

## PERSPECTIVES

### Innovations in labour statistics\*

What are the true rates of unemployment and underemployment? Which are the most productive and best paying jobs? How are productivity, working time and employment interrelated? What are the occupational hazards associated with particular jobs? Everyone from policy-makers to ordinary citizens has an interest in this information. Yet the answers depend on the availability of hard data — labour statistics.

Ever since its inception the ILO has been the focal point of a worldwide network through which it gathers and disseminates labour statistics and advises member States on how to design, compile and use them. It also evaluates their quality and strives to obtain internationally comparable data. To that end it sets international standards on statistics. To deal with the technical side of this work, the ILO has — since 1923 — regularly organized international conferences of labour statisticians, bringing together experts who represent governments, employers and workers. Their sixteenth conference was held at the ILO in October 1998.

The actual proceedings of these international conferences are directly of interest to statisticians. But they are relevant to many others as well. Labour statisticians are constantly having to grapple with new problems which concern the public at large, like the emergence of new forms of employment and other workplace practices, underemployment and similarly neglected issues, child labour and other moral issues. Such reasons for statisticians to meet internationally are compounded by others, of a methodological nature. For example, statistics of general interest may not be fully comparable from one country to another; some data are highly imperfect means of measuring what they are supposed to measure (as has been the case with income statistics); or they may be ill-suited to the policy objective they are meant to serve (e.g. prevention, in the case of occupational safety and health). This wide range of concerns illustrates the importance of statisticians' work for anyone concerned with developments in the world of work. Resolution of these issues depends on defining the underlying concepts rigorously and consistently to ensure that measures are adequate and comparable. This groundwork is useful to all the social sciences,

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since definitions otherwise tend to vary from one discipline to another. And though it is virtually impossible for any two disciplines to use exactly the same definition<sup>1</sup> — after all, their purposes differ — anything that can be done to narrow the gaps in understanding is helpful. Besides, the mere fact of discussing definitions and discrepancies between them highlights their limitations and weaknesses, which, in turn, helps to clarify their scope and render future research more rigorous.

The broad significance of this work — not only for practitioners and researchers in the world of work, but also for national policy-makers — is evidenced by the range of issues addressed at the last International Conference of Labour Statisticians, which adopted resolutions on the measurement of underemployment and employment-related income, and on statistics on occupational injuries caused by industrial accidents. The labour statisticians also discussed the activities of the ILO's Bureau of Statistics, the methodology of statistics on child labour, absenteeism, the classification of new forms of employment, and methods for disseminating labour statistics.

These are the substantive reasons that have led the *International Labour Review* to devote this *perspectives* section to a note on the most recent effort of the International Conference of Labour Statisticians. But there is also a historical reason for doing so. Indeed, the *Review* has a special relationship with labour statistics that dates back to its earliest years. Under Article 396 of the Treaty of Peace signed at Versailles in 1919 and Article 10 of the ILO Constitution, the functions of the International Labour Office include the collection, publication and distribution of information on the world of work. Accordingly, as from its very first issue in 1921 the *International Labour Review* published national data on prices and unemployment. Over the years these came to be supplemented by data on employment, wages, working time, labour disputes and collective agreements. But given its growing volume, this material soon had to be published in special statistical supplements to the *Review* and later, as from 1935, in a separate periodical, the *Yearbook of Labour Statistics*, which has been supplemented by the quarterly *Bulletin of Labour Statistics* since 1965.

The Labour Statistics Convention, 1985 (No. 160), adopted by the International Labour Conference, gives a general definition of labour statistics. The specific subjects they cover are listed in Article 1 of the Convention and include the economically active population, labour disputes, unemployment, wages, working time, etc. (see box 1).

Following a short outline of the work of the International Conferences of Labour Statisticians, this *perspective* presents the results of the Sixteenth Conference (1998), focusing on the main three items on its agenda: the measurement of underemployment, the measurement of income from employment, and statistics of occupational injuries. This is supplemented by a few words on other issues taken up but on which no resolutions were adopted, and on prospects for the future.

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<sup>1</sup> For the differences between the statistical and legal definitions of part-time work, see, for example, ILO, 1997a, pp. 558-564.

