Manual on Surveys of Informal Employment and Informal Sector

Draft Chapter 3:
Measurement Objectives and Data Collection Strategies

1. Introduction

A growing number of national statistical agencies are being requested by their governments and others to provide, as part of their regular statistical programmes, comprehensive data on the size and characteristics of the informal sector and of informal employment, and their evolution over time. The collection of data on the informal sector and on informal employment represents an important step forward towards the overall improvement of labour statistics, economic statistics and national accounts. Data on these topics are necessary as information base for economic and labour market analysis, planning, policy formulation and evaluation; to monitor the working conditions and social and legal protection of informal workers inside and outside the informal sector; and to better understand and quantify the contribution of the informal sector and of informal employment to various aspects of economic and social development, including employment creation, income generation, human capital formation, productivity, and the mobilization of financial resources, as well as to poverty and inequality. For these valid and important reasons, strategies and programmes for the regular collection of statistics on the informal sector and on informal employment should form an integral part of a country's national plan for statistical development.[1]

A crucial step in the formulation of a strategy for the regular production of statistics on the informal sector and on informal employment is the identification of a suitable data collection methodology. Countries have at their disposal a variety of survey tools which are being used for this purpose. These include labour force and other household surveys, enterprise/establishment surveys and censuses, specialized informal sector surveys, and a variety of mixed household and enterprise surveys. Growing experience with the measurement of the informal sector and of informal employment using these various survey approaches has yielded valuable information about their relative strengths, limitations and potential synergies. No one single approach, however, can be recommended as being the most appropriate. Although there are substantive and technical requirements that point to particular methodologies, ultimately, the overall suitability of a data collection approach for a particular country will depend on a cost-benefit analysis that takes into consideration the main measurement objectives and data requirements with respect to the informal sector and informal

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[1] These include the National Strategies for the Development of Statistics (NSDS) promoted by PARIS21, within the framework of the 2004 Marrakech Action Plan for Statistics, to encourage low-income countries to define a medium- and long-term strategy and development plan for the national statistical system. For more see: http://www.oecd.org/paris21/nsds/.

employment identified at national level, the organization of the national statistical system, the existing survey programmes and sampling frames, and the financial, technical and human resources available.

Depending on these considerations countries may formulate a variety of data collection strategies that use a single survey tool or a combination, such as in the case of mixed household and enterprise surveys. In the absence of these, other measurement methods have also been considered, such as methods of indirect macro-economic estimation or the comparative analysis of data from different sources. It should be noted that the various methods are not mutually exclusive and that a combination of methods can be useful for the development of a comprehensive data collection programme on informal sector and informal employment statistics. What is important in defining a national data collection strategy is that the implications, both in terms of data quality and resource requirements, of each approach or combination of approaches be clearly assessed and understood. This includes an assessment of the extent to which the proposed national data collection strategy facilitates the integration of the statistics of informal sector and informal employment with other related economic and social statistics –an important assessment because the informal sector and informal employment should not be measured in isolation.

This chapter discusses the main issues to be considered in the formulation of a suitable data collection strategy for the regular production of statistics on the informal sector and informal employment that are compatible with related social and economic statistics. It begins with a review of the key measurement objectives with respect to informal sector and informal employment and the corresponding data requirements. The main alternative survey data collection tools are introduced next, paying particular attention to their comparative advantages and limitations. This is followed by a section on the use of household master samples in the establishment of an integrated household or mixed household and enterprise survey programme as a cost-effective strategy to improve the consistency and comparability of the statistics collected. The chapter ends with a short discussion on indirect methods of estimation.

2. Measurement objectives and data requirements

A comprehensive programme of statistics on the informal sector and on informal employment should provide a broad range of quantitative information that responds to the demands of the various users of the statistics. In order to define the measurement objectives and data requirements of a data collection programme, it is crucial that the main users of the statistics be consulted. User-producer consultation ensures that the data to be produced is relevant to the needs and priorities identified at the national and international levels. The *Introduction* lists some of the main users groups of statistics of the informal sector and informal employment. User-producer consultation is necessary not only to ensure the relevance of the data, but also to ascertain the frequency with which it is needed, to build support for the programme, to promote its use, and even, to improve its quality over time.

The ICLS resolution and guidelines on statistics of employment in the informal sector and informal employment may provide a starting point to guide the user-producer consultation. They can serve as a framework to define the main measurement objectives and data requirements, as well as to prioritize among competing demands, and, should the need arise, to support the establishment of a national data collection programme.

In the case of informal sector statistics, the 15th ICLS (1993) recommends that a comprehensive national data collection programme should provide both for:[2]

(i)   the current monitoring, if possible once a year, of the evolution of employment in the informal sector, and

(ii)   the in-depth examination, if possible every five years, of informal sector units with respect to their numbers and characteristics, in particular, their organisation and functioning, their production activities and levels of income generation, as well as their constraints and potentials.

Although not specifically stated in the 17th ICLS (2003) guidelines, for informal employment statistics, as an integral part of the statistics on the economically active population, one may suggest that a national data collection programme should provide for:

(i)   the current monitoring, if possible once a year, of the evolution of informal employment inside and outside of the informal sector, including changes in its size and composition, and in the characteristics and employment conditions of informal workers.

Standard data requirements to address the above measurement objectives include, with respect to the informal sector:[3]

(i)   total employment in informal sector units, including information on the number of persons engaged by socio-demographic and other characteristics (sex, age group, level of educational attainment, etc.) and by characteristics of their employment and working conditions (e.g. branch of economic activity, occupation, status in employment, size of the unit, type of work place, hours of work, duration of employment, type of contract, and earnings);

(ii)   the total number of informal sector units, classified by various structural characteristics to provide information on the composition of the informal sector and to identify particular segments;

(iii)   production and incomes generated through informal sector activities, derived where possible, from data on outputs, inputs and related transactions; and

(iv)   other characteristics pertaining to conditions under which informal sector units are created and carry out their activities, including their relationships with other enterprises inside and outside the informal sector and with public authorities.

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[2] ILO, *Current International Recommendations on Labour Statistics*, (Geneva 2002), para. 21, p.35.
[3] Ibid, para 2, p.32.

With respect to informal employment, data requirements include:

    (i)   the total number of persons in informal employment, classified by personal socio-demographic and other characteristics (sex, age group, urban/rural location, educational attainment, type of training received, etc.) and by characteristics and working conditions associated with their main job (e.g. branch of economic activity, occupation, status in employment, institutional sector, main/secondary job status, type of work place, hours of work, duration of employment, and earnings); and

    (ii)   the total number of informal jobs, classified by various job characteristics (e.g. main versus secondary job, branch of economic activity, occupation, status in employment, institutional sector) .

The above lists of data requirements are meant to serve as recommendations for the kinds of statistics to be regularly produced by a national data collection programme on informal sector statistics and informal employment statistics. Depending on national circumstances, countries may need to identify a narrower or broader, and more detailed, set of measurement objectives and data requirements. Indeed, the national data collection strategy may propose to cover certain data collection requirements in the initial phases of the programme implementation and gradually expand the programme's measurement objectives and related data requirements over time.

