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Principles and Recommendations for Population and Housing Censuses

Revision 1

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Preface

Since its early years, the United Nations has issued a series of international recommendations on population and housing censuses to assist countries in planning and carrying out improved and cost-effective censuses. Although the scope of these recommendations has varied somewhat over the decades, they usually provide guidance on the main characteristics of population and housing censuses, general material on census operations and methods and more detailed guidance on the content of censuses, including illustrative tabulations. This series of recommendations was prepared under the guidance of the Statistical Commission of the United Nations. The last such global recommendations were published in 1980 under the title *Principles and Recommendations for Population and Housing Censuses* (ST/ESA/STAT/SER.M/67).[1] That publication has been widely used by national statistical offices and census officials in countries throughout the world in planning and organizing their population and housing censuses, as well as in other related data-collection activities, particularly demographic and socio-economic surveys.

In preparing for the 2000 round of censuses, four themes guided the process of revising the *Principles and Recommendations for Population and Housing Censuses*:

(*a*) Changes in technology and their subsequent adoptions for use in national census-taking;

(*b*) The increased capability of national census offices to disseminate census data in a more flexible manner together with the increased ability of users to utilize census data stored in electronic formats;

(c) Changes in socio-economic situations in many countries, particularly those pertaining to housing, economic characteristics of the population and patterns of international migration;

(*d*) The increased emphasis on responding to user needs for demographic and social data in addition to other uses for population and housing censuses which, *inter alia*, might affect the priority given to particular census topics.

During the revision process, the United Nations Secretaritat consulted census and survey experts representing all regions of the world. The experts stressed the importance of maintaining the right balance between the sometimes conflicting needs for continuity and change in census operations. The experts also indicated the need to widely disseminate census results to meet national needs and justify the high cost of census-taking and stressed that any changes in the *Principles and Recommendations* could have implications for census design, training and the allocation of resources for censuses.

At its twenty-ninth session, in 1997, the Statistical Commission considered the draft principles and recommendations for population and housing censuses (PROVISIONAL ST/ESA/STAT/SER.M/67/Rev.1) and adopted them with some modifications. The Commission also requested that the UN Secretariat publish the principles and recommendations.[2]

The structure of the revised *Principles and Recommendations* closely follows that of the previous recommendations. Modifications are made in the contents of part one. Part two combines topics for population censuses and those for housing censuses. An entirely new part, part three, has been added to highlight the needs of users. It also contains a section focused on the need to consider the relationship between census topics and specific uses of census data such as the Minimum National Social Data Set (MNSDS). Formats for selected tabulations for each population and housing topic together with a brief statement of users are shown in annexes I and II. References and an index are shown at the conclusion of the publication. Finally, the latest revision (1993) of the System of National Accounts,[3] the Recommendations on Statistics of International Migration, Revision 1 (ST/ESA/STAT/SER.M/58/Rev.1), the International Standard Classification of Education, ISCED 1997[4] and the World Health Organization (WHO) International Classification of Impairment, Disabilities and Handicap[5] have been taken into account in preparing the revised *Principles and Recommendations.*

The following publications issued by the regional commissions will provide useful guidance on census operations relevant to the countries in each region:

(a) Economic Commission for Europe (ECE), *Recommendations for the 2000 Censuses of Population and Housing in the ECE Region*, Statistical Standards and Studies, No. 49;

(b) Economic and Social Commission for Asia and the Pacific (ESCAP), *Report of the Regional Working Group on the 1990 World Population and Housing Census Programme (STAT/WPHCP/14);*

(c) Economic Commission for Latin America and the Caribbean (ECLAC), *Informe Final del Seminario Sobre*

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[1] Statistical Papers, No. 67, (United Nations publication, Sales No. E.80.XVII.8).

[2] Ibid., Supplement No. 4, 1997 (E/1997/24), Chap. X, sect. A.

[3] United Nations publication, Sales No. E.94.XVII.4.

[4] See document 29C/20, of 8 August 1997, of the twenty-ninth session of the General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO), annex II.

[5] Geneva, World Health Organization. Reprinted 1993.

Contenido y Diseno de la Boleta Censal, Rio de Janeiro, Brazil, 13 al 16 de marzo de 1989 (LC/L.508);

(d) Economic Commission for Africa (ECA), *Report of the Regional Working Group on Recommendations for 2000 Round of Population and Housing Censuses in Africa* (ECA/STAT/WG/PHC/95/21);

(e) Economic and Social Commission for Western Asia (ESCWA), *Final Report and Recommendations of the Regional Seminar on Population and Housing Censuses in the ESCWA Region (E/ESCWA/STAT/85/WG.1/2).*

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Explanatory notes

ICIDH	International Classification of Impairments, Disabilities, and Handicaps (WHO)
ICLS	International Conference of Labour Statisticians
ICSE	International Classification of Status in Employment
ILO	International Labour Organization
IMPS	Integrated Microcomputer Processing System
INSEE	French National Institute of Statistics and Economic Studies
ISCED	International Standard Classification of Education (UNESCO)
ISCO	International Standard Classification of Occupations (ILO)
ISIC	International Standard Industrial Classification of All Economic Activities
MB	megabyte
MNSDS	Minimum National Social Data Set
OCR	optical character reading
OMR	optical mark reading
PES	post-enumeration survey
SA	supervision area
SNA	System of National Accounts
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

Part One

Operational aspects of population and housing censuses

I. Definitions, essential features and uses of population and housing censuses

A. Definitions

1. Population census

1.1. A population census is the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating demographic, economic and social data pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country.

1.2 . Population is basic to the production and distribution of material wealth. In order to plan for, and implement, economic and social development, administrative activity or scientific research, it is necessary to have reliable and detailed data on the size, distribution and composition of population. The population census is a primary source of these basic benchmark statistics, covering not only the settled population but homeless persons and nomadic groups as well. Data from population censuses may be presented and analysed in terms of statistics on persons, married couples, families and households and for a wide variety of geographical units ranging from the country as a whole to individual small localities or city blocks.

2. Housing census

1.3. A housing census is the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating statistical data pertaining, at a specified time, to all living quarters[1] and occupants thereof in a country or in a well-delimited part of a country.

1.4. The census must provide information on the supply of housing units together with information on the structural characteristics and facilities that have a bearing upon the maintenance of privacy and health and the development of normal family living conditions. Sufficient demographic, social and economic data concerning the occupants must be collected to furnish a description of housing conditions and also to provide basic data for analysing the causes of housing deficiencies and for studying possibilities for remedial action. In this connection, data obtained as part of the population census, including data on homeless persons, are often used in the presentation and analysis of the results of the housing census.

[1] For the definition of "living quarters ", see para. 2.320.

B. Essential features

1.5. The essential features of population and housing censuses are individual enumeration, universality within a defined territory, simultaneity and defined periodicity.

1. Individual enumeration

1.6. The term "census " implies that each individual and each set of living quarters is enumerated separately and that the characteristics thereof are separately recorded. Only by this procedure can the data on the various characteristics be cross-classified. Individual enumeration does not preclude the use of sampling techniques for obtaining data on specified characteristics, provided that the sample design is consistent with the size of the areas for which the data are to be tabulated and the degree of detail in the cross-tabulations to be made.

2. Universality within a defined territory

1.7. The census should cover a precisely defined territory (for example, the entire country or a well-delimited part of it). The population census should include every person present and/or residing within its scope, depending upon the type of population count required. The housing census should include every set of living quarters irrespective of type.

3. Simultaneity

1.8. Each person and each set of living quarters should be enumerated as nearly as possible in respect of the same well-defined point of time and the data collected should refer to a well-defined reference period. The time-reference period need not, however, be identical for all of the data collected. For most of the data, it will be the day of the census; in some instances, it may be a period prior to the census.

4. Defined periodicity

1.9. Censuses should be taken at regular intervals so that comparable information is made available in a fixed sequence. A series of censuses makes it possible to appraise the past, accurately describe the present and estimate the future. It is recommended that a national census be taken at least every 10 years. Some countries may find it necessary to carry out censuses more frequently because of the rapidity of major changes in their population and/or its housing circumstances.

1.10. The census data of any country are of greater value nationally, regionally and internationally if they can be compared with the results of censuses of other countries that were taken at approximately the same time. Therefore, countries may wish to undertake a census in years ending in "0" or at a time as near to those years as possible. It is obvious, however, that legal, administrative, financial and other considerations often make it inadvisable for a country to adhere to a standard international pattern in the timing of its censuses. In fixing a census date, therefore, such national factors should be given greater weight than the desirability of international simultaneity.

C. Strategic objectives

1.11. The development of plans for a census should include the early preparation of a set of strategic aims and objectives that may be used to guide the implementation of the plans, set standards and form a set of benchmarks against which outcomes can be assessed to help determine the success of the census. Ideally, the starting point for developing these objectives would lie in combining information derived from evaluating previous census experience, from understanding user requirements for information from the census and from assessing changes in both society and technology. In practice, some of this information is difficult to obtain and often provides conflicting guidance. Nevertheless, such objectives can be used to assist in planning major elements of the process. Although the strategic objectives of the census will be specific to individual countries and will differ according to local circumstances, they can be described under the headings Census content, Impact on the public and on the census staff, Production of census results, and Cost effectiveness.

1.12. *Census content:* the aim is to ensure that the topics are appropriate for meeting the demonstrated requirements of users, taking into account considerations of cost-effectiveness. Subsidiary objectives under this element relate to (*a*) suitable consultation with existing and potential users at all stages, (*b*) establishment of measurable standards of reliability incorporating user views on priorities and (*c*) adequate testing of new topics to ensure successful collection and production of reliable results.

1.13. *Impact on the public and on the census staff*: the aim is to ensure that all the aspects of collection operations and the dissemination of results are acceptable to the public and fully comply with legal and ethical standards for protecting the confidentiality of individual responses. The public should be fully informed about census objectives, content and methods as well as about their rights and obligations with respect to the census. Similarly, all census staff must be fully aware of their responsibilities. Subsidiary objectives include such issues as (*a*) keeping completed forms and other records containing personal information secure and confidential, (*b*) ensuring that public support for all aspects of the census is as strong as possible and (*c*) producing requested customized output in a manner consistent with preventing disclosure of personal information, adhering to established reliability standards for the release of data, and implementing policies designed to safeguard the access of all users to census results.

1.14. *Production of census results:* the aim is to deliver census products and services and to meet legal obligations and users' needs with stated quality standards and a pre-determined timetable. Subsidiary objectives include (*a*) producing outputs with a minimum of error suitable for the purposes for which the data are to be used, (*b*) providing standard outputs for the main results and services for customized output, (c) proving access to output, (*d*) using geographical bases appropriate for collecting and referencing data for output, (*e*) improving methods of enumeration, particularly in difficult areas so as to reduce levels of under-coverage and response error, *(f*) improving methods of evaluation and the means to convey findings to users and (*g*) developing measure of quality and targets.

1.15. *Cost-effectiveness*: the aim is to plan and carry out a census as inexpensively as possible in a manner consistent with the content and quality requirements. Subsidiary objectives relate to (*a*) capturing data more cost-effectively, (*b*) using efficient, speedy and reliable processing systems that are no more complex than necessary, (c) contracting out appropriate parts of the operation where this would be both cost-effective and consistent with the other strategic objectives, particularly the need to retain public confidence in the confidentiality of individual responses, (*d*) exploring possible sources of alternative funding and, if appropriate, developing proposals for cost recovery and income-generation and (*e*) using development resources efficiently to develop prototype systems that can accommodate change and give "value for the money" in the final systems.