### Box 1. Labour statistics

#### Article 1 of the Labour Statistics Convention, 1985 (No. 160)

##### I. GENERAL PROVISIONS

###### *Article 1*

Each Member which ratifies this Convention undertakes that it will regularly collect, compile and publish basic labour statistics, which shall be progressively expanded in accordance with its resources to cover the following subjects:

- (a) economically active population, employment, where relevant unemployment, and where possible visible underemployment;
- (b) structure and distribution of the economically active population, for detailed analysis and to serve as benchmark data;
- (c) average earnings and hours of work (hours actually worked or hours paid for) and, where appropriate, time rates of wages and normal hours of work;
- (d) wage structure and distribution;
- (e) labour cost;
- (f) consumer price indices;
- (g) household expenditure or, where appropriate, family expenditure and, where possible, household income or, where appropriate, family income;
- (h) occupational injuries and, as far as possible, occupational diseases; and
- (i) industrial disputes.

### *International Conferences of Labour Statisticians*

If the ILO's member States are to gather comparable data and measure things that are similar, they need to be provided with guidelines both on the definition of concepts and on data collection methods. This is the task of the International Conferences of Labour Statisticians (ICLS), for which the Bureau of Statistics of the ILO prepares the background documents. The first ICLS was held in 1923, with an agenda that included the classification of industries and occupations, wages, working time and related issues, and occupational injuries and diseases. Sixteen such Conferences have been held to date.

These Conferences adopt resolutions that set out recommendations to national statistical authorities on the definition of concepts and methods for gathering labour statistics. Their resolutions do not require ratification and are therefore neither binding upon member States, nor subject to supervision for compliance. Their significance, however, can be gauged by the effect that national statistical services give to the recommendations they contain. These recommendations are periodically re-examined and revised by the ICLS, taking account of difficulties encountered in their application and of intervening changes in concepts and methodology. The classification of occupations (and, formerly, industries), for example, featured on the agendas of eight ICLSs — albeit under different headings — and the fruit of these efforts is the now widely known International Standard Classification of Occupations, ISCO-88 (ILO, 1991).

An update on the status of ICLS Resolutions is published in *Current International Recommendations on Labour Statistics* (ILO, 1988). The ICLS also sets out the ILO's programme of work in the field of statistics.

The ILO is responsible inter alia for following up the resolutions of the ICLS, extending technical assistance to member States to help them apply recommendations, and examining new methods and developments likely to require revision of existing resolutions. In practice, these tasks fall to its Bureau of Statistics, which also collects and disseminates labour statistics pursuant to the Organization's basic mandate.<sup>2</sup> In addition, it publishes manuals (e.g. Hussmanns, Mehran and Verma, 1990) and technical references on sources of data and statistical methods (*Sources and methods: Labour statistics*), together with the above-mentioned *Yearbook* and *Bulletin*. The Bureau of Statistics is also in charge of preparations for the ICLS, for which it drafts reports on the subjects to be discussed. Those submitted to the Sixteenth Conference — which also contain subject-specific bibliographies — are included in the list of references at the end of this perspective (see ILO, 1998a, 1998b, 1998c, 1998d and, for the final report of the Sixteenth ICLS, ILO, 1998e).

Thus the recommendations that emerged from the Sixteenth ICLS (1998) — on the measurement of underemployment, the measurement of income from employment, and statistics of occupational injuries — are the outcome of joint efforts by the Bureau of Statistics and the labour statisticians who attended the Conference. Indeed, the interaction between the statistical work of the ILO, the statisticians participating in the Conferences and national statistical services is an ongoing process. In this way, the quality of statistical work, including data collection and dissemination and related guidelines, is constantly being evaluated by the very people who produce and use labour statistics. This explains why it is unnecessary to make the Conferences' resolutions binding. The results, jointly achieved, are in the common interest.

### *The definition and measurement of underemployment*

The economically active population is typically divided into two categories — the employed and the unemployed. This is the case in most published national statistics. But this simplistic division is inadequate as an indicator of underutilized human resources or of employment: in between the two categories, there is a third comprising the underemployed. There is nothing new about underemployment; it has always been a fact of life in developing countries and exists to some extent in all countries. Indeed, the first reference to underemployment by labour statisticians dates back to the Second ICLS, in 1925. It was subsequently discussed on three more occasions before the Ninth Conference eventually defined it in 1957. That definition was then revised in 1966, in 1982 and again in 1998. There are two reasons why the process has taken so long. The first is political and the second, methodological.