At minimum, a data collection programme should strive to generate, in the case of the informal sector, statistics on (i) the number of persons engaged in informal sector units by status in employment and kind of economic activity and, if possible (ii) the number of informal sector enterprises by kind of economic activity and by type (i.e. informal own-account enterprises, enterprises of informal employers)[4]. In the case of informal employment minimum requirements may be formulated as including statistics on (i) the total number of persons employed in informal jobs by sex, status in employment, and type of production unit as defined in Chapter 2 (formal sector enterprises, informal sector enterprises, and households) and, if possible (ii) the total number of informal jobs, similarly classified by status in employment, and type of production unit.

3.   Measurement objectives and statistical units

As evidenced in the above discussion, the production of statistics on the informal sector and on informal employment requires the statistical measurement of two concepts that, although related, refer to different observation units. On one hand, the concept of the informal sector refers to production units as observations units. On the other, the concept of informal employment refers to jobs as observation units. In addition, where measurement of the total number of persons employed in the informal sector and/or in informal employment is also among the objectives of a data collection programme, or where information on job characteristics is only collected in respect of employed persons' main jobs, then, the individual becomes also a relevant unit of observation.

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[4] Ibid, para. 34, p. 37.

These differences in the units of observation have important implications for the selection of an appropriate data collection methodology. In general, the most appropriate methodology is that which best targets the desired unit(s) of observation. Indeed, the degree of correspondence between the target observation units, as defined by the measurement objectives, and the sample, observation and reporting units of the selected methodology can greatly impact the overall quality of the data, particularly its coverage and accuracy. For example, the use of an informal sector survey, with ISUs as sample and observation units and owners of ISUs as reporting units, to measure informal employment would miss informal employment outside of the informal sector (due to coverage problems) and, as will be explained later in the chapter, may also result in poor measurement of informal jobs within informal sector enterprises due to reliance on the owners of ISUs as proxy respondents for all jobs excluding their own ones. For this reason, in selecting a methodology, it is important to take into account the various units targeted by the various survey approaches.

In general, surveys involve units of various types. Sampled units are the units selected in the sample; observation units are those about which data are collected while reporting units are those from which data are obtained. In household surveys, the sampled units are dwellings or households (and, in some cases, also individual household members), the observation units are households and individual household members, and the reporting units are one or more individual household members. In enterprise surveys, enterprises (or establishments belonging to enterprises) constitute the sampled and observation units and their owners or managers are the reporting units. Finally, mixed household and enterprise surveys may combine a variety of sample, observation and reporting units. In most cases, during the first phase, the sampled units are dwellings or households while the observation units are households and their members, and the reporting units are the household members. During the second phase, the sampled units are the enterprise owners identified during the first phase of the survey, the observation units are the enterprises and their owners, and the reporting units are the enterprise owners.

Table 3.1 shows, in stylized form, the general correspondence between a range of relevant measurement objectives and the main alternative survey data collection approaches. The relation portrayed in figure 3.1 assumes that each alternative survey method uses an appropriate sample frame, size and design, and that the required questions for identifying informal sector enterprises and/or persons employed in informal jobs, whether in their main or secondary job, have been included in the survey questionnaire. Deviations from these assumptions and their implications for the quality of the data and the choice of methodology are dealt with in the next section.

Table 3.1 Relation between measurement objectives and alternative survey methods

Measurement objective	Suitable survey approaches		
	Household survey	Enterprise survey	Mixed household and enterprise survey
A. Informal sector			
1. Employment in the informal sector			
1.1. Total population employed in the IS	✓	(✓)	✓
1.2. Employment and working conditions of IS workers	✓	(✓)	✓
2. Informal sector units (ISUs)			
2.1. Total number of ISUs		✓	(✓)
2.2. Characteristics of ISUs		✓	✓
2.3. Characteristics of ISU owners	✓	✓	✓
2.4. Characteristics of households of ISU owners	✓		✓
B. Informal employment			
1. Total number of informal jobs and their characteristics	✓		✓
1.1 Total number of informal self-employment jobs	✓	✓	✓
1.2 Total number of informal wage employment jobs	✓		✓
2. Persons employed in informal employment and their characteristics	✓		✓
2.1 Persons in informal self-employment	✓	✓	✓
2.2 Persons in informal wage employment	✓		✓

(✓)The information may be subject to non-sampling errors.

Thus, a data collection programme where the main objective is to measure total employment in the informal sector (A.1) and/or total informal employment (B.1 and B.2) should be based on a household survey approach, with dwellings or households as sample units and individual household members as reporting and observation units.[5] Where the main objective is to measure the number, characteristics and functioning of informal sector units (A.2), the data collection programme should be based on an establishment or enterprise survey approach or a mixed household and enterprise survey approach, or a combination of both, with the informal sector units as main observation units and their owners as reporting units.[6] However, given current limitations with the coverage of enterprise survey approaches, a mixed household and enterprise survey approach, or a combination of the mixed approach with the enterprise survey approach would be more appropriate (see sections 5 and 6 below).

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[5] Ibid, para. 21(2), p. 35.
[6] Ibid.

As noted in Table 3.1, household surveys are not the best source to produce statistics on the number and characteristics of informal sector units (ISU), including the production, income generation and fixed capital associated with such units. This is because household surveys have individual household members as observation and reporting units. Thus, although a household survey can capture information about the total number of informal sector entrepreneurs (and their characteristics), this number does not necessarily coincide with the total number of ISUs due to the potential existence of ISUs owned by two or more business partners. In the case of mixed household and enterprise surveys, this discrepancy can be rectified, to some extent, by collecting information on the number and characteristics of business partners during the second phase of the survey. Moreover, because household survey questionnaires often have to be answered by proxy respondents, only limited information can be obtained on the characteristics of ISUs.

By the same token, enterprise surveys are not well suited to capture information about informal employment and may yield incomplete information about the total number of persons employed in the informal sector and their employment and working conditions. Here again, a main concern is the mismatch between the target observation units (i.e. persons in informal jobs and persons employed in the informal sector, respectively) and the sample, observation and reporting units of enterprise surveys (i.e. enterprises and their owners). A main problem here is that because the sample unit is the enterprise or establishment, persons with informal main or secondary jobs outside of formal or informal sector enterprises (e.g. informal domestic workers) are not be covered by these sources and are, thus, excluded from the measurement. In addition, information gathered about informal sector employees may be prone to non-sampling errors due to the reliance on proxy respondents (i.e. owners of the ISUs). Although owners of ISUs are likely to have complete knowledge about the number of persons employed in their enterprises and their employment and working conditions, it is possible that information on informal jobs may be deliberately concealed or misreported. Given these reasons, enterprise surveys can only yield adequate information about informal employment when the objective is restricted to the measurement of the total number of informal self-employment jobs (B1.1), or the total number of informal self-employed persons (B2.1).

In cases where the measurement objectives call for the production of statistics, both, on employment in the informal sector (A.1) and informal employment (B.1) as well as on the number of informal sector units and their characteristics (A.2), and resource constraints require the production of these statistics from a single source, the most suitable data collection methodology would be one based on a mixed household and enterprise survey approach.