1.16. These objectives can be used as benchmarks to assess user requirements and may also be built into appraisal systems which, with suitable weighting, can be used to compare and review options.

D. Uses in an integrated programme of data collection and compilation

1.17. Population and housing censuses are a principal means of collecting basic population and housing statistics as part of

an integrated programme of data collection and compilation aimed at providing a comprehensive source of statistical information for economic and social development planning, for administrative purposes, for assessing conditions in human settlements, for research and for commercial and other uses.

1.18. The value of either a population or a housing census is increased if the results can be employed together with the results of other investigations, as in the use of the census data as a basis or benchmark for current statistics, and if it can furnish the information needed for conducting other statistical investigations. It can, for example, provide a statistical frame for other censuses or sample surveys. The population census is also important in developing the population estimates needed to calculate vital rates from civil registration data (see paras. 1.46 -1.48 below). In addition, these censuses are a major source of data used in official compilations of social indicators, particularly on topics that usually change slowly over time (see paras. 3.84-3.91).[2] The purposes of a continuing coordinated programme of data collection and compilation can best be served, therefore, if the relationship among the population census, the housing census and other statistical investigations is considered when census planning is under way and if provision is made for facilitating the joint use of the census and its results in connection with such investigations. The use of consistent concepts and definitions throughout an integrated programme of data collection and compilation is essential if the advantages of these relationships are to be fully realized. Of course, census-type information can also be derived from population registers and sample surveys without undertaking a complete enumeration. These alternative data sources, which are not covered in the present publication, have their own strengths and limitations. For a more extensive discussion of these data sources as well as their comparative advantages, see the following United Nations handbooks and technical reports: *Handbook of Household Surveys (Revised Edition)*,[3] *Methodology and Evaluation of Population Registers and Similar Systems*,[4] *Handbook of Statistical Organization: A Study on the Organization of National Statistical Services and Related Management Issues*,[5] and *Handbook of Population and Housing Censuses, Part 1: Planning, Organization and Administration of Population and Housing Censuses*.[6]

1.19. A population and housing census also serves as the logical starting place for work on the organization and construction of a computerized statistical database to serve continuing national and local needs for data in the intercensal period.[7]

1. Uses of population censuses

(a) Uses for policy-making, planning and administrative purposes

1.20. The fundamental purpose of the population census is to provide the facts essential to governmental policy-making, planning and administration. Information on the size, distribution and characteristics of a country's population is essential for describing and assessing its economic, social and demographic circumstances and for developing sound policies and programmes aimed at fostering the welfare of a country and its population. The population census, by providing comparable basic statistics for a country as a whole and for each administrative unit and locality therein, can make an important contribution to the overall planning process and the management of national affairs. Population census results are also used in policy development and in management and evaluation of programmes in such fields as education and literacy, employment and manpower, family planning, housing, maternal and child health, rural development, transportation and highway planning, urbanization and welfare. Further and more specific examples are given, along with references to appropriate manuals and guidelines, in part three, chapter IX, and in annexes I and II.

1.21. One of the most basic administrative uses of census data is in the demarcation of constituencies and the allocation of representation on governing bodies. Detailed information on the geographical distribution of the population is indispensable for this purpose. Certain aspects of the legal or administrative status of territorial divisions may also depend on the size of their populations.

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[2] See, for example, *Handbook on Social Indicators*, Studies in Methods, No. 49 (United Nations publication, Sales No. E. 89.XVII.6).

[3] Studies in Methods, No. 31 (United Nations publication, Sales No. E.83.XVII.13).

[4] Studies in Methods, No. 15 (United Nations publication, Sales No. E.69.XVII.15).

[5] Studies in Methods, No. 28 (United Nations publication, Sales No. E.79.XVII.17).

[6] Studies in Methods, No. 54 (United Nations publication, Sales No. E.92.XVII.8), particularly paras. 50 - 59.

[7] For a fuller discussion of many of the technical and policy issues that arise in the construction and use of integrated statistical databases, see *The Development of Integrated Data Bases for Social, Economic and Demographic Statistics*, Studies in Methods, No. 27 (United Nations publication, Sales No. E.79.XVII.14).

(b) Uses for research purposes

l.22. In addition to serving specific governmental policy purposes, the population census provides indispensable data for the scientific analysis and appraisal of the composition, distribution and past and prospective growth of the population. The changing patterns of urban rural concentration, the development of urbanized areas, the geographical distribution of the population according to such variables as occupation and education, the evolution of the sex and age structure of the population, and the mortality and fertility differentials for various population groups, as well as the economic and social characteristics of the population and the labour force, are questions of scientific interest that are of importance both to pure research and for solving practical problems of industrial and commercial growth and management.

(c) Uses for business, industry and labour

1.23. In addition to those uses given above, the census has many important uses for individuals and institutions in business, industry and labour. Reliable estimates of consumer demand for an ever-expanding variety of goods and services depend on accurate information on the size of the population in subnational areas and its distribution at least by sex and age, since these characteristics heavily influence the demand for housing, furnishings, food, clothing, recreational facilities, medical supplies and so forth. Furthermore, the local availability of labour for the production and distribution of such commodities and services may be important in determining the location and organization of enterprises.

2. Uses of housing censuses

(a) Uses for development of benchmark housing statistics

1.24. The Statistical Commission at its ninth session directed the attention of national statistical services to the need to develop, from housing censuses, the sort of benchmark statistics in housing that could be supplemented by current building and construction statistics and which would provide a continuous up-to-date picture of the housing position needed for the consideration of housing programmes.[8] Since not all the basic information required to assess housing needs or to formulate housing programmes can be obtained through a housing census, additional data must be obtained through the population census, special housing surveys and environmental surveys and from vital statistics, economic statistics and so forth; but data obtained from the housing census will constitute the basic framework within which the estimates are made, indices computed and further statistical inquiries planned.

(b) Uses for the formulation of housing policy and programmes

1.25. The formulation of housing policy and programmes represents one of the principal uses of housing census data. Housing policy is normally influenced by social and economic as well as political considerations and available factual data concerning the housing situation provide objective criteria, which it is important for policy makers to take into account.

1.26. In most countries, housing programmes encompass both governmental and private activity. The data derived from a housing census are used by governmental authorities for making an analysis or diagnosis of the housing situation.[9] Housing conditions are analysed in quantitative and qualitative terms and data from previous censuses are used to indicate the changes in the housing situation that have occurred during the intercensal periods; the housing deficit and future housing requirements are estimated and compared with the rates of dwelling production being attained; the characteristics of the households in need of housing are considered in relation to the availability and cost of housing. As part of overall development plans, such an analysis is necessary for the formulation of national housing programmes and for their execution.[10]

1.27. Commercial users also study housing census data. Those engaged by the construction industry as well as financing institutions and manufacturers of housing fixtures and equipment and household appliances assess the possible demand for housing and perceive the scope of their activities within the overall programme.

3. Relationship between the population census and the housing census

1.28. An especially close association exists between population censuses and housing censuses. The two censuses may

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[8] *Official Records of the Economic and Social Council, Twenty-second Session, Supplement No. 7* (E/2876), para. 117.

[9] For some statistical indicators for measuring housing conditions, reference may be made to *Statistical Indicators of Housing Conditions*, Studies in Methods, No. 37 (United Nations publication, Sales No. 62.XVII.7) and to *Handbook on Social Indicators*, Studies in Methods, No. 49 (United Nations publication, Sales No. E.89.XVII.6).

[10] *Improving Social Statistics in Developing Countries: Conceptual Framework and Methods*, Studies in Methods, No. 25 (United Nations publication, Sales No. E.79.XVII.12).

constitute one statistical operation or they may be two separate but well-coordinated activities, but in either case they should never be considered completely independently of each other because essential elements of each census are common to both. For example, an essential feature of a population census is the identification of each occupied set of living quarters and of the persons living therein, and an essential feature of a housing census is the collection of information on the characteristics of each set of living quarters in association with the number and characteristics of its occupants.

1.29. In many countries, the population and housing censuses are taken concurrently, often with the use of a single schedule. In this way, the information on population and living quarters can be more readily matched, processing is facilitated and extensive analysis can be carried out. This also makes it possible to relate to the housing census data the information on demographic and economic characteristics of each household member that is routinely collected in the population census. If the population census cannot provide this information, it has to be collected in the housing census.

1.30. The advantages of simultaneous investigation may be offset to some extent by the additional burden on the respondent and the enumerator resulting from the increased amount of information that must be collected at one time. In countries where this is likely to be a serious problem, consideration might be given to collecting data for a limited number of topics on the basis of a complete enumeration in the population and housing census, with more complex data in both fields being collected on a sample basis only, either concurrently with or immediately following the full enumeration. Alternatively, consideration might be given to carrying out the housing census as part of the advance-listing operations of the population census.

1.31. The relationship between the population and the housing census will affect the means by which data on homeless persons are obtained. In the case of simultaneous censuses of population and housing, data on homeless persons will be obtained as part of the population census. Where the housing census is carried out independently of the population census, it will be necessary to try to enumerate homeless persons in the housing census.

4. Relationship of population and housing censuses to intercensal sample surveys

1.32. The rapidity of current changes in the size and other characteristics of populations and the demand for additional detailed data on social, economic and housing characteristics that are not appropriate for collection in a full-scale census have brought about the need for continuing programmes of intercensal household sample surveys to collect current and detailed information on many topics. Sometimes such a sample inquiry may be the only means of obtaining benchmark housing data.[11]

1.33. The population and housing census can provide the frame for scientific sample design in connection with such surveys (see paras. 1.315-1.317); at the same time, it provides benchmark data for evaluating the reasonableness of the overall survey results as well as a base against which changes in the characteristics investigated in both inquiries can be measured. To permit comparison of census and survey results, the definitions and classifications employed should be as nearly alike as possible, while remaining consistent with the aims of each investigation. Because of the relative permanence of living quarters, the lists available from the housing census (with suitable updating) may also provide a convenient frame for carrying out inquiries dealing with topics other than population and housing.

5. Relationship of population and/or housing censuses to other types of censuses and other statistical investigations

(a) Census of agriculture

1.34. Neither population nor housing censuses have as close a relationship with agricultural censuses as they have with each other. As the result, however, of increasing integration within programmes of data collection, the relationship between the population census and the agriculture census is now far closer than in the past even though the two censuses use different units of enumeration. (The unit of enumeration in agricultural censuses is the holding, which is the techno-economic unit of agricultural production; the units of enumeration in population censuses are the household and the individual within the household.) On the other hand, this development does not imply an attempt to combine population and agricultural censuses into a single field operation. Such a combined operation is likely to place so great a burden on the field staff that the quality of data will be seriously affected.

1.35. Beginning with the *Programme for the 1980 World Census of Agriculture*,[12] the collection of information on the

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[11] *Handbook of Household Surveys (Revised Edition)*, Studies in Methods, No. 31, United Nations, New York, 1983 (United Nations publication, Sales No. E.83.XVII.13).

[12] Food and Agriculture Organization of the United Nations (FAO) Statistics Series, No. 1 (Rome, 1976); and *Collecting Statistics on Agricultural Population and Employment*, FAO Economic and Social

total number of persons living on agricultural holdings is no longer recommended in agricultural censuses, since the data needed on agricultural employment and the agricultural population may be better obtained through population censuses and household sample surveys of various kinds. Accordingly, the *Programme for the World Census of Agriculture 2000*[13] recommends that agriculture censuses cover (*a*) the collection of limited data on demographic characteristics and economic activity of members of the holder's household, (*b*) the collection of information on the number and sex of hired permanent agricultural workers for each holding and (*c*) an indication of whether or not occasional agricultural workers are utilized on the holding.