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<sup>2</sup> For a more detailed description of the activities of the Bureau of Statistics, see Taswell and Hoffmann, 1995.

As long as the industrialized countries experienced almost full employment, underemployment was marginal and hardly a cause for concern. Over the past few decades, however, the situation has changed. Involuntary part-time employment has increased. Casual, temporary and short-term jobs have proliferated, as have internships and other transitional arrangements introduced in the framework of policies to combat unemployment. Besides, there are now many jobs that pay insufficient wages, whether by reference to the poverty line or to the qualifications of those who perform them. The proportion of workers who, while not formally counted as unemployed, are without adequate employment has become so high as to be impossible to ignore. The fact remains that awareness of the problem has come rather late, given its magnitude and long history in the developing countries.

The second (methodological) reason stems from the difficulty of establishing a rigorous definition of underemployment that can serve to measure it using existing data collection methods. The 1982 definition suffered a number of shortcomings in this respect.

The resolution adopted by the Thirteenth ICLS (1982) drew a distinction between visible underemployment and invisible underemployment, in the following terms:

Underemployment exists when a person's employment is inadequate in relation to specified norms or alternative employment, account being taken of his or her occupational skill (training and working experience). Two principal forms of underemployment may be distinguished: visible and invisible. ... Visible underemployment is primarily a statistical concept directly measurable by labour force and other surveys, reflecting an insufficiency in the volume of employment.

... Invisible underemployment is primarily an analytical concept reflecting a misallocation of labour resources or a fundamental imbalance as between labour and other factors of production. Characteristic symptoms might be low income, underutilisation of skill, low productivity. Analytical studies of invisible underemployment should be directed to the examination and analysis of a wide variety of data, including income and skill levels (disguised underemployment) and productivity measures (potential underemployment).

... For operational reasons, the statistical measurement of underemployment may be limited to visible underemployment.

... Persons visibly underemployed comprise all persons in paid or self-employment, whether at work or not at work, involuntarily working less than the normal duration of work determined for the activity, who were seeking or available for additional work during the reference period (ILO, 1988, pp. 52-53, paras. 14-18).

These distinctions posed at least two major difficulties. The first — arising in the definition of visible underemployment — is that the terms “involuntarily working less” were liable to be interpreted variously from one country to another. Indeed, the reasons why a person cannot work more can range from a shortage of jobs to family reasons to weather conditions. Besides, the involuntary nature of underemployment could be ascertained more objectively by reference to whether or not the worker concerned is willing to take up another job (see ILO, 1998a, pp. 13-19, paras. 45-62; ILO, 1997a, pp. 563-564; ILO, 1997b, pp. 11-20).

The second difficulty was the lack of a definition of invisible underemployment that could be applied directly in statistical surveys. The existing definition identified three variables that could serve as indicators of low productivity (i.e. income, use of skills, productivity of establishments), but without giving any guidance as to how they ought to be measured or the thresholds below which the corresponding values could be considered insufficient (ILO, 1998a, pp. 24-25, paras. 69-73). This difficulty was in fact acknowledged in the resolution itself, which stated that: “For operational reasons, the measurement of underemployment may be limited to visible underemployment”. Hence the need to redefine — and, consequently, rename — the notions of visible and invisible underemployment.

An important step was taken by the Sixteenth ICLS (1998) toward an operational definition, with the adoption of the “Resolution concerning the measurement of underemployment and inadequate employment situations”. It is divided into two main parts: “Measures of time-related underemployment” and “Inadequate employment situations”.

### Time-related underemployment

Underemployment reflects underutilization of the productive capacity of the employed population, including those which arise from a deficient national or local economic system. It relates to an alternative employment situation in which persons are willing and available to engage. In this resolution, recommendations concerning the measurement of underemployment are limited to time-related underemployment, as defined in subparagraph 8(1) below (ILO, 1998e, p. 49, para. 4).

The measurement of underemployment *per se* is thus limited to time-related underemployment.<sup>3</sup> What remained to be established were the criteria whereby such underemployment could be identified with greater objectiveness.