This said, however, there are other issues that can also impact the overall quality of the data, and which must be taken into consideration in the design of a data collection strategy. As mentioned earlier, these issues include: existing sample frames and survey programmes, and the available financial, technical and human resources. In addition, particular characteristics of informal sector units which tend to make data collection difficult (small size, high mobility and turnover, seasonal and other variations in activity, clustering in specific areas, lack of recognizable features for their

identification and location, lack of usable records, and potential reluctance to participate in surveys), must also be taken into consideration.

The next section reviews in more detail the main advantages and limitations of the various survey approaches used in the collection of data on the informal sector and on informal employment, namely: (a) household surveys comprising labour force surveys and household income and expenditure surveys; (b) enterprise surveys including specialized informal sector surveys; and (c) mixed household and enterprise surveys including modular and stand-alone approaches.

4. Household surveys

As noted in the previous section, household surveys (particularly, labour force surveys) and, if designed appropriately, the first phase of mixed household and enterprise surveys are the best data collection tools if the objective is to monitor the evolution of informal sector employment and informal employment in terms of the number and characteristics of the persons involved and the conditions of their employment and work. There are many reasons to incorporate the measurement of, both, informal employment and employment in the informal sector in the contents and design of a labour force survey or a household survey that includes the labour force as a topic. These include the relative ease with which the topics can be added to an existing survey, its cost-effectiveness, conceptual coherence with other labour force statistics, and the analytical possibilities offered by the collected data. At the same time, there are also challenges and limitations that arise when using a household survey to produce statistics on employment in the informal sector and informal employment, and which need to be addressed[7]. These advantages, challenges and limitations are discussed below. The general issues pointed out apply to both, labour force surveys as well as to the first phase of a mixed household and enterprise survey. Issues specific to the latter are discussed in section 6 of this chapter.

4.1   Labour force surveys

A central methodological advantage of using LFS to measure informal sector employment and informal employment is that they can be designed to comprehensively cover all types of jobs, be they permanent, temporary or casual in nature; principal or secondary; home-based, street-based, with or without fixed business premises; paid or unpaid; etc. In general, all that is required is to add a few questions to distinguish, among the employed, those who operate or hold jobs in informal sector enterprises and those whose jobs would qualify as informal regardless of the type of production unit in which they are undertaken (see chapter 4 for more details). To arrive at a complete measurement, the additional questions need to be asked to all persons employed during the survey reference period, irrespective of their status in employment, and in respect of their main and secondary jobs.

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[7] Ibid, para. 22, p. 35.

As with the measurement of employment in general, correct identification of persons as 'employed' in the first place is crucial for the proper measurement of informal sector employment and informal employment. Thus, it is often necessary to introduce, at the beginning of the LFS interview, special probes for activities or jobs that may otherwise go unreported as employment, such as unpaid work performed by contributing family workers in small family enterprises, activities carried out by women on their own account at or from home, casual or atypical work, undeclared activities, informal secondary jobs held by public or private employees, and activities geared towards the production of goods for own final use by households (if considered as employment at the national level).

Incorporating both informal sector employment and informal employment in a LFS takes advantage of the existing survey infrastructure and geographic coverage. In most countries, labour force surveys tend to be regarded as a core statistical activity to be conducted at regular intervals. In addition, these surveys tend to be national in coverage, have regular budgets that ensure their continuity and regular dedicated staff with expertise in labour related topics. As a result, it is relatively easy to generate quality statistics with national coverage in a regular and timely fashion. Furthermore, the coverage of agricultural activities in the LFS removes a traditional obstacle to the measurement of informal sector employment in this branch of economy activity. As discussed in chapter 4, despite the measurement challenges, there are strong reasons to extend the concept of informal sector employment to rural areas, particularly in developing countries[8].

The economies of scale involved in incorporating questions on employment in the informal sector and informal employment in labour force surveys make it one of the most cost-effective alternatives that countries have in establishing a regular programme for the production of statistics to address these particular measurement objectives. This is not the case with enterprise surveys, and especially with specialized informal sector surveys, which tend to yield data only for urban areas, be conducted less frequently, and be dependent on special budgetary provisions or financial opportunities that make their regularity uncertain. Moreover, should a country decide to expand its measurement objectives to produce statistics on informal sector units and their characteristics, labour force surveys, can be readily used as a first phased of a mixed household and enterprise survey.

An additional advantage of a LFS is that it ensures the collection of statistics on employment in the informal sector and informal employment as an integral part of labour force statistics. As evidenced in the framework presented in chapter 2, the concepts of informal employment and employment in the informal sector are embedded within the labour force framework and are, thus, essential dimensions in the characterisation of the economically active population. Incorporation of these items in LFS enables the classification of the employed population by status in employment, the informal versus formal nature of their jobs, and the type of production units (formal sector enterprises, informal sector enterprises, or households) in which the activities are undertaken.

The joint collection of standard labour force statistics and statistics on employment in the informal sector and informal employment through one single source opens important opportunities for analysis

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[8] Ibid, para. 15, p. 34.

and to inform policy-making. It makes it possible, for example, to estimate the share of employment that is unprotected, low-income, etc. and how it is distributed between formal sector enterprises, informal sector enterprises, and households. It also allows the regular production of indicators on informality that can be used to complement the unemployment rate. This is particularly important in countries where, due to a lack of public unemployment insurance schemes, labour markets tend to be adjusted in terms of qualitative working conditions (INEGI 2002). In such settings, indicators such as the proportion of the population in informal or unprotected jobs are necessary as a complement to the unemployment rate, in order to provide a sound description of the labour market. Similarly, it facilitates the study of the linkages between informality and the segmentation of the labour market, which is a key issue underlying the policy debate about the effects of labour reforms on reducing informal employment. Given that the unit of observation is not only the individual but also his/her household, it is also possible to examine the characteristics of households of informal sector entrepreneurs and the division of risks among household members.

An important feature of some informal activities, especially those related to the informal sector, is that they tend to operate in an opportune manner and are subject to seasonal variations. The best way to capture seasonal and other variations in activities is to collect data throughout the year. Although not all LFS are conducted on a continuous basis, many already are and more are expected to be conducted in this way in the future. This provides LFS with another important advantage vis-à-vis enterprise surveys which tend to be conducted during a specific period of the year. Where LFS are conducted on a quarterly or monthly basis, it is possible to monitor seasonal variation in informal activities as well as to produce seasonally adjusted series (provided that sufficiently long time series are available). Indeed, the 15th ICLS resolution[9] recommends that in order to monitor trends, questions on employment in the informal sector should be included at least once a year in existing infra-annual LFS or similar household surveys.[10] Production of seasonally adjusted series opens up interesting analytical possibilities to shed light on such issues as the relationship between informality and the overall performance of the economy; its responsiveness to economic growth or to fluctuations in the GDP; and, more generally, its linkages to economic cycles. In other words these data can provide testable information on the long discussed issues relating to whether informal employment is rooted in the structure of the economy or is fuelled by its own inertia. Moreover, because labour force or similar household surveys are often conducted at a higher frequency than specialized informal sector surveys, the data obtained from the household survey on the evolution of labour inputs in the informal sector can also be used to extrapolate data from the informal sector survey on other characteristics (e.g. value added) of the informal sector.