1.36. Users of agricultural census data will therefore be dependent on population censuses (and household and other sample surveys) for providing data on persons engaged in the agricultural industry and those engaged in an agricultural occupation. It should be realized, however, that the population census, particularly if it investigates only the principal economic activity of each person during a short time-ref-erence period, may not identify persons connected with agricultural activity only incidentally during the period and will not identify persons who worked in agriculture only during some other period of the year.

1.37. Countries may therefore wish to consider the possibility of adding to their population census a question enabling them to identify persons who did some work in connection with agriculture over a longer time-reference period, even though their principal or secondary activity during the shorter time-reference period was non-agricultural. Because of the difference between the units of enumeration in population and agricultural censuses, however, the population census cannot be expected to provide the information needed to allocate the persons thus identified to a particular holding. Furthermore, countries may find it more appropriate to investigate incidental agricultural work through sample surveys; such surveys are more suited to detailed investigation which would overburden the population census.

1.38. The population and housing census can, in addition to providing data on persons directly engaged in agricultural employment, also provide data on the agricultural population. The concept of the agricultural population encompasses the total population dependent on agricultural employment. It may be approximated by tabulations of all persons in households whose head (or reference person) is employed in an agricultural occupation.

1.39. As emphasized also in the *Programme for the World Census of Agriculture 2000*, it is important that the relevant definitions used in agricultural censuses and those used in population and housing censuses be compatible so that the results of the agricultural census and those of the population census and/or the housing census can be used jointly, taking advantage of database capabilities.

1.40. Population and housing censuses can also be of use in the preparation of an agricultural census. Information from a recent population and/or housing census can be utilized in the demarcation of enumeration areas, the preparation of the frame for the census or the design of the sample if a complete agricultural enumeration is not undertaken. In planning for a population and housing census, consideration might be given to the possibility of collecting some agricultural information that would facilitate the preparation of a subsequent agricultural census. For example, the population and/or housing census may serve as a convenient means of identifying agricultural holdings or at least holders for a subsequent census of agriculture. The housing census also provides an opportunity to collect data concerning small-scale agricultural activity that has been carried on in cases where the area in question would not fall within the definition of an agricultural holding. These data sometimes refer to the keeping of poultry, bees and so forth.

1.41. If, in an agricultural census, there is a desire to collect information on some demographic or social characteristics of the persons engaged in agricultural work, it will be useful to employ the same definitions and classifications of those characteristics as are used in the population census, in order to permit as high a degree of comparability as possible between the results of the two censuses. In some cases, the utilization of supplementary sample surveys in connection with either census may serve to provide the desired information on the relationship between the characteristics of the population of the holdings and the characteristics of the holdings themselves.

(b) Census of establishments

1.42. Although the collection of information on industrial and commercial establishments does not constitute a part of the population census, some of the information that is collected regarding economic characteristics of individuals can be used for preparing listings of the proprietors of such establishments and/or of the establishments themselves. Experience shows that these listings can be used in a subsequent census of establishments or for supplementing the registers of establishments maintained by most countries and utilized in their establishment

Development Papers, No. 7, (Rome, 1978).

[13] FAO Statistical Development Series, No. 5 (Rome, 1995).

censuses. Since most of the registers cover at the least all establishments in which more than a minimum of persons (for example, 5 or 10) are employed, it is usually necessary to obtain information only through the population census on smaller establishments, particularly those operated by self-employed persons; but it is essential that the information from the population census be available shortly after the enumeration is carried out because this kind of information can become out of date rather quickly.

1.43. The population census information needed for these purposes is the industry and the status (as employer, employee, own-account worker and so on) of economically active persons, the name and address of their establishment (if any) and (for employers) the number of employees. If all of this information appears in the census questionnaire, the data for small employers and own-account workers can be extracted from the schedule or from the processing documents after the enumeration. If only industry and status appear on the schedule, the remaining information may be obtained from the desired group at the time of the population census enumeration and entered in a separate schedule.

(c) Census of buildings

1.44. Since it is necessary, as part of the housing census operation, to inquire concerning all buildings (both residential and non-residential) in order to ascertain whether or not they are occupied, it may be convenient to record information for all buildings at the time of the housing census, even though data may be collected only for those in which housing units or other sets of living quarters are located. The comprehensive list thus obtained sometimes provides the basis for a census of buildings, carried out concurrently with, or subsequent to, the housing census, or it may provide for the identification of special types of buildings significant for other inquiries, such as the census of establishments or the school census.

(d) System of current housing statistics

1.45. Current housing statistics refer to housing activity. They reflect the number of dwellings constructed and certain related information such as value, number of rooms, floor space, and so forth, as well as number of dwellings destroyed or demolished. These data are usually obtained from a system of data collection based on the administrative procedures required in connection with the activity in question. For example, construction statistics may be derived from permits issued for the construction of dwellings, from records of dwelling starts or completions, or from certificates of occupancy. Statistics on dwellings destroyed may be obtained from the records maintained for the levying of rates and the collection of taxes. Compiled monthly or quarterly, current housing statistics reflect changes in the housing inventory and, although they may serve other purposes, they are also used to update the benchmark data obtained from housing censuses.

(e) Civil registration and vital statistics

1.46. Population census data serve as denominators for the computation of vital rates, especially rates specific for characteristics normally investigated only at the time of the census. Conversely, census results, time-adjusted by vital and migration statistics, can provide estimates of the future size, distribution and other characteristics of the population of the total country and subnational areas. Furthermore, census data on fertility can provide a benchmark check on the reliability of current birth statistics, and vice versa. It is consequently desirable that procedures for the collection of population census data, vital statistics and migration statistics be closely coordinated with regard to coverage, concepts, definitions, classifications and tabulations.

1.47. It may be noted that some countries have linked individual census returns for infants under one year of age with birth registration reports for the year preceding the census date as a means of checking on the completeness of one or the other type of investigation. Linkage of death reports with census returns has been used to compare the information on characteristics of the deceased as reported in the two sources. While the many problems posed in the past by the one-to-one matching of two types of records have not been entirely solved, their severity has been mitigated by developments in computer technology. Before under-taking either of the procedures, however, countries should consider carefully the possible advantages of using household sample survey returns rather than census returns in the operation. Moreover, such operations have to be carried out in complete accord with national laws and policies governing the confidentiality of information obtained in the census if public confidence in the census is to be maintained.

1.48. In the establishment of a vital registration system, census results on the geographical distribution of the population can be useful in the consideration of appropriate locations for registration offices.

6. Relationship of the population census to continuous population registers

1.49. Population censuses have been used in some countries as the starting point for the establishment of a continuous population register. Such an effort has little justification, however, from a statistical viewpoint unless adequate and tested facilities, including a comprehensive and complete civil

registration system for live births and deaths, are available for continuously updating the population register. In addition, some countries with a well-established population register have used this register as the source of data traditionally derived from a population census. However, unless the population register is known to be complete and is functioning smoothly, countries should continue to view the population census as the primary source of benchmark population statistics. If a register is already in operation, results of subsequent censuses can be compared with register data as a check on the accuracy of both census and register. To the extent permitted by national laws and policies relating to the confidentiality of census and other data, information from one source can be transferred to the other, after the investigation and resolution of discrepancies.[14]

[14] *Methodology and Evaluation of Population Registers and Similar Systems*, Studies in Methods, No. 15 (United Nations publication, Sales No. E.69.XVII.15).

II. Planning, organization and administration of population and housing censuses.

1.50. The present chapter deals primarily with the operational aspects of population and housing censuses and the very lengthy and detailed preparations that must be made in order to take such censuses successfully. Because of the technical and administrative complexities involved, the principles of census management provided below should be considered a review of the points to be taken into account in planning and executing a population and housing census rather than a comprehensive treatment of the subject.

1.51. A population and housing census (or a population census by itself) is perhaps the single most extensive, complicated and expensive statistical operation, consisting of a complex series of interrelated steps, that a country undertakes. Some of these steps, for example, the printing of the census questionnaires, may be massive in scale; other steps, for example, the training of the supervisory staff, must be carried out in a uniform manner in all parts of the country; and still others, for example, the actual enumeration, must incorporate both features.

1.52. To ensure that the diverse operations occur in their proper sequence and in a timely manner, the entire census and its various component steps must be planned for carefully in advance. An apparently minor oversight in planning may lead to serious defects in the census results and to costly inefficiencies in the census operations. Careful planning is therefore critically important to a successful census, not only in countries with comparatively little statistical experience but also in those with a well-developed system of statistics. Coupled with the need for careful planning is the need for appropriate organizational and administrative arrangements and procedures. Such arrangements and procedures are necessary to ensure both that the extensive human and material resources mobilized for the census are effectively and efficiently used and that its very tight time schedules and massive logistic requirements are met.

1.53. It must be stressed, however, that at each stage of census planning and implementation, the various administrative arrangements developed will need to be guided by sound technical considerations. The quality and timeliness of the census data will almost certainly suffer unless sufficient weight is given throughout the census to a wide range of subject-matter and statistical requirements. It is for this reason that the management of a large statistical operation, and especially a population and housing census, cannot be considered a routine administrative assignment.[15]

1.54. All censuses do not follow a uniform pattern but there are certain major elements that must be taken into account in every one of them. In general, census operations can be divided into six phases: (*a*) preparatory work, (*b*) enumeration, (*c*) data processing, (*d*) building of needed databases and dissemination of the results, (*e*) evaluation of the results, and (*f*) analysis of the results. In addition, distinct sets of operations related to the systematic recording of census experience and the quality control and improvement programme must accompany and support the main census operations. It will be readily apparent that these phases are not entirely separate chronologically or mutually exclusive. For example, some census results are usually released before all data-processing activities are completed; the analysis and the dissemination of census results overlap quite extensively; and the systematic recording of census experience should start at the beginning of the preparatory work and continue through all the subsequent phases. Furthermore, certain elements that are discussed below under Preparatory work, such as the budget and staff, may have to be amended according to the circumstances arising at a later stage of operations. The elements of each of these phases are discussed below in terms of their implications for sound census management.

1.55. When the housing census and the population census are carried out together, the planning, organization and administration of the two censuses should be considered separate aspects of a single, integrated field and processing operation, that is, the separate technical requirements of each census have to be taken into account in planning and carrying out the combined operation. A combined population and housing census will be more costly and complex than each census considered by itself but less expensive than the total operation of carrying out both censuses independently. Moreover, the combined census will be capable of providing a greater wealth of cross-tabulations than both censuses carried out independently. Each country will have to decide on the trade-offs involved in light of its own needs and

[15] For a discussion of statistical management generally, see *The Organization of National Statistical Services: A Review of Major Issues*, Studies in Methods, No. 21 (United Nations publication, Sales No. E.77.XVII.5) and *Handbook of Statistical Organization, A Study on the Organization of National Statistical Services and Related Management Issues*, Studies in Methods, No. 28 (United Nations publication, Sales No. E.79.XVII.17).

circumstances (see also paras. 1.28-1.31). However, from the perspective of overall census planning and management, the decision is not a critical one. Whether the census is a combined operation or a separate population or housing census, the basics of census planning, organization and administration as described below remain unchanged, except for the added cost and complexity of the combined operation.

