Some economists prefer income as a measure of living standards because they follow a "rights" approach. According to this approach, income, together with assets, measures the potential claims on the economy of a person or family. Other economists prefer to use consumption data as these show the level of living by measuring what people acquire.

Another consideration when deciding whether to use income (including income from assets) or consumption is the time period over which living standards are to be measured. There is a good deal of empirical evidence that even people in poor agricultural societies and people without the ability to borrow much can smooth their incomes within a particular year and perhaps over a series of years, so that consumption will reflect living standards at least throughout one year and perhaps over a series of years (for a review see for instance Deaton, 1997, Chapter 4).

Most people do not receive income every day, and many do not receive income every season - or at least not an equal amount every season. So while consumption over a week, two weeks, or a month is likely to be a reasonable indicator of living standards over a year or over a few years, income will not be. If analysts are interested in measuring averages, income variation will not matter much if the survey itself is spread over a year, since some people's zero incomes will balance out others' high seasonal incomes. However, analysts are usually interested not only in means (LSMS surveys are rarely the instrument of choice for estimating mean income or consumption) but also in inequality and poverty, which are sensitive to the tails of the distribution, especially the lower tail. Gathering data on the previous month's income will overestimate inequality in annual living standards and, provided the poverty line is below the mode of the distribution, will overstate the fraction of people below the line. Although there are also random irregularities and seasonal patterns in consumption, they are typically smaller than those in income, because consumption is less tied to seasonal and weather-related patterns in agriculture than is income. Even so, consumption measured over a reference period of less than a year is likely to overstate poverty and inequality. In addition, the overstatement may not be constant over time if seasonal patterns change with time, because one year is different from another - or over the long run, because agriculture accounts for a shrinking share of household income as economies become richer (Deaton and Grosh, 2000).

These arguments provide a persuasive case that, given the choice, (perfectly measured) consumption is a more useful and accurate measure of living standards than is (perfectly measured) income. These theoretical advantages of consumption are likely to decrease as the period over which it is feasible to gather data gets longer. If it is feasible to visit households on many occasions throughout the year this will clearly capture any seasonality in the household's income. Moreover, if the survey has a panel element so that income can be averaged over a series of years, it makes little difference whether income or consumption is measured, if one can be measured as accurately and as cheaply as the other (Deaton and Grosh, 2000).

The income of many households - particularly but not exclusively agricultural households - varies seasonally throughout the year. In these circumstances, measuring households' annual income (which is the minimum amount of data needed to adequately determine poverty and distribution) would require many visits to the household or reliance on the ability of household respondents to remember their income from many months earlier. However, if consumption is smoothed over the seasons - and much of the literature already cited suggests that this is done in most households - consumption will vary less by season than income does. It may also be possible to collect useful data on annual consumption without making multiple visits (Deaton and Grosh, 2000).

It is generally thought that respondents are more reluctant to share information about their income and (to an even greater degree) their assets than about their consumption. Thus, they are more likely to lie about their income than about their consumption. In many countries income is taxable, at least in principle, and it may be hard for the survey interviewers to persuade respondents that the information they give will not be passed on to tax authorities.

Income from assets is likely to be particularly hard to capture because the ownership of assets is highly unequal, and the wealthy, who own the most assets, are typically thought to be the least likely to cooperate. Given that most of the survey interviews in developing countries must be conducted in a semi-public place, respondents are often reluctant to state their wealth in the presence of relatives and friends. These problems of measuring assets and asset income are likely more severe for measuring inequality than for measuring poverty, since households below the poverty line typically have few assets (Deaton and Grosh, 2000).

The **Ghana** Living Standards Survey round four (GLSS 4) 1998-1999 collects data on the household's agricultural activities. It provides data on agricultural production, technology, processing, marketing, income and consumption patterns. The GLSS 4 was also designed to obtain information on income for the household specifically from non-farm enterprises. It identifies which household members are responsible for each non-farm enterprise in terms of decision-making and the allocation of income it generates. Non-farm enterprises that are currently operating and those that were operational some time in the past 12 months but currently not operating are considered.