In order to understand the problem this poses, it is helpful to imagine a household survey situation. Here, the first step would be to establish whether the respondent is willing to work more hours, either by taking up another job in addition to or instead of his/her present job or by working longer hours in his/her present job. A criterion for verifying an expressed willingness to do so would be whether or not the respondent is actively seeking another job or a way of supplementing the one he/she currently holds. The second step would be to ascertain that the respondent is genuinely available to work longer hours, and the third, that he/she currently works fewer hours than is considered normal — hence the need to set a threshold taking account of national situations. Indeed, the concepts of statutory hours of work (where it exists), average hours actually worked and usual hours of work all vary considerably from one country to another.<sup>4</sup> The same applies to the working-time threshold below which a job is considered to be part time. The full text of the paragraphs of the resolution that spell out the applicable criteria is reproduced in box 2.

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<sup>3</sup> Other forms of “underemployment” will henceforth be considered and measured in terms of “inadequate employment situations”.

<sup>4</sup> For definitions of these concepts, see ILO, 1997a, p. 560.

### Box 2. Definition of time-related underemployment

7. Time-related underemployment exists when the hours of work of an employed person are insufficient in relation to an alternative employment situation in which the person is willing and available to engage.
8. (1) Persons in time-related underemployment comprise all persons in employment, as defined in current international guidelines regarding employment statistics, who satisfy the following three criteria during the reference period used to define employment:
  - (a) “willing to work additional hours”, i.e. wanted another job (or jobs) in addition to their current job (or jobs) to increase their total hours of work; to replace any of their current jobs with another job (or jobs) with increased hours of work; to increase the hours of work in any of their current jobs; or a combination of the above. In order to show how “willingness to work additional hours” is expressed in terms of action which is meaningful under national circumstances, those who have actively sought to work additional hours should be distinguished from those who have not. Actively seeking to work additional hours is to be defined according to the criteria used in the definition of job search used for the measurement of the economically active population, also taking into account activities needed to increase the hours of work in the current job;
  - (b) “available to work additional hours”, i.e. are ready, within a specified subsequent period, to work additional hours, given opportunities for additional work. The subsequent period to be specified when determining workers’ availability to work additional hours should be chosen in light of national circumstances and comprise the period generally required for workers to leave one job in order to start another;
  - (c) “worked less than a threshold relating to working time”, i.e. persons whose “hours actually worked” in all jobs during the reference period, as defined in current international guidelines regarding working time statistics, were below a threshold, to be chosen according to national circumstances. This threshold may be determined by e.g. the boundary between full-time and part-time employment, median values, averages, or norms for hours of work as specified in relevant legislation, collective agreements, agreements on working time arrangements or labour practices in countries.
- (2) To provide analytical flexibility for policy formulation and evaluation, as well as for international comparability, countries should endeavour to identify all workers who during the reference period were willing and available to work additional hours, regardless of the hours they actually worked during the reference period.

Source: ILO, 1998e, p. 50, paras. 7-8.

A major advantage of this definition of underemployment in terms of time worked is that it enables situations of underemployment to be identified by relying on the replies to questions that are the same as those used to determine situations of unemployment, employment and inactivity. The following table shows how this works:

## The use of the classification criteria of the labour force framework

Criteria	Category			
	Employment	Unemployment	Underemployment	Inactivity
Works or has a job	Yes	No	Yes	No
Is willing to work	–	Yes	Yes	No
Is able to work	–	Yes	Yes	No

Source: ILO, 1998a, p. 10, fig. 1.

Another advantage is that it can make underemployment look less like a sub-category of employment than as a discrete sub-group of the economically active population — alongside the unemployed and the employed — or of the working-age population if those not participating in the labour force are counted as well.

With regard to willingness and ability to work more, it is worth noting that the active-job-search criterion is likely to bring about a reduction in the number of women classified as underemployed, on account of their family responsibilities and resulting lack of time. Similarly, in the absence of alternative child-care arrangements, the need to look after young children at home may render women unavailable to take up a job involving longer hours. In fact, the resolution does point out that: “The classification {of the underemployed} by presence of young children and of adults requiring care would also be useful” (ILO, 1998e, p. 51, para. 14 (b)). In a similar spirit — and in order to enhance international comparability — it further recommends that countries should estimate the number of persons “who wanted to work additional hours, regardless of whether or not they sought to do so ... {and} without reference to a threshold” below which employment qualifies as part time (ILO, 1998e, pp. 52-53, paras. 21 (a) and (d)).

### Inadequate employment situations

Indicators of inadequate employment situations that affect the capacities and well-being of workers and which may differ according to national conditions, relate to aspects of the work situation such as use of occupational skills, degree and type of economic risks, schedule of and travel to work, occupational safety and health and general working conditions. To a large extent, the statistical concepts to describe such situations have not been sufficiently developed (ILO, 1998e, p. 50, para. 5).