A. Preparatory work

1.56. The preparatory work for the census is necessarily long in duration and involves many quite distinct activities. For purposes of presentation, these preparatory activities are divided into 17 somewhat arbitrary elements:

1. Legal basis for a census (paras. 1.57 and 1.58)
2. Budget and cost control (paras. 1.59-1.63)
3. Census calendar (paras. 1.64-1.68)
4. Administrative organization (paras. 1.69-1.72)
5. Communications activities, including consultations with users and census publicity (paras. 1.73-1.76)
6. Plans for the quality control and improvement programme (paras. 1.77-1.78)
7. Cartographic (mapping) work (paras. 1.79-1.97)
8. Small-area identification (paras. 1.98-1.106)
9. Living quarters and household listing (paras. 1.107-1.110)
10. Tabulation programme (paras. 1.111-1.113)
11. Questionnaire preparation (paras. 1.114-1.118)
12. Census tests (paras. 1.119-1.121)
13. Plan of enumeration (paras. 1.122-1.124)
14. Plans for data processing (paras. 1.125-1.128)
15. Plans for dissemination (paras. 1.129-1.132)
16. Staff recruitment and training (paras. 1.133-1.138)
17. Avoiding gender biases and biases affecting data on minority populations (paras. 1.139-1.142).

1. Legal basis for a census

1.57. Legal authority for the census is required for fixing primary administrative responsibility, for obtaining the necessary funds, for determining the general scope and timing of the census, and for placing a legal obligation upon the public to cooperate and give truthful answers and a legal obligation upon the enumerator to record the responses faithfully. In addition, the confidentiality of the individual information should be strongly and clearly established in the census legislation and guaranteed by adequate sanctions so as to provide a basis for the confident cooperation of the public. In countries that lack permanent legal authority for the taking of periodic censuses, it is important to act early to establish ad hoc legal authority or, preferably, legislation calling for a system of periodic censuses.

1.58. The principle of conceptual and organizational flexibility should be observed in drafting the census legislation. Thus, the inclusion of too rigid provisions regarding the type of data to be collected or the structure and relationships of the various parts of the census organization is undesirable. Rather, necessary details should be contained in the census regulations promulgated by the census authorities. Moreover, provision will have to be made, in either the legislation or the regulations, for sanctioning the use of simplified administrative procedures, including the appropriate delegations of authority for the procurement of equipment and supplies and the recruitment of personnel during the operational phase of the census.

2. Budget and cost control

1.59. No universal system of census budgeting and cost control can be suggested since financial practices vary greatly among countries. However, a few generally accepted principles can be noted. Effective planning and control of the various census operations are not possible without a very careful financial estimate of the cost of each census operation, including all of its components, no matter how small.

1.60. Information on expenditures from the previous census classified by census phases, starting with the expenditure for different elements of the preparatory work and ending with expenditure for the dissemination of the census results, provides an important basis for estimating the budget of the census. Figures from the previous census will of course have to be modified in order to take into account quantitative and qualitative change in hardware and software, changes in wage rates and the costs of equipment, supplies and so on, planned changes in census content, methods and procedures, and anticipated changes in the population itself (for example, total size, percentage urban, and average household size), all of which may affect the cost structure of the census. In most countries, several cost elements tend to increase (for example, wage rates and the size of population) so that there is considerable pressure to achieve economies in other items of the census budget.

1.61. To obtain the information needed to monitor the costs of the current census and that needed to plan for the next, detailed and precise data will be required on the following: (*a)* number and cost of census staff classified by function and manner of payment; (*b*) type of equipment and material used for the census, manner of acquisition (in other words, purchase or rental) and cost; (*c*) office space (surface measurement), classified by use and type of cost (in other words, for construction or for rent); (*d*) type of services used for census operations. The usefulness

of the above information would be enhanced if the information could be recorded by source of funding, in other words, in terms of whether the expenditure has come from (*a*) the official census budget; (*b*) other funds of the census office (for example, a regular annual budget not specifically intended for census purposes, or general funds of the governmental agency or department of which the census office is a part); (*c*) other parts of the Government; (*d*) non-governmental organizations. This information is needed not only for fiscal planning and control but also in order to examine the trade-offs in terms of costs and benefits among alternative ways of carrying out various census operations. Although cost experience from a previous census in a country may provide useful experience for planning the next census, considerably more caution should be exercised in using the cost parameters from other countries. Differences in census content, organization and operations, as well as in cost accounting, can introduce serious incompatibilities into such country-to-country cost comparisons.[16]

1.62. It is important that the persons at the administrative and supervisory levels who will be responsible for the execution of each operation participate in estimating the budget items. Such an organization of the work presupposes detailed advance planning and "cost-consciousness" on the part of those responsible for a census.

1.63. The census plan as executed will certainly change in a number of respects after the making of the original calculations. Consequently, a perfect correspondence between the estimates and the final costs is not to be expected. Indeed, the development of the census budget is usually an incremental process in which rough initial estimates are replaced by more detailed and precise statements of resource requirements. Throughout the period of census-taking and compilation of census results, the budget will have to be re-examined and performance compared with plans. With detailed information on expenditure, the governmental and census authorities will be better able to exercise control over keeping the development of census operations within the census budget as well as to assess and control the effectiveness and efficiency of these operations. This information is also very useful for studying possible improvements in census techniques and census methodology.

3. Census calendar

1.64. An indispensable element in the planning of a census is a calendar or timetable indicating the sequence and estimated duration of each of the component operations of the census. At the early stages of census planning, a provisional calendar of selected key dates should be prepared as an overall framework for the census. The calendar should be revised and made more detailed as planning proceeds, with the aim of establishing final dates as soon as practicable.

1.65. Such calendars are essential, since they indicate the dates on which each of the numerous operations that make up a census are to be started and completed, and they serve as a guide for measuring the progress of each stage of the census operation. Serious delays in work, or errors in time estimates, can be detected by comparing the calendar target dates with the actual dates of each operation. A census calendar is a very efficient instrument not only in the timing control of each census operation but also in the control of the complex of all census operations that are interdependent. Therefore, when modifications in the census timetable are necessary, all related operations should be taken into consideration in order to avoid disruptions in the whole census programme. Obviously, the time schedule will differ for each national census depending upon the general census plan and the resources that are available.

1.66. The census calendar usually shows the various operations grouped into three broad sectors: (*a*) pre-enumeration, (*b*) enumeration and (*c*) post-enumeration. The last-named sector includes evaluation and analysis as well as processing and dissemination. The basic date on which the census calendar and the scheduling of all other operations hinge is the starting date for the general enumeration of the population. For purposes of control, many operations that in fact overlap are shown separately in the calendar. Census calendars sometimes take the form of a chart or graph, in addition to a detailed checklist of operations. Project management software may help in the preparation of the census calendar.

1.67. In establishing the census calendar, it is necessary to consider the relationship of the population and housing censuses to one another as well as to other statistical projects or other large-scale national activities. Although a joint population and housing census operation is likely to constitute, for the period of its duration, the major statistical undertaking of the Government, care should be taken that it does not interfere unduly with the other regular statistical activities that may be going on at the same time. A balanced statistical programme should avoid having too many simultaneous competing inquiries which might place too heavy a burden on the statistical services and on the public, with a possible resultant loss of both administrative efficiency and public cooperation.

[16] See United Nations Statistical Commission and Economic Commission for Europe, Conference of European Statisticians, *Costing Aspects of Population and Housing Censuses in Selected Countries in the UN/ECE Region*, Statistical Standards and Studies, No. 46 (United Nations publication, Sales No. E.96.II.E.15).

1.68. It is often useful to draw up a comprehensive diagram showing the sequence, interrelationship and timing of all the various steps in the census programme. This type of analysis often reveals the consequences of a delay at one step in terms of delays at other steps in the programme. It can therefore be a useful instrument against which the actual progress of the census preparations may be compared. Indeed, some countries have attempted to use such critical path analyses not only as an aid to census planning but also as a tool for the ongoing management of their census operations. In these instances, it is essential to establish procedures for revising the critical-path analysis in response to actual progress. It should be stressed, moreover, that the usefulness of such devices depends on how soundly they are designed, applied and understood.

4. Administrative organization

1.69. In planning the organization and administration of a census, it is important to consider the role and relationship of the various executive and advisory organs. National, subnational and local commissions and committees are frequently useful in the planning and preparations of a census. Such bodies may be composed of representatives of governmental agencies and of non-governmental users of the census data, particularly those involved in policy-oriented analysis of census results and analytical studies of the social, economic and demographic situation of the country. It is important, however, that their advisory and promotional functions be clearly defined and that the final responsibility for planning rest with the executive agency.

1.70. There are definite advantages in having an office continuously responsible for census work established as an integral part of the statistical system of a country. Such an office assures continuity in census work and is the principal centre for the formulation of the programme and the initiation of preparatory work for the next census. Its permanence permits the development of specialized and experienced personnel and the maintenance of statistical and cartographic information essential for planning the next census.

1.71. At the pre-enumeration stage, the census office will need to be expanded to form the nucleus of the full census organization, which must be capable of directing the field organization during the preparatory work as well as during the enumeration. In order to provide immediate supervision in each area, field offices at various levels are needed for the later part of the preparatory work, including staff recruitment and training, as well as for the enumeration period. Supervisory personnel in such offices should be persons who, being familiar with the particular area and the local language, are able to deal with local problems. This does not mean, however, that all supervisory positions must be filled by persons from the area. Personnel may be transferred from the central office or from other areas as the need arises.

1.72. Subsequent to the enumeration, the census organization is usually readjusted to meet the needs involved in compiling, evaluating, analysing and publishing the results and to provide the continuity desirable for promoting the continued use of census materials and the development of improved methods.

5. Communications activities, including consultations with users and census publicity

1.73. A comprehensive programme of communications for a population and housing census covers three distinct audiences: (*a*) major users of census data, (*b*) persons and institutions participating in the census operations and (*c*) the general public. Since the census is a national activity that is completely dependent for its success upon the wholehearted cooperation and assistance of the general public and many governmental and local organizations, the entire communications effort should be developed as a coordinated activity in close conjunction with the other substantive preparations for the census. These communications activities are valuable not only for informing others about the census but also for providing census authorities with early and continuing information about the reactions to census plans and activities of the general public in various parts of the country and of key persons, groups and institutions.

1.74. Consultation with users of census data on topics, on definitions and, particularly, on planned tabulations and the development of the census database is an indispensable step in the preparations for the census that should be taken early. These consultations will assist the census authorities in planning for a census that, within the resources available, is as responsive as possible to user needs in terms of the collection, processing, tabulation, storage and availability of meaningful data. Such consultations can also serve to foster a wider and more informed understanding of and support for census plans and activities. The users to be consulted should be from governmental departments, ministries, universities and other research institutions, the private sector, and other organizations (or individuals) representing the economic, social, educational and cultural life of a country. It is often more useful to hold separate consultations with different types of users with common interests, such as administrators, policy makers, planners, demographers, researchers, users in the business community and so forth, rather than a simultaneous meeting of all data users. Such combined meetings frequently prove frustrating to participants because there are substantial

differences among users in their technical background and in their concern with the details of census content and operations. Because of the importance of the census in providing data for local planning and administration, it is also often advisable to have consultations with users in provincial and local governments and institutions in various parts of the country. Particularly in large countries or countries where the provincial or local governments have a comparatively high degree of autonomy, consultations with users at the subnational level is essential if the full potential of the census is to be achieved (see also part three, chap. VII, particularly paras. 3.6-3.11 on Dialogue between users and producers).