Of course, there are important challenges and limitations that need to be kept in mind when using a LFS for the measurement of informal sector employment and informal employment. As pointed out in section 3, an important limitation is that, due to the lack of a one-to-one correspondence between informal sector enterprises and their owners, LFS and other household surveys are not an appropriate

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[9] Ibid, para 22(5), p. 35

[10] In respect of surveys conducted at less frequent intervals (e.g. once every year or every five years) the 15th ICLS recommended to include questions on employment in the informal sector in every survey round.

source of information for estimating the total number of informal sector enterprises. Other considerations relate to the identification of informal sector units through questions asked of employees, contributing family workers and proxy respondents; the short reference period used in measuring current employment; and the adequacy of the LFS sample size and design for the measurement of informal sector employment and informal employment.

A common concern with the use of labour force surveys to identify persons employed in informal sector enterprises is that employees, contributing family workers and proxy respondents may find it difficult to provide accurate information on some of the criteria used to define the informal sector, especially the legal organisation, bookkeeping practices and registration of the enterprises for which they work. Possible ways to address this concern are reviewed in detail in chapter 4. One alternative is to obtain an estimate of the total number of persons employed in the informal sector using only the information on the characteristics of their enterprise (including information on the persons employed in them) provided by respondents identified as employers or own-account workers. Another possibility is to base the estimate on all respondents irrespective of their status in employment, but to formulate the questions for employees in ways that are more directly linked to their situation, thereby reducing the chances of item non-response due to a lack of knowledge. The extent to which the share of self- responses in LFS can be increased and the quality of the data collected enhanced will be limited by the available time and resources to conduct the survey. It is, however, realistic to expect that a certain proportion of proxy responses will always remain.

At the same time, it should be noted that the alternative of measuring total informal sector employment through questions asked to owners of ISU in household surveys, enterprise surveys or second phases of mixed surveys carries also a different kind of limitation. On one hand, it can be safely assumed that owners of ISU have full information on the characteristics of the economic unit and the persons employed in it. On the other hand, given the informal nature of the unit, it is possible that the respondent may deliberately distort the information provided, thereby introducing a systematic bias in the data. For this reason, it is recommended that this information be collected from all employed persons, irrespective of their status in employment, through a household survey. Indeed, a household survey is the only source which makes it possible to obtain information directly (i.e. without passing through the employer) from employees and contributing family workers. This is an important consideration for the collection of data on working conditions in the informal sector and informal employment. Where a mixed household and enterprise survey approach is used, it is also possible to cross-check the information obtained in the first phase with that collected during the second phase of the survey (see below).

It had been mentioned earlier that LFS, when implemented on a quarterly, monthly or continuous basis, have an important advantage over enterprise surveys in capturing seasonal variations in informal sector activities. This is not the case, of course, where the LFS is implemented only during one particular period in the year, or where questions for the identification of persons employed in the informal sector or in informal jobs are included only during one particular period of the year. In such situations, the information collected on employment in the informal sector and informal employment

using a short reference period is unlikely to be representative of the whole year. To improve the representativeness of such data, it may be necessary to evaluate the possibilities of adapting the sample design and field operations of the LFS to cover the whole year or to consider the inclusion of a longer reference period for the collection of data on informal employment and employment in informal sector activities.

A final major consideration when using a LFS concerns the sample design. Usually the sample size of a LFS is determined by the need to maintain a good level of statistical precision around basic indicators such as the unemployment rate. This, however, does not necessarily guarantee that the sample size will be sufficiently large to allow for detailed disaggregation of the data on informal employment inside and outside of the informal sector, by branch of economic activity and other characteristics. To ensure that the LFS can indeed yield detailed information on the size and characteristics of the population employed in informal sector enterprises and in informal jobs, care should be taken in the sample design to include an adequate number of sample areas where informal workers live, and to select an adequate number of households per sample area.

4.2   Household income and expenditure surveys

While LFS can be used to obtain an estimate of persons employed in informal sector enterprises and in informal jobs, household income and expenditure surveys represent a potential source of information on the demand of households for goods and services produced in the informal sector (for further details see the discussion on phase 3 of the 1-2-3 surveys in section 3.1.5 of Chapter 6). For this purpose, information may be collected, in respect of each expenditure group, on the distribution of expenditures by point of purchase, distinguishing, for example, supermarkets, formal shops or workshops, public sector, other formal points of purchase, self-produced, ambulant vendors or street stalls, homes of vendors, small/informal shops or workshops, markets, and other informal points of purchase. It should be noted, however, that household income and expenditure surveys cannot provide information on the total demand for informal sector products. They can only provide data on household final consumption expenditure for informal sector products, which is only a part (albeit the most important one) of the total demand for such products.

5. Enterprise or establishment surveys

When the objective is to monitor the number and characteristics of informal sector units (ISUs) the most suitable methodologies are those which have the enterprise or establishment as unit of observation and the enterprise owners as reporting units. This is the case of enterprise or establishment surveys of ISUs, and the second phase of mixed household and enterprise surveys. Because of their reliance on self-respondents, that is, on the owners of the ISUs, to report the information, these types of surveys are particularly well suited to generate reliable information on such aspects as the number and characteristics of the businesses involved; their production activities, income generation, and fixed capital; the conditions and constraints under which they operate; their

organisation and relationships with the formal sector and the public authorities; characteristics of the ISU owners; etc.

This section focuses particularly on enterprise or establishment surveys of ISUs[11], to which paragraph 23-24 of the 15th ICLS resolution refer[12]. The different types of advantages and limitations of mixed household and enterprise surveys are discussed in the next section. A crucial aspect underlying the quality of the statistics produced by informal sector enterprise surveys is the frame used to select the survey sample, particularly how complete and up-to-date it is. Indeed, this is a major consideration when assessing the possibilities of using this approach to generate statistics on the informal sector. Standard enterprise or establishment surveys usually rely on existing business registers as basis for the sampling frame. However, because ISUs are rarely included in business registers[13], these cannot be used as sampling frame in the design of an informal sector survey. Instead, alternative sources are needed in order to obtain appropriate sampling frames for informal sector surveys. Details about the various approaches and examples of countries, that have used them, are presented in Chapter 5. Some general comments about the implications of these various alternatives for data quality and for the generation of estimates of the informal sector are introduced below.

In general, the most common alternative to construct a sample frame for an informal sector enterprise survey is a recent general establishment or economic census which covers all establishments (regardless of size or other characteristics) in all relevant branches of economic activity and includes the basic items required to identify ISUs. Conduct of a special census of informal sector establishments should be avoided because of its human and financial resource implications, and because the informal sector definition (see chapter 2) appears too complex for being used in the field to delineate the scope of an establishment census.