The concept of inadequate employment covers a wider range of situations than does invisible underemployment. For the purposes of measurement, its definition is not only more objective, but also more practicable. It covers three particular types of situations. The first consists of workers who are over-qualified for the jobs they hold or whose qualifications do not match their jobs. The second comprises workers whose occupational earnings are too low, although they do not necessarily work less than normal hours.<sup>5</sup> The third type of situa-

<sup>5</sup> There are many situations in which people working very long hours do not earn enough to get themselves or their families out of poverty. This is often the case with self-employment and informal-sector activities in the developing countries.

tion could be termed over-employment, i.e. where the worker wants to work fewer hours with a corresponding reduction of income. For further details on these situations, see box 3 which reproduces paragraph 17 of the resolution.

The resolution also gives a non-exhaustive list of reasons why employment situations may be considered inadequate. Depending on national circumstances, such reasons include:

inadequate use and mismatch of occupational skills; inadequate income in current job(s); excessive hours of work; precarious job(s); inadequate tools, equipment or training for the assigned tasks; inadequate social services; travel to work difficulties; variable, arbitrary or inconvenient work schedules; recurring work stoppages because of delivery failures of raw material or energy; prolonged non-payment of wages; long overdue payments from customers. It should be noted that these reasons will not be mutually exclusive nor exhaustive of inadequate employment situations. Workers' availability to change their current work situation, as well as their active job search, as understood in the definition of time-related underemployment, may also be applied (ILO, 1998e, pp. 51-52, para. 16).

In identifying inadequate employment situations, the active-job-search criterion is thus supplemented by the criteria of willingness and availability

### Box 3. Definition of inadequate employment situations

17. Countries may in particular wish to consider, among the various types of inadequate employment situations, whether it is important to produce separate indicators for:
  - (a) *skill-related inadequate employment*, characterized by inadequate utilization and mismatch of occupational skills, thus signifying poor utilization of human capital. Persons in this form of inadequate employment may be understood to include all persons in employment who during the reference period wanted or sought to change their current work situation in order to use their current occupational skills more fully, and were available to do so;
  - (b) *income-related inadequate employment*, resulting from low levels of organization of work or productivity, insufficient tools and equipment and training or deficient infrastructure. Persons in this form of inadequate employment may be understood to include all persons in employment who during the reference period wanted or sought to change their current work situation in order to increase income limited by factors such as those mentioned above, and were available to do so. Countries may wish to apply a threshold, chosen according to national circumstances, above which persons do not qualify for inclusion;
  - (c) *inadequate employment related to excessive hours*, may be understood to refer to a situation where persons in employment wanted or sought to work less hours than they did during the reference period, either in the same job or in another job, with a corresponding reduction of income. Countries may wish to apply a threshold of hours below which persons do not qualify for inclusion.

Source: ILO, 1998e, p. 52, para. 17.

to change the current work situation. As in the case of time-related underemployment, self-employment is specifically mentioned among the situations referred to.

For the time being, national statistical services will find it easier to track time-related underemployment than they will inadequate employment. Yet the new concepts and definitions should help to provide a more accurate evaluation of the incidence of such situations, which reflect labour market dysfunctions. Indeed, the primary objective of measuring them is “to improve the analysis of employment problems and contribute towards formulating and evaluating short-term and long-term policies and measures designed to promote full, productive and freely chosen employment” (ILO, 1998e, p. 49, para. 1).

In most cases, the general concepts of underemployment and inadequate employment contain an implicit reference to insufficient income from employment. The measurement of such income, which also poses considerable difficulties, was the second item on the agenda of the Sixteenth ICLS.

### *The measurement of income from employment*

There are several reasons why this question needed to be addressed. Firstly, the only relevant standard adopted to date applied to wages.<sup>6</sup> There were thus no guidelines for measuring income from self-employment, although this is the most prevalent form of employment in many developing countries. Secondly, since the adoption of the Resolution concerning wages in 1973, remuneration systems have broadened considerably. And thirdly, there remained the question of income accruing from a period of employment but actually paid during a period of inactivity or by an agency other than the employer. Accordingly, the new generic definition of employment-related income reads as follows:

Employment-related income consists of the payments, in cash, in kind or in services, which are received by individuals, for themselves or in respect of their family members, as a result of their current or former involvement in paid or self-employment jobs. Employment-related income excludes income derived from other sources such as property, social assistance, transfers, etc., not related to employment (ILO, 1998e, p. 55, para. 5).