1.75. In order to complete the preparatory work for the census and to carry out the census enumeration itself, the census office will have to expand its staff substantially. In addition, numerous governmental and non-governmental organizations outside the census office may be called upon to provide personnel, equipment, supplies, space, transportation or communications facilities and so on to help in the census work. As a result, large numbers of temporary personnel will have to be trained (see paras. 1.133-1.138) and the contributions of a diverse group of national and local organizations will have to be effectively mobilized. A well-planned communications programme can contribute to both efforts.

1.76. Arranging the publicity for the census is another of the important tasks in the census operation. This entails an educational campaign, the purpose of which is to enlist the interest of the general public and its cooperation. The aims, as a general rule, are not only to dissipate any anxiety regarding the purposes of the census but also to explain the reasons for the various questions in the questionnaire and to offer some guidance as to the manner in which these questions should be answered. The publicity campaign may also be an important tool for increasing the completeness of census coverage, particularly among hard-to-enumerate groups. It is desirable that planning for the general publicity campaign should start as soon as the census is authorized. The campaign itself should be closely synchronized with other census activities and full-scale publicity should not begin too far in advance of the date on which enumeration is scheduled to start. Plans for the publicity programme should be closely coordinated with those for the census tests (see paras. 1.119-1.121). The programme will have to provide the publicity needed to carry out the census tests. In addition, the programme can use these tests to study the impact of alternative publicity materials and methods. If either the cartographic or house-listing operations require extensive fieldwork and widespread contacts with the public, it should be recognized that personnel involved in these activities often provide the public with its first impression of the census. Training and publicity programmes should take this factor into account. The general campaign should be directed to all sections of the country and all segments of the population through the use of all available publicity media. The general campaign may be supplemented by a number of specialized campaigns aimed at specific segments of the population.

6. Plans for the quality control and improvement programme

1.77. Most countries conduct population and housing censuses, once in 10 years. Thus current experience is limited. Moreover, numerous activities that compose the census operation have to be carried out in a limited time period. This means that countries must employ a large number of persons for census work for a few weeks or months. Usually a different set of persons are employed on a temporary basis for each of these operations. As a result, the quality of work is likely to vary from person to person, from one area to another and from one time to another. It is therefore important to be able to measure how well each census operation is proceeding by building in quality control procedures throughout the census. It should be stressed that a major goal of any quality control programme is to detect errors so that remedial actions can be taken even as the census operations continue. Thus, a quality control programme should also be viewed as a quality improvement programme. Without such a programme, the census data when finally produced may contain many errors which can severely diminish the usefulness of the results. If data are of poor quality, decisions based on these data can lead to costly mistakes. Eventually the credibility of the entire census may be called into question.

1.78. The quality control and improvement system should be developed as part of the overall census programme, and integrated with other census plans and procedures. The system should be established at all phases of census operations, including planning, pre-enumeration, enumeration, document flow, coding, data capture, editing, tabulation and data dissemination. Establishing a quality control and improvement system at the planning stage is crucial to the success of the overall census operations. For a more extensive discussion of the components of a quality control and improvement programme, see paragraphs 1.143-1.164 below.

7. Cartographic (mapping) work

1.79. Adequate maps are needed to help in the planning and control of census operations, and in the tabulation, presentation, analysis and dissemination of census results. For example, reasonably up-to-date maps are needed to set up enumerator

assignments, estimate travel time and costs, establish field offices, assign geographical codes, determine the best route of travel to and within enumeration areas, measure distances and enable the field staff to locate an enumerator or find a specific housing unit when a return trip is necessary. They also serve as a mechanism for showing the progress of the fieldwork. When presenting and analysing results, maps may be used effectively to relate statistical data to the geographical area to which the census results refer. This makes the statistics easier to understand and more readily usable by the general public.

1.80. Thus the determination, for the purpose of the census, of the national and internal boundaries of the territory and detailed subdivisions, is one of the basic and most important census operations and one that generally consumes a considerable part of the time and effort invested in the pre-enumeration stage.

1.81. All available maps that are known to be accurate should be screened and utilized and new maps should be prepared as required. Several different kinds of maps are needed for census planning, such as (*a*) national maps (maps of the entire country on a relatively small scale) showing major administrative divisions, major physical features and the location of cities and towns; (*b*) planimetric or topographic maps on a relatively large scale; (*c*) maps of major administrative divisions or regions showing levels of subdivisions and location of places; (*d*) city and town maps, which are normally large-scale maps showing all roads and streets; and (*e*) special maps illustrating the distribution of physical features, population, transportation and the like. Not all of these types of maps may be available or up to date or accurate. Nevertheless, whatever maps are available will be useful.

1.82. When existing maps and boundary information are not complete or some features are not shown accurately, it is necessary to introduce revisions. When maps require extensive revision or when poor-quality line-work will not reproduce well, redrafting is necessary. Where detailed maps do not exist, it is necessary to sketch or draft them (such work can be done only in the field by trained staff). Aerial photography or satellite imagery may also be a useful source of information in these situations. It is usually not possible to finance such expensive undertakings within the census budget. However, census authorities may find it possible to use photographs or imagery obtained in connection with various non-statistical programmes.

1.83. In addition, when field enumeration, in contrast with exclusive reliance on a mail-out/mail-back census, is used, the whole of the country should be divided into clearly defined *enumeration areas* (EAs) of a size - in terms of both number of households and of physical distances - suitable for coverage by a single enumerator. The prevention of omissions and duplications in the enumeration depends to a very large extent on the proper delimitation of the enumeration areas. This delimitation is dependent in turn upon the accuracy of the detailed maps available. A group of enumeration areas can be designed to form a *supervision area* (SA).

1.84. Without such maps, field staff have to rely entirely on an address list, written or verbal descriptions and directions or on local knowledge of the area boundaries. Reliance on verbal description or local knowledge very often leads to confusion and error because people tend to have mental images (or mental maps) of places and these images may not coincide with the area as it really is. For the same kind of reason, the supervisor's mental map of an enumeration area may differ markedly from that of an enumerator. Because census maps provide a realistic picture of the area, they are essential to the data-collection operations, although they can be usefully supplemented by other descriptive material.

1.85. To carry out all the mapping tasks required for accurate and useful censuses (and other statistical activities), a formal ongoing mapping programme should be established. Failure to implement this important effort during early stages of the census can endanger the final results. It is necessary to start cartographic work sufficiently early to ensure that an adequate supply of maps is available three to four months before the census is scheduled to begin. Mapping tasks undertaken too late or with insufficient planning will almost surely result in a lack of maps or in the production of maps that are inadequate for the enumeration of critical areas. For population and housing censuses, the lead time for mapping should be at least two or three years even when there is an ongoing mapping programme.

1.86. The best census maps will be of limited value unless the field staff responsible for enumeration is trained to use them properly. Training may involve the provision of direct instruction to the field supervisors by members of the geography staff, or the preparation of instructions on map reading and use of maps for inclusion in the manual for training enumerators.

1.87. It will be most helpful if the concerned governmental authorities freeze the boundaries of various administrative units at least six months in advance of the census date so that no further jurisdictional changes are effected until the enumeration is over. This is of considerable help in delimiting enumeration areas, minimizing chances of omission or duplication and disseminating preliminary census results quickly.

1.88. The time and expense involved in preparing and checking maps and in the careful drawing of enumeration areas are further justified by subsequent use of the maps for other

purposes and particularly as frames for post-censal sample surveys.

1.89. In addition to the maps required for the census, a systematic, complete and up-to-date listing of localities is required. Such a listing is needed for the coding of place names and for determining to what extent data for localities will be tabulated. In some regions, the establishment of a definitive list of localities is a major operation because of difficulties arising from the frequent fragmentation, disappearance or combination of small localities, and from changes in name, variations in spelling, the existence of more than one name for the same place or the use of identical names for different places.

1.90. In countries in which particular types of living quarters predominate in readily identifiable areas, it may be useful during the preparatory work to consider these areas in relation to the boundaries of the enumeration districts being established for the census. Where the areas are clearly delineated, as is often the case, for example, with squatter areas, the preparation of subsequent housing programmes or the carrying out of special studies could be facilitated if the boundaries of the enumeration areas at the margin of these areas were so drawn as to avoid as much as possible creating enumeration areas that incorporated living quarters of widely divergent types, such as conventional dwellings and improvised housing units.

1.91. There is widespread recognition that it is important for national statistical agencies to develop a continuing cartographic capability to serve their specialized cartographic needs. Such a capability can make a major contribution to the population and housing census and, through the census, to subsequent programmes of household surveys. The availability of appropriate, reliable and up-to-date cartographic materials is an important factor in the planning and control of fieldwork and in the processing of census results. In connection with these phases of census operations, the importance must be kept in mind of close coordination between cartographic work for the population and housing census and that for the census of agriculture and other statistical inquiries. A continuing cartographic capability can also contribute to the analysis and presentation of census results.

1.92. In recent years, the satellite-based *global positioning system* (GPS)[17] and *computer-assisted mapping* have emerged as sound technologies whose application to the overall census cartographic operation can be a valuable one.

1.93. A good part of census cartographic fieldwork is devoted to the identification and plotting of villages, towns and places and to the updating of other features on the base maps. Very high accuracy in plotting places or features on the base maps at their correct locations can be achieved through the use of GPS technology. Simple-to-operate and relatively inexpensive hand-held GPS receivers can record the values of the earth coordinates of any location with high precision and in minimal time.

1.94. In a technologically advanced setting, portable computers and the GPS can be used together. The cartographer works from a vehicle, the position of which is automatically shown on the small-scale base map displayed on the computer screen. This field map can then be updated for objects not yet recorded, such as new roads or buildings, as well as corrected for apparent errors. Use of this method requires investment in equipment, and the availability of detailed computerized maps. GPS systems are most effective in rural areas and have great potential for many categories of statistical fieldwork, including agricultural surveys, and for obtaining specific locations of human settlements, community facilities and other point locations. Locations for roads, rivers and area delineations (such as administrative divisions, farms, lakes, and EAs) can also be collected using their GPS, but this requires more time and resources. Therefore, it remains unrealistic in many countries to rely on the GPS for systematic EA mapping.

1.95. Census cartographic work is a time-consuming operation. The census maps need to be duplicated and copies of the maps sent to the field for enumeration purposes. The original EA maps should be properly stored for future use or updating. Drawing and redrawing the maps, storing the hard-copy versions of the maps and future updating can also involve tedious work. Moreover, maps that are stored in filing cabinets may deteriorate and fade over time. Microcomputers with appropriate software may be used to help make the work more efficient and rapid and to produce more consistent and better-quality maps for enumeration and presentation purposes.

1.96. A computerized census mapping programme may involve two linked streams of work, namely (*a*) the acquisition of a national spatial database and (*b*) the development of a census mapping system. The national spatial database comprises

[17] Twenty-four satellites orbit 11,000 miles above the earth twice a day, transmitting their precise position and elevation. The GPS receiver acquires the signal, then measures the interval between transmission and receipt of the signal to determine the distance between the receiver and the satellite. Once the receiver has calculated these data for at least three satellites, its location on the earth's surface can be determined. The signals are received free of charge. Originally designed for military purposes, the GPS can be used by everyone taking part in a wide range of outdoor activities.

topographic data, administrative boundaries, EA boundaries and other statistical boundaries as well as their attributes such as geographical codes, enumeration information and selected census counts. The database is an asset of the statistical organization and should be designed to be easily up gradable. The census mapping system should be designed to be able perform the following functions: align EA and SA boundaries; update and redesign EA and SA maps; print maps for census enumerators and supervisors; and produce statistical maps for census planning, and monitoring as well as result presentation purposes. Mapping technology can become outdated quickly and it is important that the system be developed in such a way as not to make system upgrading a difficult and expensive process.