The GLSS 4 1998-1999 obtains information on income transfers, that is all incomes of members of the household other than that from paid employment. Transfers to the household are considered as income where as transfers from the household constitute expenditures, thereby completing the income and expenditure current accounts of the household.²⁰ Furthermore, the GLSS 4 1998-1999 is designed to collect information on loans, assets and savings.

²⁰ Included in these transfers are remittances. Remittances are regular or irregular contributions in terms of money or goods and food made to person(s) living abroad or elsewhere. For example, any money, food or goods sent out or received by the household to/from a household member or relative staying abroad or elsewhere is a remittance.

The **India** Survey of Living Conditions Uttar Pradesh and Bihar, 1997-1998, also aims to capture the flow of remittances and transfers into the household.²¹

According to the **Jamaica** Living Standards Measurement Survey, theoretically, all the elements of a household provide the following equation:

$$\begin{aligned} \text{Household income} = & \text{household consumption expenditure} + \text{non-consumption expenditure} \\ & + \text{savings} - \text{net debt (net repayments of principal and interest on debts} \\ & \text{contracted by the household} - \text{net repayments of principal and interest on} \\ & \text{money lent by the household).} \end{aligned}$$

Jamaica Survey of Living Conditions records the value of all miscellaneous income received by household members during the past twelve months. Income sources include: remittances from relatives or friends that live abroad, rental payments for land or property, social security and other pensions and interest from loans.

The **Morocco** Living Standards Survey, 1990-1991, asked questions to identify home enterprises.

The **Peru** Living Standards Survey, 1994-1995, asks whether the household received non-labour income in the previous 12 months and about the source of other income received. It also inquires as to whether the household took a loan or other source of credit.

The **South Africa** Integrated Household Survey solicits information about income received from absent members of the household or from any other person from the list of people who make contributions to the household. It also talks about any money or any form of assistance that members of the household may have received from sources which do not involve employment of some kind. There are many ways in which the household can receive money without being employed. For example, pension payments, charity, unemployment insurance fund, government disability grants, and other forms like that.

The **Vietnam** Living Standards Survey, 1997-1998, collects data on money and goods that come into the household as remittances or from other sources unrelated to employment such as social security, pension, poverty alleviation funds, interest on savings or investments, insurance payments, gifts, inheritance, lottery winnings, renting out of equipment or buildings and the sale of vehicles or durable goods.

²¹ These do not include payments for work or purchases of goods or services in this section, and do not include transactions, which are clearly loans. Also, transfers between household members are not included. However, payments received from any person not considered to be a household member according to the survey definition are included.

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ANNEX A

UNECE questionnaire concerning income of agriculture households

Please provide notes for your country concerning the issues below:

1. Definition of a household, agriculture household and rural household.
2. Criteria for classification of households into socio-professional groups (“narrow” target definition), e.g. based on the main source of income of the household’s reference person.
3. Mechanism used to introduce short-term stability in numbers of agricultural households, e.g., the use of average incomes over several years.
4. Treatment of forestry and/or fishery households. Are they included in agricultural households?
5. “Broad” definition of an agricultural household, e.g. households that derive some income from independent activity in agriculture. If such a definition is used please indicate thresholds.
6. Treatment of non-personal form of institution in the household sector (religious houses, farming cooperatives and similar institutions).
7. Treatment of holdings operated as corporate institutions but *de facto* run as family businesses.
8. The equivalence scale used to give consumer units. There are differences in the age at which the coefficient for children or elderly persons is replaced by that for additional adults. Please give details on the equivalence scale used to estimate numbers of consumer units.
9. The basis of estimating the value of own-consumption (of agricultural and non-agricultural goods and services), e.g. valued at the basic price of similar goods sold on the market.
10. The basis of calculating the imputed rental value of own dwellings, e.g. the estimated value of rental that a tenant would pay for the same accommodation.
11. Calculation of net disposable income of agriculture households: Indication of items covered.