The measurement of income from employment serves a twofold purpose: (a) analysing the income-generating capacity of different economic activities and (b) analysing the economic well-being of persons on the basis of the employment opportunities available to them. In the first case, the focus is on the characteristics of jobs, and the findings of the analysis help to formulate employment policy by identifying those activities that procure a viable income. In the second, the focus is on people, and the findings help to formulate taxation and social policies, e.g. to set income tax rates or the level of social security benefits.

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<sup>6</sup> See the Resolution concerning an integrated system of wages statistics, adopted by the Twelfth International Conference of Labour Statisticians (October 1973), in ILO, 1988, pp. 66-75.

## Income related to wage employment

Income related to paid employment consists of all payments and benefits in cash, kind or services, which are received, over a given reference period, by individuals for themselves or in respect of their family members, by virtue of their involvement in current or former paid employment jobs. Such payments and benefits may be provided by the employer, social security or compulsory insurance schemes or the State (ILO, 1998e, p. 55, para. 10).

Here, the main point is to take account not only of all the components of income from current employment but also of any benefits paid by virtue of former employment.

The components of income include direct wages and salaries in cash; all incentive and premium pay for responsibility, work at night or on weekends, etc.; allowances for mobility, cost of living, transport, etc.; remuneration for time not worked on annual vacation, public holidays and in other circumstances; cash bonuses and gratuities (e.g. year end, 13th month's salary) and exceptional payments for innovative ideas or work methods; remuneration in kind (e.g. food, housing, child-care facilities, private use of a car or telephone); and profit-related pay. The full list of these components of income is given in paragraphs 12 (a), (b) and (c) of the resolution concerning the measurement of employment-related income (see ILO, 1998e, pp. 55-56). Paragraph 12 (d) of the resolution is devoted to employment-related social security benefits, which must be taken into account in the measurement of income regardless whether they accrue from current or former employment. Such benefits thus include deferred wages — e.g. old-age pensions, unemployment benefits — and employment-related sickness benefits. However, they do not include universal entitlements that are paid without regard to employment status (e.g. benefits under certain social security assistance schemes). In order to avoid double-accounting, workers' contributions to the schemes that administer these benefits are excluded from employment-related income. Obviously, such income also excludes any revenue from property.

## Income related to self-employment

Income related to self-employment is defined as “the income which is received, over a given reference period, by individuals, for themselves or in respect of their family members, as a result of their current or former involvement in self-employment jobs” (ILO, 1998e, p. 57, para. 16). It consists of:

- (a) the profit (or the share of profit) which is generated by the self-employment activity;
- (b) where relevant, the remuneration received by owner-managers of corporations and quasi-corporations; and
- (c) the amount of employment-related social security benefits received by self-employed persons through schemes recognizing the status in employment as a specific condition for membership (ILO, 1998e, p. 57, para. 18).

On this last point, the criteria are the same as those applicable to wage employment. The main difficulty with self-employment is to distinguish the

self-employed worker's actual income from resources consumed for generating that income.

The resolution adopts an approach based on the System of National Accounts (SNA, 1993). The term "self-employed" is thus understood to refer to the sole or joint owners of unincorporated enterprises, but it may also include the owner-managers of corporations and quasi-corporations. Gross income is the value of gross output minus operating expenses; and net income means gross income minus consumption of fixed capital (depreciation). But whereas the System of National Accounts takes the enterprise as its basic unit of observation, the measurement of income from self-employment requires that the basic unit be the individual. It follows that a share of the enterprise's income must be apportioned to each of the individuals involved in its operation, be they co-owners or family members. This is particularly important for identifying and recognizing the contributions of women and children, though a footnote to the resolution stresses that their inclusion in the statistics "should not be interpreted as condoning child labour" (ILO, 1998e, p. 55).

The resolution makes a number of methodological recommendations concerning reference periods, data sources and compilation, data classification (particularly by occupation and status in employment), a complementary approach to non-measurable benefits (qualitative studies on certain population groups can help to evaluate income in kind, e.g. own consumption in agriculture), and the relation between employment-related income and volume of employment. The importance of this last point lies in that it links income to work duration and thereby gives some idea of the productivity of various occupations, which is especially difficult to evaluate in the case of self-employment.