1.97. Particularly at the outset, capturing of maps and other data for the database is likely to be painstaking work. Nevertheless, such efforts can certainly be worth the investment, since capture of the base maps needs to be done only once. In the next and subsequent operations, the maps and other data will need only to be updated. In the long run, the application can be very cost-effective, as the need to repeat expensive cartographic work will not be required for every census undertaking. The application of computer-assisted mapping promises greater efficiency and consistency. It can enhance the pace of EA map production, ensuring the timely availability of those maps for the census, inter-censal surveys and other statistical data collection activities. It also enables the census organization to undertake the preparation and production of thematic maps for the census publication including population atlases (see paras. 3.24-3.32 on Mapping products).

8. Small-area identification

1.98. Two somewhat different methods are available to provide the census with a flexible capability for generating tabulations in terms of a wide variety of geographical aggregations including those needed for public and private sector data uses at the local level. The first method simply extends the traditional hierarchical system for coding all major and minor civil divisions so as to cover at the lowest level the enumeration area (EA), sometimes referred to as the *enumeration district*. The second method, which at greater cost permits finer geographical specificity, is usually based on some coordinate or grid system, such as that of latitude and longitude. This method is often referred to as a *geocoding system*.

1.99. Particularly in the absence of a comprehensive system of street names, numbers or similar addresses, the first method, which uses the EA as the key unit for the production of small-area data, is to be preferred. Proper administration and control of a census require that the EAs be well defined and their boundaries identifiable on the ground. It is useful to let EA boundaries coincide with natural dividing lines in the field -- not just rivers and major roads, but also limits of neighbourhoods and city blocks in urban areas. Not only does this help enumerators clearly understand the boundaries of their territories, it also prevents difficulties later on when small-area statistics have to be produced. As a rule, the EA boundaries are also traced on maps and the maps can carry the EA code numbers. The EA code numbers can then be included, along with the other geographical codes and the statistical information, at data entry. This makes it possible to produce, from the census database, any kind of recorded information for any given EA or combination of EAs at minimum cost, subject to the constraints imposed by the need to protect the confidentiality of individual responses (see paras. 1.254-1.255, on privacy and confidentiality).

1.100. The fact that census data, whether published or unpublished, are available by EA provides for considerable flexibility. Such flexibility can be of value given that the geographical divisions used by various branches of the administration or by other data users do not always coincide and may therefore require different regroupings. Moreover, when changes are planned in administrative boundaries, tabulation of census data by the planned new entities can also be facilitated through the EA approach. However, if these changes cross EA boundaries, and it is decided to try to retabulate the census according to the new boundaries, very expensive recoding of individual records may be involved.

1.101. The tabulation of population and housing characteristics by EA, which may be shown on statistical maps, is also a useful tool for analysis. On the other hand, the linkage of data from other sources is not usually possible on the EA level because of the difficulty of obtaining such information for individual census EAs. Moreover, comparison between successive censuses is possible only to the extent that EA boundaries remain unchanged.

1.102. Countries may sometimes find it useful to have even greater flexibility in the regrouping of census data into different geographical aggregations than that provided by a coding system based on the EA. In these situations, the use of some system of geocoding may be considered. The two approaches to geocoding that are of most significance for census planning are: (*a*) segment allocation and (*b*) area allocation to grid squares. With segment allocation, coordinates are assigned to nodal points (for example, street intersections) to identify segments or block faces. The grid system involves dividing the national territory into a uniform grid of squares using standard coordinates to identify the squares. Among the advantages of geocoding, particularly if based on the grid squares approach, are its permanence, clarity and uniformity,

as well as the possibility that it offers of interlinking statistics from a wide variety of sources. It must be stressed, however, that geocoding is more expensive than traditional methods of area coding and its technical prerequisites may not be present in many countries.

1.103. On the next level above the EA (or the block faces or nodes identified in a geocoding system), the situation in urban areas is somewhat different from that in rural ones. Large urban municipalities are often divided into units (quarters, wards, barrios, and so on), which may have a well-known and relatively permanent administrative status. Data tabulated by such units are of great practical value for all planning and analysis. If such area units do not exist or if they are too large for fruitful analysis, other, intermediate units may be formed for statistical purposes. These should be made as homogeneous as possible. In either case, these intermediate areas must be identified in the codes entered for each record. Possibilities for data linkage and for comparisons over time are clearly greatest for area units that have administrative status. Purely statistical areas that lack such status are the more useful the more widely they are recognized and the more permanently they are kept from census to census.

1.104. At a minimum, developing countries that are predominantly rural will certainly wish to be able to identify villages which are usually the most important local units in rural areas. In the past, however, the village has not been uniformly a higher-level geographical unit than the EA. Although no problem arises when larger villages are divided into several EAs (as long as a village identification code is included in the record), a serious problem does arise if a single EA is composed of two or more small villages. In this situation, the EA codes cannot be used to generate village statistics. It may therefore be advisable to limit each EA either to one village or to a portion of a village or to an area not included in any village, bearing in mind that an individual enumerator can always be given more than one EA to enumerate. There are other problems connected with identification and delimitation of villages, and these must also be dealt with in planning the cartographic work. Owing to the organic role it plays in rural life and development efforts in many developing countries, the village should not be neglected in census plans or in census statistics.

1.105. The statistical value of the village is further enhanced when it is possible to link census village data with village data from other sources. In many developing countries a wide range of data is compiled for each village, such as location, altitude, road connections, communications, facilities of various kinds or distances from such facilities, cultural or ethnic characteristics of the population, major industries, major crops, and so forth. The village as a unit is relatively stable but in the course of time new villages are created and old ones may disappear or merge. A village directory and its cartographic base therefore require frequent updating. The use of GPS receivers to identify real-world coordinates for establishing and maintaining a village directory has great benefits (see paras. 1.92-1.93 above).

1.106. In rural areas there may also be a need to create an intermediate statistical level between the village and the minor civil division if the former is generally too small and the latter too large for local data uses. In such cases, the intermediate units should be made as homogeneous as possible and changes in their boundaries over time should be avoided. On the other hand, it may be necessary to identify areas smaller than EA or village, particularly in the case of isolated settlements.

9. Living quarters and household listing

1.107. A list of sets of living quarters, structures containing living quarters or households that are available at the start of the census is an aid in the control of the enumeration, particularly in the absence of adequate and updated maps. Such a list is also useful for estimating the number of enumerators and the number of schedules and other census materials needed in an area, for estimating the time required for the enumeration and for compiling provisional results of the census. It is also very useful for determining the enumeration areas and for establishing necessary links between population and housing censuses when they are carried out separately.

1.108. Consideration should be given to providing permanent identification to streets and buildings, which can be used for successive censuses and for other purposes. A listing of sets of living quarters, particularly in densely settled places, cannot be made unless streets have names and buildings have unique numbers. Individual apartments in multi-dwelling buildings need to be numbered or otherwise unambiguously identified. Where these prerequisites do not exist, numbering immediately prior to the census would prove useful.

1.109. Where such information is available, it is useful to provide the enumerators with additional assistance in the form of lists of addresses to visit. Address lists will be essential if self-enumeration, whereby questionnaires are sent to the households by mail, is part of the plan. Some countries have population registers that allow more or less complete address lists to be generated relatively simply. The census can then not only use these lists, but also assist in further improving the population register by reporting any discrepancies found in the field. Where official population registers are not available, or insufficiently complete, it may be possible to obtain additional address lists from postal authorities, utility companies or the private sector (for example,

mail-order companies). A definitive list for the enumerators could then be prepared by merging the lists obtained from these various sources.

1.110. Where a good population register exists, it may be possible to pre-print the household questionnaires with information such as the names of the persons expected to be members of a household, already available from the register. This reduces the response burden, accelerates the information-gathering process, and helps to pinpoint deviations. On the other hand it might have a negative psychological effect if respondents believed that the authorities were monitoring them too closely. An approach using one or several registers as the point of departure for a census that still includes full-coverage field enumeration is sometimes called a register-based census. Differences between the register(s) and the field situation will necessarily come to light, and rules will be required to deal with such differences.

10. Tabulation programme

1.111. In most countries, the tabulation programme represents a compromise between the ideal desired tabulations and the limits imposed by practical circumstances. It is essential that the programme be outlined sufficiently early so that the procedures and costs involved may be investigated thoroughly before a final decision is reached. The testing of questionnaires will help indicate whether gathering the material desired for tabulation is a reasonable possibility. The type of questionnaire and the method of enumeration may limit the kinds and amount of data that it is possible to collect. Publication time and costs, and the data-processing resources available, will determine the number and complexity of the tabulations that can be produced within a reasonable time. The basic tabulation programme, covering all tables to appear in the published census reports, should be firmly decided soon after the content of the questionnaire is fixed in its final form. This will enable prospective census data users to make firm plans and the census data processing staff to complete all systems analysis, programming and testing work in a timely manner.

1.112. It is important to plan the tabulation programme in such a way that final results can be issued within a reasonable period of time after the enumeration and before the information has become out of date for current needs. It is desirable that the details of the tables be prepared and the order of their preparation be decided early in the planning so that the processing of the data will not be delayed.

1.113. Special tabulations may be requested at any time after the census enumeration. Once the census database has been produced by recording, editing and correcting the raw data, tabulation software packages can be introduced. These packages allow fast and relatively inexpensive production of tables for selected subsets of the total database or for alternative aggregates, assuming the information has been preserved in the database in terms of the needed detailed classifications.

11. Questionnaire preparation

1.114. The type of questionnaire, its format and the exact wording and arrangement of the questions merit the most careful consideration, since the handicaps of a poorly designed questionnaire cannot be overcome during or after enumeration. Among the many factors that should be taken into account in designing the questionnaire are the method of enumeration, the type of questionnaire, the data to be collected, the most suitable form and arrangement of the questions and the processing techniques to be employed. Many decisions regarding processing are dependent on the final content, form and arrangement of the questionnaires.

1.115. The method of enumeration (see paras. 1.122-1.124 below) governs to some extent the type of questionnaire (for example, single individual, single household or single set of living quarters, multiple household or multiple living quarters, combined population and housing) and the scope of the type of questionnaire that can be used, as well as the framing of the questions and the amount of explanatory material that must accompany them. Questions should be free from ambiguity and should not be offensive.

1.116. Special provisions will have to be made if two or more languages are used in the country. Several methods have been used to deal with this situation: a single, multilingual questionnaire, or one version of the questionnaire for each major language, or translations printed in the enumerators' manual of the questionnaire in the various languages. The problem is more serious in the case of non-written languages. Staff recruitment and training procedures (see paras. 1.133-1.138 below) will also have to take language problems into account. Information on the distribution of languages in the country is important for sound census planning and if not available, will have to be collected at some stage of the census preparations.

1.117. If the housing census and the population census are to be carried out simultaneously, it will be necessary to consider whether a single questionnaire should be utilized to collect information on both population and housing topics. If separate questionnaires are used, they should be adequately identified so as to permit subsequent matching of the data for each set of living quarters with the data that refer to the occupants thereof.