Please indicate in the table below with the following symbols:

y = yes, explicit data

* = implied data covered elsewhere

(y) and (*) = covered in part

@ = gross of capital consumption

	Please indicate with symbols above
No. households	
No. persons	
No. consumer units	
1 FROM INDEPENDENT ACTIVITY	
1a From independent agricultural activity	
Net Operating Surplus	
Income	
1b From independent non-agricultural activity	
Net Operating Surplus	
Income	
1c Net Operating Surplus from imputed rental value of owner-dwellings	
2 DEPENDENT ACTIVITY of which	
2a Wages and salaries	
2b Employers' actual social contributions	
2c Imputed social contributions	
3 PROPERTY INCOME RECEIVED of which	
3a Interest	
3b Dividends	
3c Withdrawals from quasi-corporations	
3d Property income attributed to insurance policy holders	
3e Rents on land and subsoil assets	
4 NON-LIFE INSURANCE CLAIMS	
4a Claims on capital items	
4b claims on personal accident	
5 SOCIAL BENEFITS received (other than social transfers in kind)	
6 MISCELLANEOUS INWARD CURRENT TRANSFERS	
7 CURRENT RECEIPTS Sum of 1-6	
8 PROPERTY INCOME PAID of which	
8a Interest on loans for	
(i) farming purposes	
(ii) purchase of agr. Land and buildings	
(iii) other business purposes	
(iv) private and other credit	
8b Rents on	
(i) agricultural land and buildings	
(ii) other business land and buildings	
9 NET NON-LIFE INSURANCE PREMIUMS	
10 CURRENT TAXES ON INCOMES AND WEALTH of which	
10a on income	
10b on capital gains	
10c on capital or wealth	

		Please indicate with symbols above
10d	on private use of vehicles etc.	
11	SOCIAL CONTRIBUTIONS of which	
11a	Actual	
	(i) employers' actual social contributions	
	(ii) employees' social contributions	
	(iii) by self-employed and non-employed persons	
11b	Imputed	
12	MISCELLANEOUS OUTGOING CURRENT TRANSFERS of which	
12a	to NPISHs	
12b	between households	
12c	other	
13	NET DISPOSABLE INCOME (7 minus 8-12) OR ANOTHER DEFINED CONCEPT	
14	SOCIAL TRANSFERS IN KIND	
15	NET ADJUSTED DISPOSABLE INCOME	

ANNEX B

Replies to the UNECE questionnaire concerning income of agriculture households

The following EU Countries have replied:

Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia, Sweden and United Kingdom.

Replies have not yet been received from the following EU Countries:

Austria, Cyprus, Greece, Netherlands and Spain.

The following countries that are Member States of the UNECE and/or OECD but not of the EU have replied:

Albania, Andorra, Armenia, Australia, Azerbaijan, Belarus, Bulgaria, Canada, Croatia, Georgia, Japan, Kazakhstan, Kyrgyzstan, Mexico, New Zealand, Norway, Republic of Korea, Republic of Moldova, Romania, Switzerland, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine and United States of America.

Replies have not yet been received from:

Bosnia and Herzegovina, Iceland, Israel, Russian Federation, Serbia and Montenegro, Tajikistan and Uzbekistan.

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An inventory of Income of the Agricultural Households Sector (IAHS) statistics covering EU Member States undertaken by Eurostat as part of its IAHS statistics project. The first was in 1990 (Eurostat working paper F/LG/187) and the second (in two stages) in 1996 (F/LG/320, 324, 350 and 366). The consolidated inventory drawn from these papers and covering all the main elements of the methodology was published as part of the Income of the Agricultural Households Sector 2001 Report (issued in CD form in 2002).