The information collected in the economic census makes it possible to construct two types of sample frames, a list frame and an area frame. When the informal sector survey is to be conducted immediately after the economic census, the list of ISUs identified in the economic census can be used to draw the informal sector survey sample. When the survey is to be conducted at a later date, the use of an area frame constructed from the economic census is more appropriate. In this case, census enumeration areas are selected as primary sampling units or sample areas, taking into account the density of various types of informal sector units in the areas. This approach assumes that the pattern of geographic concentration of informal sector establishments of different types remains relatively stable between the time of the economic census and the informal sector survey, although the individual informal sector establishments may change. Of course, the validity of this assumption tends to decrease with the time elapsed between the two inquiries. However, because of the high mobility and turnover of the individual ISUs, it will always be necessary to update the lists of establishments in the sample areas prior to the selection of the sample establishments (ultimate sampling units).

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[11] In the remainder of this chapter the term 'informal sector enterprise survey' will be used; it should be interpreted to mean enterprise or establishment survey of informal sector units (depending on the unit used as the subject of the survey).
[12] Ibid, p.35.
[13] Indeed, non-registration of the enterprise is usually one of the criteria used to define informal sector units.

Provided that the economic census and the informal sector enterprise survey are conducted within a reasonably short time frame, the approach can yield adequate statistics about the more visible parts of the informal sector (identifiable establishment). This information is useful, for example, for specific groups of data users who are interested only in information about informal sector activities undertaken in identifiable establishments, because they consider such establishments to have a higher potential for growth than other informal sector units and, hence, to be the main target for programmes aimed at the development of small and micro enterprises. However, the approach cannot yield statistics about the informal sector as a whole. This is because it tends to miss ISUs without fixed location (e.g. transport services, ambulant trading, etc.), as well as ISUs operating in business premises that are not recognizable as such from the outside during an establishment listing operation (for example, home-based activities such as food processing, tailoring, craft production, etc.). More so, because economic or establishment censuses are large-scale and costly operations, many countries can only conduct them in (major) urban areas, thereby further limiting the coverage of the information collected. Indeed, this is one of the reasons, albeit not a substantive one, why measurement of the informal sector has been traditionally restricted to urban areas.

Some of the coverage problems noted above can be reduced when the economic census is conducted concurrently with the house-listing operation for a population and housing census[14]. Pairing of the economic census with the house-listing operation of a population census can help improve the coverage of ISUs without fixed or recognizable premises provided that special probes for their identification are included in the house-listing schedule. In a number of countries (e.g. India), this approach has proven to be an efficient and cost-effective option to generate statistics on the informal sector because of the sharing of resources between two large-scale statistical operations. A drawback, however, is that because both activities are very costly and resource-intensive, they are usually conducted only every 10 years and, in some cases, every 5 years. Information gathered at such long intervals is useful for benchmarking purposes and to observe long-term trends. However, its adequacy for short-term planning; to monitor business cycles among informal sector enterprises; or to produce annually estimates for national accounts, is more limited.

Because of the need to conduct these various inquiries (economic census, house-listing for population census, and informal sector survey) within a short time period, the enterprise or establishment survey approach to measurement of the informal sector is not only very demanding in terms of financial and human resources, but also in terms of field logistics and operations. Countries evaluating the possibility of establishing a regular programme of statistics of the informal sector based on this approach need to plan early on how the approach would fit within the overall data collection schedule and how it would respond to the broader data needs defined in the national plan for statistical development.

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[14] It should be noted that such effort to improve the coverage of home-based and mobile activities can already be considered as falling within the category of mixed household and enterprise surveys as discussed in section 6.

The 15th ICLS resolution mentions that it is generally preferable to cover all relevant branches of economic activity in a single informal sector enterprise surveys.[15] The conduct of branch-specific informal sector surveys is not recommended as a main data collection strategy unless the measurement objectives have also been limited to particular branches of economic activity. The resolution recognizes, however, that where the scale and costs of a single survey are deemed too large or unmanageable, an alternative used by countries is to conduct a series of branch-specific surveys. In branch-specific surveys coverage errors are likely to occur, given the complexities associated with identifying, during the listing operation, all and only those informal sector units that fall within the scope of the survey,. Not only will special measures be needed to identify ISUs without fixed or recognizable premises, but also rules would need to be established for ISUs engaged in two or more activities, particularly if some of them fall outside the scope of the survey. This is an important aspect as multiple activities are widespread among ISUs, and it is not always easy in such cases to determine the main activity. Provided that appropriate measures have been implemented to address such issues, the resulting data can be used to produce basic branch-specific estimates. More in depth analysis of ISUs would be rather restricted because it would not be possible to examine the full range of informal sector activities undertaken by the same individuals, households or enterprises.

Where the observation unit in economic censuses and subsequent informal sector sample surveys is the establishment rather than the enterprise as a whole, it is impossible - or at least difficult - to reconstitute informal sector enterprises engaged in two or more different activities because each establishment tends to be surveyed separately. It would thus not be possible to examine linkages between several informal sector activities undertaken by the same individuals or households and to consolidate the data at the enterprise or household levels.

If the intention is to cover all types of informal sector activities through a series of branch-specific surveys (covering manufacturing, trade, transport and other services, etc.), the data collection programme will have to be designed to ensure a comprehensive coverage of ISUs without omissions or duplications between surveys. There may be double-counting of activities in cases where, for example, some members of a household produce goods in a small workshop or at home, and other members of the same household sell these goods in a fixed market or street stall. Another important issue here is the timing of the surveys, which would impact the reference periods to which the data collected for each branch of economic activity refer. When series of branch-specific surveys are spread over longer periods of time, during which one survey is conducted after the other, time-consistent informal sector statistics across all branches of economic activity cannot be produced.

In addition to the coverage issues noted above, another concern with the enterprise survey approach is the extent of integration between the economic census and the informal sector survey, particularly with regard to the use of common concepts, definitions and classifications. Lack of consistency in this regard can severely limit the potential uses of the data. For the production of consistent statistics on

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While a mixed survey usually starts from the household survey side, in this case it would start from the enterprise survey side.

[15] Ibid, para. 24(4), p. 35.

formal and informal sector enterprises is part of the measurement objectives, harmonization and joint planning of the economic census and informal sector survey is necessary.

An approach that seeks to promote greater integration among the various sources and at the same time produce complete and consistent data for formal and informal sector units is the Fully Integrated Rational Survey Technique (FIRST).[16] This approach applies a two-pronged methodology for the identification and selection, on one hand, of large-scale and, on the other, of medium- and small-scale enterprises. A list frame (business register/directory) is used to identify and select the former, while an area frame drawn from an economic or population census is used to identify and select the latter. Informal sector enterprises are considered to be included among the medium and small-scale enterprises. Thus, in this approach, too, informal sector enterprises are selected on the basis of area sampling, which by-passes the problems of non-registration of ISUs. To ensure that activities without fixed premises are also covered in the survey, some additional questions need to be asked of households in the sample areas at the listing stage, to establish whether any of their members is engaged in such activities. In this approach, there is a potential for ending up with duplicates in the list and area frames. Thus, a critical step in the FIRST methodology is the identification and elimination from the area frame of all duplicates prior to the selection of the survey sample (see Chapter 5 for more details).