1.118. Questionnaire design should be considered jointly with the planning of the tabulation programme. This is essential if the questionnaire is to be designed to provide the information needed for the tabulations. It is also necessary inasmuch as the feasibility of the tabulation programme is to some extent conditioned by the limitations imposed by the questionnaire. The final questionnaire must be drafted in time to allow for proper training of census officials, for adequate publicity to be generated on its content and for any delays in printing.

12. Census tests

1.119. The testing of various aspects of a census plan prior to the enumeration is a very useful practice for all countries, and an essential one for countries without a long history of census-taking and for those in which fundamental changes in census methods are being considered. Census tests can be designed for different purposes and in different ways. To yield full benefits, tests should be employed for all stages of the census, including enumeration, processing and evaluation of results. Such tests can give important information on the adequacy of the field organization, the training programme, the processing plan and other important aspects of the census. They are particularly valuable in probing for weaknesses in the questionnaire, in the instructions or in enumeration procedures that might affect the quality of the data. They can be designed to provide information on the relative efficacy of alternative methods of enumeration and on the average time required for enumerating a single household or a single set of living quarters, which information is useful in estimating staff and cost requirements. In addition, census tests serve as practical training for the nuclear staff of supervisors and other officials.

1.120. The kind of tests usually carried out first during census preparations are questionnaire tests. Their purpose is to test the suitability of intended census questions, including their formulation and the instructions provided, as well as the suitability of the questionnaire design. These tests are also used for estimating the time requirements in enumeration. It is practical to carry out questionnaire tests on a small scale in several purposively selected places. Because they are relatively inexpensive, repeated rounds of questionnaire tests may be carried out until a satisfactory questionnaire has been evolved.

1.121. A comprehensive test of all census procedures is often called a pilot census. Essential features of a pilot census are coverage of one or more sizeable administrative divisions and encompassment of the preparatory, enumeration and processing stages of a census, by which it thus tests the adequacy of the entire census plan and of the census organization. In order to best serve this purpose, it should be undertaken in conditions resembling the actual enumeration as closely as possible. For this reason, it is often taken exactly one year before the planned census so as to conform with the expected seasonal patterns of climate and activity. It is generally unwise to consider the pilot census a source from which to derive usable substantive data. Apart from the sampling problems involved, such a use inevitably detracts from the central purpose of the pilot, which is to prepare for the main census.

13. Plan of enumeration

1.122. Several different approaches to enumeration are possible. Traditionally, each household is contacted and enumerated on a face-to-face basis. This approach is still used in most developing countries and for at least part of the population in many developed countries. In those circumstances where up-to-date and comprehensive address or population registers exist or can be established, the enumeration process often involves mailing out the census forms, or having the public mail back the completed forms, or both. Whatever approach is to be used, the complete enumeration plan should be prepared well before the enumeration begins. This involves (*a*) the determination of the enumeration method to be used and the basic procedures to be followed in the collection of the data and the control of the enumeration, (*b*) the procedures for the control of the quality of the data and (*c*) an estimation of the number of sets of living quarters and the probable size of the population to be enumerated so that the number of questionnaires and other materials required for the enumeration, and the number of enumerators and supervisors needed, can be properly ascertained.

1.123. The universal enumeration of population and living quarters should be made exclusively on a geographical basis, that is to say, the country should be divided into census enumeration areas and each area should be small enough to be covered by one enumerator during the period of time allowed for the enumeration. Other sources of information, such as registers of population or registers of properties, cannot normally be considered adequate for the purpose of a census, although they could be used for checking the completeness of the enumeration or the accuracy of the replies to certain questions.

1.124. Special attention should be given to the procedures to be followed for the enumeration of nomadic and semi-nomadic populations. These procedures should take account of the specific difficulties in locating such population groups, which are characterized by movement from place to place (see paras. 1.168-1.170 below). Special arrangements may also need to be made to enumerate homeless persons as well as the special categories listed in paragraph 2.45 below, to the extent that these categories are included within the scope of the census. Where

their number warrants, additional information that would indicate the reason for homelessness may need to be sought.

14. Plans for data processing

1.125. Plans for data processing should be formulated as an integral part of the overall plan of the census, and those responsible for the processing of the census should be involved from the inception of the planning process. Data processing will be required in connection with the results of census tests, compilation of preliminary results, preparation of tabulations, evaluation of census results, analysis of census data, arrangements for storage in and retrieval from a database, identification and correction of errors, and so on. In addition, data-processing technologies are playing an increasing role in the planning and control of field operations and other aspects of census administration. Data processing has an impact on almost all aspects of the census operation ranging from the selection of topics and the design of the questionnaire to the analysis of the final results. Therefore, data-processing requirements in terms of personnel, space, equipment and software (computer programs) need to be looked at from the point of view of the census as a whole and at an early stage in the planning.

1.126. The existing data-processing staff will certainly need to be expanded somewhat and will probably need some upgrading in terms of skills, particularly if new computer hardware or software is to be used in the census. Any needed training should be completed early enough so that those benefiting from the training can play an active role in census planning and operations.

1.127. Decisions will need to be made concerning the location of the various data-processing activities within the country, including the extent to which the processing work is to be decentralized. Acquisition of both equipment and supplies can require long lead times; estimates of both data capture and computer processing workloads must be made early to enable timely procurement. Closely related to the question of equipment is that of the provision of adequate space. Although the maintenance of most microcomputer equipment no longer requires adherence to rigid standards in terms of temperature, humidity, dust and so on, attention to issues related to power supplies is still important. Moreover, well-protected space for the storage of the completed census forms before, during and after processing will have to be secured.

1.128. In addition to considering the processing equipment to be used in the census, decisions will have to be made on the software to be used in editing and tabulating the census data. It is very costly and time-consuming to develop software for census editing and tabulation. Consequently a majority of countries in recent years have turned either to one of the several portable software packages available for census editing or tabulation or to one of the commercially available microcomputer spreadsheet, database or tabulation packages. These packages can substantially reduce the extent of the systems analysis and programming tasks involved, although sometimes at a price in terms of loss of flexibility. Each country may wish to assess its software requirements in light of its own needs and resources and in light of the general purpose and census software available. Regardless of the software used, sufficient time will have to be allowed for training staff in its use. In addition, if a census software package or a commercial package is used, time will be required to adapt the packages to the processing environment and requirements of the specific census.

15. Plans for dissemination

1.129. A census is not complete until the information collected is made available to potential users in a form suited to their needs. A wide range of statistical products can be made available to the public, the private sector, government agencies, local authorities and the academic and research communities. The information may be included in published tables or reports for general distribution, produced as tables in unpublished form for limited distribution or stored in a database and supplied upon request either on magnetic and optical media, or on-line.

1.130. Not all of the processed materials need to be disseminated widely or in a single format. Tabulations required by only a few users can be supplied in unpublished form. Some data may not be tabulated until they are required at a later date. The information stored in the census database allows fast and relatively inexpensive production of additional tables. Countries may offer *on-demand* services to provide census information to users who require tables or other outputs not produced, or aggregates not available, through other means.

1.131. Printed publications - despite their production cost - remain in most countries the preferred vehicle for dissemination of the main results. Target dates for publication should be determined well in advance and processing and printing prog rammes should be planned accordingly. In addition to traditional methods of printing, there are various methods of reproduction available that are fast, economical and good-quality, and these should be investigated. For an increasing number of users, computer-readable magnetic and optical media are a better means of dissemination than printed paper, based on the factors of cost, storage capacity (and therefore weight of documents), ease of reproduction and direct availability of the data for further computer processing.

1.132. Maps and other cartographic materials should be included in the overall dissemination programme of a population and housing census. The provision for needed resources should also be made in the budget from the initial planning stage. In addition to preparing maps for the census tables and reports, countries should also produce a population atlas. Collaboration with other departments and interested agencies should be explored to facilitate the production of a separate atlas.

16. Staff recruitment and training

1.133. Early arrangements are necessary to secure the proper number and type of personnel required for each of the various census operations. For reasons of efficiency and economy, it is important that the staff be selected on the basis of competence. Consideration may also be given to the use of the same staff for successive operations, thus reducing the turnover of personnel. While the preparatory and processing work generally calls for office employees possessing or able to learn certain specialized skills (cartographers, coders, data entry operators, and so on), the enumeration stage usually demands a large number of persons capable of going to their assigned urban or rural enumeration areas and collecting the information according to specific definitions and instructions. It is essential that the enumerators and, to the extent possible, their immediate supervisors be conversant with the languages or dialects of the area in which they will be working. It is only prudent to recruit and train a somewhat larger field force than is required for the enumeration itself, as a certain amount of attrition is inevitable both during the course of the training programme and between the completion of the training and the start of the fieldwork.

1.134. Once the cartographic preparations are substantially complete and the questionnaire has been sent for printing, perhaps the single most important means that the census authorities have for influencing the success of the census is the training programme. The contribution that a well-planned and executed training programme can make to the quality of the census results therefore cannot be stressed too strongly. Such a training programme must of course focus on the widely dispersed and difficult-to-supervise field staff (namely, the enumerators and their immediate supervisors) but it must also cover others (for example, the higher-level supervisors, editors, coders, computer operators).

1.135. The entire census training programme should be designed to cover each phase of the work and provide an efficient and consistent means of effectively starting large numbers of employees in their work. The programme will need to correspond closely to the needs of the various operations and, where appropriate, may include both theoretical and practical instruction, with emphasis on the latter. In the case of the enumerators and their immediate supervisors, the training is most effective if it includes several opportunities for the trainees to participate in practice interviews and role-playing exercises. (In countries in which multiple languages are used, the method and content of the enumerator training programme will need to be suitably adjusted. For example, if the questionnaire is printed in another language, provision will have to be made for instructing enumerators on the correct formulation of the census questions in the vernacular.) The training programme for editors, coders, operators of data recording equipment and so forth should also provide opportunities for the trainees to practice under the supervision of the trainers, the operations it is expected they will subsequently perform. The intermediate- and higher-level technical staff may also benefit from special training programmes. For them, the emphasis should usually be on recent technical developments of relevance to the forthcoming census and on the interrelationships among the various aspects of census plans and operations.

1.136. The organization and conduct of training courses should be entrusted to those having the necessary qualifications to carry out this task successfully, taking into account not only their professional abilities but also their ability in teaching. This means that staff in charge of training should have certain qualifications that will enable them to stimulate the interest of trainees and to transfer the required knowledge, since otherwise well-qualified technical personnel who are unable to transfer their knowledge to the trainees in a satisfactory manner will be unsuitable as instructors for group training activities. This must be taken into consideration when selecting instructors and it is recommended that objective criteria should be used. In practice, however, it is difficult to find the necessary number of instructors who have both the professional and the teaching qualifications; for this reason, the instructors selected should themselves undergo training in how to organize and conduct training courses.

1.137. It is important that each training programme be made available in manual (booklet) form and distributed to the census organizers and training instructors. Such a manual would be a valuable guide and would help considerably in the efficient training of census staff. It would also contribute to the uniformity of training, which is an essential factor for a successful enumeration, taking into account the great number of census instructors who will be engaged in training. Simple audio-visual aids (for example, film strips, posters, tape recordings) can also be used to help make the training more effective and uniform throughout the country.

1.138. It is very important to determine the time required to train staff for the various aspects of the census. This depends on several factors: the type of function for which they are being trained, the level at which they will be performing, the complexity of the census, the educational level of the trainees, the number of instructors available and the funds available. Usually, all courses last from one week to one month. It is strongly recommended that the training be carried out daily for a fixed period. The results are not as good if training is provided for a few days per week, since with this approach, which draws out the length of the course, previous work is often forgotten and has to be repeated. For this reason, it is also best to avoid completion of the training long before the start of the actual work. Any duration, however, may be fixed for the course, provided that the main principle -- namely that training should be long enough to permit the assimilation of the syllabus -- is not overlooked.