### *Statistics of occupational injuries*

The third item on the agenda of the Sixteenth ICLS (1998) was statistics of occupational injuries. The ultimate objective of keeping such statistics is to prevent occupational accidents and the resulting injuries sustained by workers. Here, the main difficulty lies in the extensive range of information that needs to be collected in order to identify the combinations of circumstances conducive to particular accidents and to prevent those combinations of circumstances from materializing. Also required are appropriate systems of classification for analysing that information. Data collection and classification methods thus lie at the very heart of the problem.

Among the most serious shortcomings of data collection on occupational injuries is that the source of the data is typically the employer's or worker's report to a government agency, whether it be the labour administration or some institution administering a workers' compensation scheme. The result is that occupational accidents tend to be grossly under-reported. The reasons include ignorance of the law, lack of organization in small enterprises, and cover-ups, particularly where enterprises' contributions to workers' compensation schemes increase with the number of injuries reported. Data obtained from these sources should therefore be supplemented with data from other sources, such as house-

hold surveys, enterprise surveys, the records of health care establishments and death registries. In 1990, for example, the Health and Safety Executive of the United Kingdom sponsored a supplement to the Labour Force Survey containing questions on workplace injuries and ill-health. Its findings showed that, of all the occupational injuries reportable to a safety authority, employers had reported less than a third, and self-employed workers less than one in 20 (ILO, 1998c, p. 23, para. 97). Accordingly, the resolution concerning statistics of occupational injuries resulting from occupational accidents recommends diversifying the sources of data in order to produce a more accurate picture of reality.

Another difficulty stems from the need to establish as precisely as possible the circumstances in which accidents occur. This, in turn, requires a clear definition of the types of data to be collected, namely information about:

- *the enterprise* where the accident occurred (location, economic activity, number of workers);
- *the person injured* (sex, age, occupation, status in employment);
- *the injury* (fatal or non-fatal, type of injury, part of body injured); and
- *the accident* and its circumstances (type of location of the accident, date and time of the accident, mode of injury, material agency of injury) (ILO, 1998e, p. 68, para. 9).

This last item is particularly important for prevention. Indeed, its underlying objective is to establish the activity the injured worker was engaged in, the specific task he/she was carrying out at the time of the accident and with whom he/she was carrying it out, the immediate cause of the accident and what departure from standard procedure caused it, the material agent associated with the injury and its consequences. Although few countries are currently equipped to collect all these data, they are essential to better prevention, which calls for the most detailed possible knowledge of the circumstances typically surrounding accidents.

Prevention also requires that statistics be analysed in order to establish the causes of accidents and the effectiveness of such preventive measures as are taken. Frequency rates and incidence rates, for example, are useful indicators in this respect. An international comparison of those rates for a given occupation might prompt those working in the sector concerned to reconsider their preventive measures. The resolution makes several recommendations with a view to enhancing such international comparability.

The definitions it contains — of occupational accident, commuting accident, occupational injury, case of occupational injury, and incapacity for work — are clear, precise and usable regardless of the source of the data. In household surveys, for example, they must be intelligible to respondents. In particular, the resolution recommends that the unit of observation should be the “case of occupational injury”, which it defines as “the case of one worker incurring an occupational injury as a result of one occupational accident” (ILO, 1998e, p. 67, para. 5 (d)). Indeed, the same worker may have sustained several injuries resulting from several accidents during a given reference period. Alternatively, several workers may have sustained several injuries as a result of a single accident.

With a view to enhancing comparability between economic activities, occupations, regions, etc., the resolution suggests four indicators for measuring: (1) the frequency rate of new cases of occupational injury (whose number is divided by the total number of hours worked by the workers in the reference group during the reference period); (2) the incidence rate of new cases of occupational injury (relative to the total number of workers in the reference group during the reference period); (3) the severity rate of new cases of occupational injury (number of days lost over total amount of time worked); and (4) the number of days lost per new case of occupational injury.<sup>7</sup>

Lastly, since data analysis also presupposes appropriate classification, the annexes to the resolution contain the required standard international classifications by economic activity, size of enterprise, occupation, status in employment, type of injury, and part of body injured. Furthermore, the ILO is called upon to develop classifications based on other variables such as type of location of the accident, mode of injury and material agency of injury.