6.   Mixed household and enterprise surveys[17]

If the measurement objective is to collect comprehensive information on informal sector as a whole and on various segments of which it is composed, then a mixed household and enterprise survey approach is the most suitable one. All informal sector entrepreneurs (except homeless persons) and their activities, regardless of the enterprise size, the kind of activity and the type of workplace used, and irrespective of whether the activities are performed as main or secondary jobs, can be covered in this approach. In particular, activities undertaken inside the entrepreneur's home or without fixed location can also be covered.

Mixed household and enterprise surveys are based on area sampling and usually conducted in two phases[18]. In the first phase, a sampling frame for informal sector enterprises or, more precisely, their owners is obtained through a household listing or survey in the selected sample areas (primary sampling units , during which all enterprises falling within the scope of the survey and their owners are identified (household survey component). In this phase, data often have to be obtained from household members other than the enterprise owners themselves, i.e., proxy respondents. Thus, it is not always possible to obtain good quality data relating to the informal sector criteria. For this reason, it may be preferable at this stage of the survey to use a broader concept (such as small enterprises, or household unincorporated enterprises with at least some market production), which includes the informal sector. The focus is then on ensuring good coverage of the informal sector by attempting to

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[16] UN, *Strategies for Measuring Industrial Structure and Growth*. Series F, No. 65 (1994, New York). Available at: http://unstats.un.org/unsd/publication/SeriesF/SeriesF_65E.pdf

[17] The discussion in this section is based on paragraphs 25-32 of the 15th ICLS resolution (ibid, p.36).

identify the owners of all enterprises that *may* belong to the informal sector. Use of a broader concept also enhances flexibility for analysis of the data, as it becomes possible in this way to specify different informal sector definitions according to the needs of different statistics users. In the second phase, all or a sample of the enterprise owners are interviewed to obtain detailed information on their own characteristics, those of their enterprises, and those of the persons working with them, if any (enterprise survey component). The informal sector enterprises can be more precisely identified during this stage (post-sampling identification).

A characteristic feature of many informal sector enterprises is their high mobility and turnover. In order to reduce non-contact rates and distortions of survey data resulting from sample units that have moved location or changed or stopped their activity, the time interval between the two survey phases of a mixed household and enterprise survey should be kept as short as possible. Every possible effort should be made to trace sample units to their new location. Replacement by other units should be avoided, as it is likely to bias the survey results. In order to compensate for non-contacts, it is better to select a larger sample at the outset. Another means of increasing contact rates, as well as the quality of the data obtained, is to try to interview informal sector entrepreneurs, who conduct their business in fixed premises outside their home, at their actual place of work rather than at their residence.

Mixed household and enterprise surveys make it possible to analyse jointly, at the enterprise or household level, the various kinds of informal sector activities undertaken by the same individuals or households. Moreover, data on the characteristics of the informal sector activities and enterprise owners can be related to the characteristics of the owners' households obtainable from the same survey. This is important for assessing the contribution of other household members to the household income and for analysis of the impact of the household situation on the activities of women and children working as informal sector entrepreneurs.

Informal sector mixed household and enterprise surveys can be conceived either as modules attached to existing labour force or other household surveys, or as stand-alone (i.e. independent) surveys. The basic difference between the two is that with the modular approach the informal sector survey is designed as a subsample of a household sample selected for a different purpose (e.g. labour force measurement), while in the stand-alone approach a special sample of informal sector entrepreneurs is selected from a list of **all** households (and, possibly, establishments) in the sample areas. Somewhere in-between the modular and the stand-alone approaches, one may situate a third option: the integrated approach, in which an informal sector survey is undertaken as part of a survey system designed to meet several objectives in parallel.

6.1   Modular approach: Informal sector surveys attached to household surveys

Attachment of an informal sector module to an existing labour force survey (or other household survey that includes questions on employment) implies that the informal sector survey sample is obtained as a sub-sample of the base (or filter) survey. The informal sector survey may be conducted

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[18] In the case of the 1-2-3 surveys, a third phase is added as described in section 3.1. of Chapter 6.

simultaneously with the base survey or subsequently. The subsequent conduct is preferred in most cases as it: facilitates the management and co-ordination of the two surveys; ensures that the survey operations for the base survey can proceed smoothly; is unlikely to have a negative impact on the quality of the base survey data; provides a better control over the identification and selection of the sub-sample for the informal sector survey; and enables the informal sector survey interviews to be conducted by field staff specialized on the subject matter. More detail is provided in section 2.2 of Chapter 6.

The modular approach is less complex and less expensive than the conduct of an independent informal sector survey because information collected during the base survey provides the basis for the identification and selection of the sub-sample of households or persons for the informal sector survey, and no special household listing or interviewing is required. From the methodological point of view, the strengths of the modular approach lie in its possibilities: to monitor trends in the informal sector over time, if the base survey is conducted regularly and an informal sector module is attached to it at sufficiently frequent intervals; to achieve a complete coverage and accurate identification of (potential) informal sector entrepreneurs in the sample households during the base survey interviews, particularly if a well-designed labour force survey is used for this purpose; to use the sampling weights of the base survey for the households with informal sector enterprises and thereby facilitate the estimation of the survey results; and to relate data on the informal sector activities to data obtained from the base survey.

However, the modular approach can only be used in situations where a suitable base survey exists, and where it is feasible in terms of survey operations and response burden to add data collection for the informal sector to data collection for the base topic. As already indicated in section 4 above regarding household surveys, the representativeness of the data over time may be limited by the frequency and reference period of the base survey. Moreover, unless the base survey collects information on the relevant characteristics of the respondents' main *and* secondary jobs, the number of informal sector entrepreneurs risks to be underestimated. Other possible limitations relate to issues of sample design and selection. The base survey sample is not likely to have been efficiently designed from the perspective of informal sector measurement, neither at the stage of selection of sample areas nor at the stage of selection of sample households. There is no control over the size of the informal sector sample or over its distribution by type of activity. The resulting number of informal sector entrepreneurs included in the sample may, therefore, be quite small, and insufficient to yield reliable separate estimates for each type of informal sector activity for which such estimates would be desirable (*e.g.* estimates by branch of economic activity). In particular, this will be a shortcoming of the modular approach in countries, where the informal sector is less widespread than in others (see section 3.4 of Chapter 6).

There are, however, ways to increase the size of the informal sector sample. If resources permit, the base survey sample can be increased by adding households to it, either from the same or from additional sample areas. If the base survey is of a continuing nature, subsamples of informal sector units can be cumulated over several survey rounds. Alternatively, if the information required for

identification of the units eligible for the informal sector survey is obtained during the listing operation for the base survey, the informal sector survey sample can be selected on the basis of all households in the sample areas, rather than only those selected for the base survey sample. This corresponds to the design of a stand-alone informal sector survey as described in the next section, as at the stage of household selection the two surveys will have different samples (although they will share a common sample of areas).