ANNEX C

A Sample of LSMS Surveys

Country	Year	Household count	Questionnaire	Additional Metadata Documentation on the web	Access Policy
Brazil	1996-1997	4,940	Portuguese PDF English PDF	<i>Additional Documentation for the 1996-1997 Brazil Survey of Living Conditions</i> http://www.worldbank.org/lsm/country/brazil/br96docs.html	No prior permission from government is required to use the data.
China (Heibei Liaoning Province)	1995 -1997	780	Household Chinese Household English Village Chinese Village English	Documentation for the China - Heibei and Liaoning Living Standards Survey http://www.worldbank.org/lsm/country/china/chndocs.html	No prior permission from government is required to use the data.
Ghana	1987-1988 1988-1989 1991-1992 1998-1999	3,200 3,200 4,565 5,998	Household Questionnaire Part A PDF (97 KB) Household Questionnaire Part B PDF (117 KB) Community, PDF - (73 KB) Price, PDF - (89 KB)	Documentation for the 1998-1999 Ghana Living Standards Survey http://www.worldbank.org/lsm/country/gh/gh989doc.html	Prior government permission is required, but the track record for a timely, positive response is good.
India (Uttar Pradesh and Bihar)	1997-1998	2,250	Household Questionnaire, PDF (266 KB) Village Questionnaire, PDF (132KB)	<i>Documentation for the 1997-1998 Uttar Pradesh and Bihar Survey of Living Conditions</i> http://www.worldbank.org/lsm/country/india/upbdocs.html	No prior permission from government is required to use the data.
Jamaica	1988-2000 (annual)	2,000-7,300	Questionnaires for all years: Survey of Living Conditions Labour Force Survey	<i>Documentation for the Jamaica Survey of Living Conditions 1988-2001</i> http://www.worldbank.org/html/prdph/lsm/country/jm/jmdocs.html	Prior government permission is required, but the track record for a timely, positive response is good.
Peru	1985 1991 1994	5,120 2,200 3,500	<i>Household questionnaire;</i> Community questionnaire	Basic Information Peru: Living Standards Measurement Survey (PLSS) 1991 http://www.worldbank.org/lsm/country/pe91/docs/pe91_e.pdf	No prior permission from government is required to use the data.
South Africa	1993	9,000	Household questionnaire, Community questionnaire	Documentation for the South Africa Integrated Household Survey http://www.worldbank.org/lsm/country/za94/za94docs.html	No prior permission from government is required to use the data.
Vietnam	1992-1993 1997-1998	4,800 5,994	Household Commune School Price	Documentation for the 1997-1998 Vietnam Living Standards Survey http://www.worldbank.org/lsm/country/vn98/vn98docs.html	Prior government permission is required, but the track record for a timely, positive response is good.
Zambia	1991* 1993* 1996 1998 2002	9,886 (PS I) 10,121 (PS II) 11,752 (LCMS I) 16,710 (LCMS II)	Household	The 1996 Zambia Living Conditions and Monitoring Survey (LCMS) http://www4.worldbank.org/afr/poverty/measuring/Indicators/ZMB_96.PDF	Contact ZAMSIF

Notes: * Priority survey I (1991) and Priority Survey II (1993), which subsequently were replaced by LCMSI-III. During 1985-1999 the following countries implemented full-size LSMS surveys: Algeria, Brazil, Côte d'Ivoire, Ecuador, Ghana, the Kyrgyz Republic, Mauritania, Morocco, Nepal, Pakistan, Panama, Peru (1985-1986, 1991, and 1994), Turkmenistan, and Vietnam.

Scaled-down LSMS Surveys have been carried out, with World Bank support in Albania, Azerbaijan, Bolivia, Bulgaria, Pakistan (1995-1996 and 1996-1997), Peru (1990) and Tanzania (Grosh and Glewwe, 2000b).

ANNEX D

Sample of Developing Countries conducting Agriculture Censuses

Countries	On Web	1980 round	1990 round	2000 Round
Brazil	Yes	1980-1985		1996
China	Yes			1997
Ghana				
India	No	1976-1977 / 1980-1981	<u>1985-1986 /</u> <u>1990-1991</u>	<u>1995-1996 /</u> <u>2000-2001</u>
Jamaica	No	1978-1979		
Peru	Yes		1994	
South Africa	Yes		1993	2002
Vietnam	No		1994	2001
Zambia	Yes		1990	(2000)

Source: <http://www.fao.org/es/ess/census/wcares/default.asp>