Given the highly technical nature of collecting and processing statistics on occupational injuries, and considering that the results thereof ought to be used for prevention not only by government agencies but also by employers and workers, the resolution invites the ILO to prepare a manual to provide technical guidance on the implementation of its recommendations.

### *Other innovations and prospects*

Although consideration of the three resolutions outlined above accounted for much of the work of the Sixteenth ICLS, there was more on its agenda besides. The labour statisticians also discussed the work of the Bureau of Statistics, methodological issues concerning child labour statistics — with the household being agreed the best unit for data collection — and the difficulty of classifying by status in employment certain categories close to the boundaries between wage employment and self-employment,<sup>8</sup> hence the need for clear guidelines on this question.

Recommendations were adopted on two other items on the agenda. The first of these was the statistical treatment of extended absences from work, which are becoming increasingly common and varied as to their causes, i.e. maternity leave, parental leave, educational or training leave, unpaid leave initiated by the employee, paid or unpaid leave initiated by the employer, and seasonal workers not at work during the off-season. The question here centres on the criteria whereby the persons concerned should be classified as employed, unemployed or inactive (see ILO, 1998d, pp. 27-34; ILO, 1998e, pp. 10-15).

The second set of recommendations adopted by the ICLS relates to dissemination practices for labour statistics. For example, recent experience has shown how financial markets can be influenced by reports of employment growth

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<sup>7</sup> For full details on these indicators and their definitions, see ILO, 1998e, pp. 69-70, para. 19.

<sup>8</sup> Namely: owner-managers of incorporated enterprises, outworkers/homeworkers, contractors, franchisees and subsistence workers.

or contraction. In the interests of democracy and equal treatment of all citizens, the dissemination of labour statistics should therefore conform to certain rules concerning:

- *access*, e.g. “the initial release of the main labour aggregates into the public domain should be free of charge”;
- *integrity*, e.g. “data should be released the same day and at precisely the same time of day to all parties” or “ministerial commentaries and statements made at the time the statistics are released must be clearly distinguished from those of the statisticians”;
- *data*, e.g. “users should be made well aware of the reference period” and of any significant shortfalls in coverage;
- *quality*, e.g. “regularly updated documentation on metadata — the definitions, methodology, sources, sampling error and other quality indicators ... — should be made publicly available”.<sup>9</sup>

Lastly, the Sixteenth ICLS also had to consider the future work of the Bureau of Statistics. The guidance it provided on this point reflects current concerns regarding the future of the world of work and the need for quantitative instruments with which to monitor and, if possible, anticipate its development. As regards the question of working time, for example, the ILO was invited to focus on: (1) developing guidelines on the estimates of total hours worked, for use as a basis for statistics on labour productivity, and (2) statistics on working-time arrangements and work schedules, both for a short reference period, such as a day or a week, and for longer periods, such as a month or a year, as well as over the life cycle. Indeed, the comparative measurement of productivity as between countries or economic sectors raises numerous methodological issues. Similarly, the diversification of working-time arrangements is making it more and more difficult to refer to “usual” hours of work simply in terms of traditional periods such as a day or a week. The ICLS also drew attention to the need to update existing guidelines on consumer price indices, and to the growing demand for statistics on occupational employment and wages. On the question of employment and unemployment statistics, two work items were discussed, namely, (1) the integration of existing international standards on the subject and (2) the development of global and regional estimates. A need was also expressed for statistics that could be used to study the dynamics of the labour market. Indeed, at present, official labour statistics provide static snapshots of the labour market situation and structure, but there are very few statistics that can describe the process whereby persons arrived at or left a given situation and where they moved to. And where they do exist, such statistics are not the subject of any international standards. However, work in this field is already under way, and the Bureau of Statistics has developed a possible typology for the “pattern of activities during year  $t$ ”. This comprises 20 categories designed to reflect a person’s broad pattern of labour market experience over an entire year (see ILO, 1998d, p. 43, box 6.1).

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<sup>9</sup> The full text of 20 guidelines covering these four areas is given in ILO, 1998e, pp. 16-17.

So this key process by which statistical norms evolve, with all deliberate speed, to take account of the changing world of work, continues.

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\* These documents are also available on the ILO's website at: <http://www.ilo.org/english/120stat/techmeet/16thicls/index.htm>.