6.2   Stand-alone approach: Informal sector surveys designed as independent surveys

In a number of cases, a stand-alone (or independent) informal sector survey is the technically better arrangement because its sample can be specifically designed and selected to meet the measurement requirements of producing estimates of specified reliability in selected strata. For example, reliable data may be required for each branch of economic activity, or to support analysis of the differences between various informal sector segments regarding their income-generating potential, constraints and other characteristics.

Independent informal sector surveys using the mixed household and enterprise survey approach are based on a multi-stage design involving the following steps:

      i.   selection of areas (e,g. census enumeration areas) as primary sampling units;

      ii. listing or interviewing of all households in the sample areas;

      iii. selection of sample households with owners of informal sector enterprises (or small enterprises, household unincorporated enterprises with at least some market production, etc.) as ultimate sampling units; and

      iv. main interviewing of the sample households and enterprise owners.

As explained further in Chapter 7, the sample design must take into consideration that some types of activities (*e.g.* transport, repair and other services) are likely to be less well represented than others (*e.g.* trade, sale of cooked food), and that some activities (*e.g.* certain types of manufacturing or trade) tend to be concentrated in specific areas. To ensure adequate representation of all such activities in the sample and to reduce clustering effects, it is important to include a sufficient number of enumeration areas in the first stage sample.

For first stage allocation and selection, an area sampling frame is used which consists of enumeration areas of appropriate size, stratified according to the overall density of informal sector activity in these areas or, if possible, the densities of informal sector activities of different types. Information useful for construction of such a frame includes: data obtained from the latest population census on the density of employers and own-account workers in the enumeration areas classified by broad activity groups and, if available, by type of workplace and number of employees; data on the concentration of small establishments by broad activity groups as obtained from the latest establishment or economic census; data for stratification of enumeration areas by income level or other socio-economic criteria; data obtained during listing or data collection in previous informal sector or other surveys; or

information based on local expert knowledge about the spatial distribution of informal sector activities in the regions or towns to be covered by the survey. Such data normally provide a reasonably good approximation of the density of informal sector entrepreneurs living in the enumeration areas at the time of the survey. Enumeration areas with a high density of informal sector entrepreneurs in the relevant activity groups are selected at a higher rate in order to obtain more coverage by the sample, increased sampling efficiency and reduced survey costs.

The cost aspect is particularly important for the first survey phase, which is an expensive operation unless it can be combined with a household listing for another survey. The task is to list all the households in the sample areas, to identify all the potential informal sector entrepreneurs and their activities, and to obtain any additional data to be used for their subsequent stratification (if necessary) and selection. The quality of listing is a key factor for the overall quality of the estimates obtained from the survey.

A household listing may fall short of ensuring a complete coverage of informal sector activities conducted in identifiable establishments outside the homes of the enterprise owners. Thus, it is useful to undertake a dual, mutually exclusive listing of *(i)* households and household-based (including mobile) entrepreneurs and *(ii)* establishments in the sample areas. This was done, for example, for the Urban Small Unincorporated Enterprises Survey conducted in Turkey in 2000, and for the national Survey on Non-agricultural Enterprises in the Informal Sector undertaken in India in 1999-2000. In the Turkish case, the survey shared the sample areas (blocks) of the monthly Household Labour Force Survey in order to reduce the cost of the first survey phase and improve data quality.

It may even be useful to use different samples of areas, which have been selected from different sampling frames (population census vs. establishment/economic census) for *(i)* households and household-based entrepreneurs and *(ii)* establishments. This is because household-based informal sector entrepreneurs and informal sector establishments tend to be clustered in different areas. An example of a survey based on such a dual-frame approach is the Informal Sector Survey conducted in the West Bank and Gaza Strip in 2003 by the Palestinian Central Bureau of Statistics. Another example is the informal sector survey of Colombia, where informal sector activities conducted at the entrepreneur's home or without fixed location are surveyed through a modular mixed household and enterprise survey approach, and a sample of informal sector establishments is selected using an establishment sampling frame. To avoid duplications, an important design requirement for this type of survey is the effective exclusion from the household frame of informal sector entrepreneurs who undertake their activities in establishments.

In a classical stand-alone mixed household and enterprise survey all households in the sample areas are listed using a fairly simple form. The listing form includes a question such as "*Does any member of the household operate, as his/her main or a secondary activity any business for income-raising purposes at any time of the year?*", which is addressed either to the household reference person or, as recommended by the 15th ICLS, to each member of the household above a specified age. Information on the kind of economic activity (industry), number of employees and/or the legal organisation of the

business may also be collected. Such a household listing may however not be adequate to ensure a complete coverage and accurate identification of the owners of informal sector enterprises (or small enterprises, household unincorporated enterprises with at least some market production, etc.), or even only those who are household-based. It may thus be useful to extend the first phase from a household listing to a household survey operation, during which detailed information is collected on the economic activities undertaken by household members. This is done, for example, in the Urban Informal Economy Survey, that is conducted about every five years in Brazil as a survey independent from the country's other household surveys. In such a case, the scale of the first survey phase is particularly large as detailed interviews have to be carried out in respect of each household member of working age in all households living in the sample areas.

As explained in more detail in Chapter 7, ideally the sample of an independent mixed survey should be stratified at the higher stages of selection such that at the final stage of selection households (and, possibly, establishments) can be selected at uniform rates. Sometimes, however, it will be necessary to group the listed households (and, possibly, establishments) in strata by industry, sex of the entrepreneur, type of workplace, type of enteprise (own-account vs, employer), etc. for last-stage allocation and selection. The aim is to make the allocation of the final sample to the various strata as homogeneous as possible and to ensure that an adequate number of ultimate sampling units from each stratum is selected.

The design of a stand-alone informal sector survey entails fairly complex survey operations and sample design and estimation procedures. It requires a team of qualified survey staff, sound training of interviewers, constant supervision and control of all survey operations, and care in keeping records of the listing operation, sample selection and sample outcome for each sample area. The gain in the quality of the estimates obtained from an independent mixed household and enterprise survey must therefore be balanced against the increase in costs and complexity of the survey.

6.3 Integrated approach: Informal sector surveys as part of a survey system designed to meet several objectives

Integrated surveys can be seen as special types of modular surveys. Integrated surveys are designed to meet several measurement objectives at the same time, i.e., the collection of data about the informal sector and other topics, e.g. labour force, household income and expenditure. Such surveys are especially useful for countries that do not have a regular household survey to which an informal sector module can be attached, and that need to collect data on a range of topics without having the resources necessary for separate surveys. Integrated surveys aim at incorporating the sample design requirements for informal sector measurement into a combined survey design as an additional objective, to the extent that all the requirements can be reconciled. For this purpose, efforts are made in the sample allocation and selection to increase the number of households with informal sector enterprises included in the sample and to enhance, to the extent possible, the representation of the various types of informal sector activities in the sample. The 1-2-3 surveys described in section 3.1 of Chapter 6 can be considered an example of integrated surveys using the mixed household and

enterprise survey approach. In these surveys, the first phase is a labour force survey, the second phase an informal sector survey based on a sub-sample of the labour force survey, and the third phase a household income and expenditure survey conducted in returning to the original labour force survey sample.

More detail on mixed household and enterprise surveys of the informal sector is provided in Chapters 6 and 7.

7. Use of household master samples

A household survey programme allows for integration of survey design and operations in several ways. The same concepts and definitions can be used for variables occurring in several surveys. Sharing of survey personnel and facilities among the surveys will secure effective use of staff and facilities. The integration may also include the use of common sampling frames and samples for various surveys in the survey programme. The development of a master sampling frame (MSF) and a master sample (MS) for the surveys is often an important part of an integrated household or mixed household and enterprise survey programme.

The use of a common master sampling frame of area units for the first stage of sampling will improve the cost-efficiency of the surveys in a survey programme. The cost of developing a good sampling frame is usually high; the establishment of a continuous survey programme makes it possible for a national statistical office to spread the costs of construction of a sampling frame over several surveys such as labour force, household income and expenditure, mixed household and enterprise surveys on the informal sector, etc.

The cost-sharing can be taken a step further if the surveys select their samples as sub-samples from a common master sample (MS) selected from the MSF. The use of a master sample for all or most of the surveys will reduce the costs of sample selection and preparation of sampling frames in the second and subsequent stages of selection for each survey. These cost advantages with the MSF and the MS also apply to unanticipated ad hoc surveys undertaken during the survey programme period and, indeed, also in the case where no formal survey programme exists at the national statistical office.

The main purpose of a master sample is to provide for the household surveys in the continuous survey programme (and any ad hoc survey that fits into the master sample design). The sample will thus be primarily designed to serve a basic set of household surveys like labour force, household income and expenditure, etc. It will generally not be efficient for sampling of other types of units. In some situations, however, it may be possible to use the master sample of households for a survey like an informal sector mixed household and enterprise survey, to study the characteristics of economic units such as household enterprises and own-account businesses.

In most developing countries, large proportions of the production units are closely associated with private households. These units are typically many in number, small in size and widely spread

throughout the population. A master sample of households can be used for surveys of these types of units in the first phase. Apart from cost savings, use of a master sample for different surveys makes it possible to have overlapping samples in two or more surveys, enabling integration of data and joint analysis of data from those surveys.

More details on master sampling frames and master samples can be found in *United Nations (2005)[19]*.

8. Methods of indirect estimation

Prior to the development of techniques for the direct measurement of informal sector and informal employment, the use of indirect methods of estimation based on data from related sources was common practice. Among these, the most widely used have been those based on residual balance techniques as well as methods of indirect macro-economic estimation such as the GDP approach, employment approach, physical input approach, monetary methods, and Multiple-Indicator Multiple Cause (MIMIC) model.[20] Indirect methods based on residual balance techniques have been primarily used to estimate employment in the informal sector and informal employment although they can also be used for estimating the contribution of the informal sector to the GDP. The methods of indirect macro-economic estimation have been primarily used in national accounts to produce estimates of the size of the informal sector as well as its contribution to the economy (value added).

Residual balance techniques estimate the size of employment in the informal sector and informal employment by comparing labour force data collected through a population census, a labour force survey, or another household survey covering employment, with other sources of job registration such as establishment censuses or surveys, social insurance or fiscal statistics. The first source, also referred to as the "exhaustive" source, is assumed to capture all forms of employment (formal and informal) while the second source provides figures on "registered" employment. The estimates from the population census or labour force survey will always be larger than those from the economic census, establishment survey or administrative records because the latter sources do not capture employment outside formal establishments. Thus, depending on the subcategories of workers compared, the residual balance obtained is used as a proxy of total informal employment or employment in the informal sector.

For the residual balance techniques to be used, it is necessary that data on industry (or, in some cases, occupation) from the population census or labour force survey be available cross-classified by status in employment and sex, and that the source of data on "registered" employment include information on at least one of the criteria used for defining the informal sector, preferably the legal status of the firm, or if not, registration or employment size. Thus, the estimates of employment in the informal sector and informal employment will vary depending on the criterion used to infer the informal sector.

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[19] United Nations Statistics Division, *Household Sample Surveys in Developing and Transition Countries*, New York, 2005.

An application of this methodology using legal status of the firm as criterion is presented in the ILO study "*Women and Men in the Informal Economy: A statistical picture*" (Geneva, 2002). In this study the residual balance technique is applied to produce estimates of informal employment (excluding agriculture) and its main components for 25 countries as follows[21]:

i.   First, the size of the total non-agricultural workforce is estimated based on data by industry from a population census or labour force survey.

ii. Second, the number of formal employees in the non-agricultural workforce is estimated based on an establishment survey, an economic census, or administrative sources that record the legal status of firms. Paid workers employed in corporations, quasi-corporations or other legally registered firms are classified as formal employees, and estimates of civil servants and members of the armed forces, who are often excluded from economic censuses or surveys, are obtained from other sources and added to the number of formal employees.

iii. Third, the number of formal employees (step 2) is subtracted from the total non-agricultural workforce (step 1). This difference represents a residual estimate of total informal employment (excluding agriculture).

iv. Fourth, the total non-agricultural workforce is divided into paid employees and self-employed persons. An estimate is then prepared for a) paid employees and b) the self-employed (employers, own-account workers, and contributing family workers) in the non-agricultural workforce. The self-employed so derived include some high-end professionals and employers in registered enterprises, who are not considered to be informally employed. However, these categories are assumed to be small worldwide, and smaller in developing countries than in developed countries.

v.   Fifth, an estimate of informal paid employment (outside of agriculture) is derived by subtracting the number of self-employed persons (step 4) from total informal employment (step 3). The estimate refers to employees with informal jobs but may exclude some subcontracted paid workers who declare themselves as self-employed.

The most common indirect methods of macro-economic estimation have been described in detail elsewhere.[22] These methods produce estimates of the size of the informal sector and its contribution to the economy based on combinations of various related aggregate economic variables and a set of assumptions. These methods have been frequently criticized as being too approximate and hypothetical. They depend heavily on the assumptions made and on the coverage and quality of the data used. Moreover, these methods yield highly aggregated macro-economic estimates which do not provide information about the composition of the informal sector or about the way it functions. Such

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[20] Perry, G.E., W.F. Maloney, et.al. 2007. *Informality: Exit and Exclusion*. World Bank Latin American and Caribbean Studies. The World Bank, Washington, DC.

[21] The study also presents a second indirect calculation approach to measure informal employment based on the residual balance technique for cases where a direct measure of employment in the informal sector is available (from mixed surveys or informal sector enterprise surveys).

[22] See Thomas, J.J. 1993. *Informal Economic Activity*. Ann Arbor : University of Michigan Press ; Schneider, F. and D.H. Enste. 2002. *The Shadow Economy : An International Survey.* Cambridge, UK : Cambridge University Press.

disaggregated information is however needed for policy purposes and programme formulation. In fact, indirect methods of macro-economic estimation often include components beyond the scope of the informal sector, i.e. non-observed activities of other units of production (including formal sector enterprises). Thus, although still popular for other purposes, these methods are slowly being phased out for measurement of the informal sector and informal employment as more and more countries have started to regularly collect the necessary data for direct measurement.

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