17. Avoiding gender biases and biases affecting data on minority population

1.139. Gender-based stereotypes can introduce serious biases in census data and the conclusions drawn from these data. These biases are discussed in more detail in part two (see, for example, paras. 2.67-2.76 and 2.165-2.247 relating to household relationships and economic characteristics, respectively). There is much that can be done in the preparatory stages of the census to help minimize gender-based biases. These preparatory activities are of two broad types: those related to census content and those related to census operations.

1.140. Issues of census content, including what information is sought and how, the definitions and classifications used, and the manner in which databases and tabulations are specified, are important in generating data needed to examine questions of gender equity. In addressing these content issues, census planners and users will need to be alert to prevailing stereotypes so as to develop a census that both minimizes the influence of the stereotypes that respondents may hold and avoids further perpetuation of these stereotypes.

1.141. With regard to census operations, particular attention will need to be given to the selection, training and supervision of the field staff. This involves ensuring that both men and women are recruited to the field staff (both as interviewers and supervisors) and that manuals and training materials cover gender bias issues just as they do other important sources of error. Consultations with women's groups and others concerned with gender equity can help in addressing both content and operational issues.

1.142. Gender-related stereotypes and biases are concerns that have relevance for all countries. Census authorities in a number of countries must also be alert to the possibility of stereotypes and biases affecting data on minority population groups. Such groups may include ethnic, linguistic, national, racial and religious minorities and indigenous and nomadic populations. As with gender issues, the problem will need to be addressed in terms of both census content and census operations. Representatives of these minority groups can often provide census planners with important information and insights relevant to both census content and operations. Thus, special efforts should be made to consult with them when planning the census. In the case of minority populations living in isolated settlements or enclaves, such consultations are often critical for minimizing underenumeration among these populations.

B. Quality control and improvement programme

1. Need for a quality control and improvement system

1.143. Because of the size and complexity of census operations, it is likely that errors of one kind or another may arise at any stage of the census. These operational errors may quickly lead to serious coverage or content errors, cost overruns or major delays in completing the census. Moreover, indifference to errors is likely to foster further laxness which, in turn, generates even more errors.

1.144. Every national census organization should establish a system of quality control and improvement as an integral part of its census operation. The primary objective of such a programme should be to provide information so that decisions can be taken to modify quickly ongoing census operations in order to improve the quality and cost-effectiveness of the census while it is under way. Thus, the system should be designed to identify processes and personnel that are functioning poorly in terms of coverage or content errors, costs or delays. The programme may also gather information about the quality of work for use after the census is over. It may be desirable to ascertain the quality level that was achieved in previous censuses and use that information to establish standards for the next census. The result of such studies can be useful in identifying areas where errors have been committed and thus preparing better plans and procedures for future censuses.

1.145. The quality control and improvement system should be seen as an important component of the overall census programme. As such, it must be fully integrated with the other

census plans and procedures. There is no single standard quality control and improvement system that can be applied to all censuses. Census designers and administrators must keep in mind that no matter how much effort is contributed, complete coverage and accuracy in the census data are an unattainable goal. However, efforts to control errors should be at a level that is sufficient to produce data of a reasonable accuracy within the constraints of the budget and time allotted. As the application of the system is the responsibility of various census leaders and field supervisors, the adopted procedures and instructions for their application should be contained in the instruction manuals and other training materials.

2. Quality control techniques

1.146. The success of any quality control and improvement programme depends on: (*a*) laying down quality standards, (*b*) determining verification techniques, (*c*) measuring quality through record-keeping, and (*d*) providing for timely feedback from the results of the programme so that effective corrective action may be taken. The rectification procedures may include changing the process or procedure, clarifying the instructions, retraining one or more staff members, warning the staff member, rejecting his/her work, or removing him/her from the job. Sometimes two or more of these actions are taken. *Spot checks, complete verification* and *sample verification* are the usual quality control techniques adopted in censuses.

1.147. Verification can be *dependent verification* or *independent verification*. In dependent verification, a verifier assesses the work of a census worker by looking at his/her work. There is, however, an inherent danger that the verifier may be influenced by the results obtained in the initial operation. In independent verification, a job is done initially by one person and verified independently by a verifier without reference to the original work. The original results and the results of the verification operation are then compared; if both sets of results agree, the work in question is considered to be correct. In the case of a difference, a third person may resolve the issue. In the case of data entry, the computer can be programmed to compare the records and point out the difference. Independent verification reduces the bias that is often associated with dependent verification. However, if the operation involves contact with the public, such as reinterviewing households, dependent verification may be easier to carry out insofar as the verifier will be aware of what happened in the original census interview.

1.148. Verification of all cases (that is, 100 per cent verification), theoretically assures a complete check of the work of a particular phase in census operations (for example, enumeration, coding or data entry). However, verifying all items can be time-consuming and very costly.

1.149. Sample verification reduces the cost and at the same time can yield results almost as reliable as 100 per cent verification. If the verification of the units in the sample is performed by more experienced and skilled persons, as is usually the case, verification costs will be proportionally higher. The precision would have to be balanced against the cost of operating the sampling plan. To be effective, the sample must be selected on a scientific basis using probability sampling. Sometimes, the cost can be reduced and the quality improved by placing the items into either of the following two groups: (*a*) the group of those items in respect of which normally not many errors are committed and (*b*) the group of those items in respect of which errors are often committed because of the items' complexity. While cases in the former group can be verified on a sample basis, cases in the latter may be checked on a 100 per cent basis. Two types of sampling procedures are frequently used: (*a*) *acceptance sampling* and (*b*) *continuous sampling*.

1.150. Acceptance sampling is generally adopted in jobs involving a large number of employees, such as manual editing and checking of schedules, coding of census documents and data entry. In acceptance sampling, edited or coded documents or keyed-in data are grouped in lots. There are three important numbers in this exercise: the first is the number of items in a lot; the second, the number of items drawn from the lot; and the third, the acceptance number or the maximum number of allowable defective items in the sample inspected. A lot is accepted or rejected on the basis of the inspection of a sample chosen from the lot by probability methods. Rejection of an entire lot of work outputs brings much stronger pressure to bear on a worker for quality improvement. If over a period of time performance does not improve, there should be an option to remove the worker.

1.151. In the case where the work is continuous and it may not be possible to group the outputs into lots for inspection, a continuous sampling plan may be employed. In census operations, this situation arises mostly during the printing of forms, particularly the optical mark reading (OMR) forms.

1.152. Other scientific sampling procedures may be used. In addition, spot checking, a subjective device for selecting items for verification, may be used. Since the selection is not carried out according to any type of probability sampling, the reliability of the results cannot be known. This is usually not recommended for operations such as editing, coding or data entry. However, spot checks could be very useful in some census operations, for example the periodic checking as to appropriate filing, of the census documents maintained in the storage room.

3. Implementing a quality control and improvement programme

1.153. A quality control and improvement programme is an important aspect of census management and has implications for many parts of the census process. It plays a particularly important role in those parts of the census process that involve massive operations, namely, certain aspects of the preparatory work, the actual enumeration and the processing of the census results. In the pre-enumeration stage, quality control is particularly relevant for such activities as house listing operations, preparation of EA maps, printing of census materials, and personnel and financial control operations.

1.154. Quality control at the enumeration stage can play a critical role in improving the quality of the census results by providing quick feedback so that corrective action can be taken while the census is still in the field. If census forms are distributed by mail or by other persons outside the census office, a system should be established to verify, on a sample basis, that the forms have been received. If the census is organized on the basis of a more traditional census interview, census supervisors will be entrusted with a variety of quality control responsibilities.

1.155. Data-processing is one of the crucial steps by which raw data collected in the field are converted into edited, coded and tabulated data. In some of these processes (for example, coding, data entry, recoding, estimation and tabulation) the data are being transformed, while in others (such as editing and imputation, verification, and so on) the data are being corrected. New errors can occur in any of these operations. All three types of quality control techniques identified earlier (that is, acceptance sampling, continuous sampling and spot checking) may be used in the data-processing operations. At the initial stage, documents must be checked and the critical information, like geographical identification codes, corrected wherever necessary. The corrections must be made according to predetermined rules and properly documented. At this stage, only simple checks should be adopted. Acceptance sampling procedures specifying the lot size, the sample size to be inspected and the acceptance number would go a long way towards controlling quality in editing.

1.156. Manual editing and coding should be thoroughly verified by another set of personnel. The verification can be dependent or independent. Depending on the resources available, verification may be done on a sample basis or a 100 per cent basis. A number of quality control techniques can be adopted. At these stages, the error rates must be maintained on an *operator-wise*, *lot-wise* and *field-wise basis*. Usually, the verification is done on a 100 per cent basis for some time. When an operator achieves the specified low-error rate for a considerable period of time, he/she may be put on sample verification. The work at this stage lends itself to acceptance sampling procedures. The fact that an edited or coded lot is rejected makes the editor or coder more alert. Since at this stage most of the editing and coding staff are appointed on a temporary basis, persons who perform badly consistently must be removed.

1.157. Many errors may arise in the course of coding and data entry. Lack of supervision and verification at this stage would only delay the release of data, as error detection and correction will be more difficult later. Range checks and certain consistency checks can be built into the data entry software. Usually every time an out-of-range entry or an inconsistent one is encountered, the machine beeps and stops, thereby affecting the speed of data entry. Therefore, the amount of consistency checking to be introduced at the stage of data entry has to be carefully determined so that a reasonable speed of data entry can be maintained. Data entry has to be verified by another set of personnel. Similar quality control checks should also be applied in the case where a computer-assisted coding method is used. At this stage dependent or independent verification on a 100 per cent basis or acceptance sampling procedures can be adopted. Error rates can be calculated *operator-wise* and *field-wise*. An operator consistently showing a large error rate or a relatively low speed can be warned to be extra-vigilant, or he or she can be retrained or replaced.

1.158. If data are keyed at one centre and the computer processing occurs at another location, the data will have to be transferred to diskettes, tapes or other magnetic media and these media sent to the processing centre. A control sheet should accompany all diskettes, tapes or other media showing the area the media relate to and the number of records they contain. A back-up copy of the media should be maintained at the data entry centre. At the processing centre, the media must be checked for the number of records they contain, and the figure compared with that of the inventory. In the case of any discrepancies, the data entry centre must be contacted and all such discrepancies reconciled. Only after this has been done should further processing proceed.

1.159. Computer edits play an important role in error detection and correction. At the computer edit stage, detailed consistency checks can be laid down in consultation with subject-matter specialists. Errors detected can be corrected either by reference to original schedules or automatically. While automatic editing speeds up data-processing, careful control has to be exercised over the quality of incoming data. *Batch statistics* giving number and percentage of edits field-wise would give an idea of the kind of errors that the documents are subject to. If in a particular area

too much editing is reported for a specified field, the reasons for this should be thoroughly investigated.

1.160. Spot checks can assess whether the documents are being maintained in the *census documents storage* rooms in a prescribed manner, whether all registers for movement of documents are being maintained and updated properly and whether the control procedures are being followed. In some countries, the movements of documents are controlled by computer. While computers can reduce the routine and monotonous work of filling out forms, success will depend on the extent to which the control procedures are adopted in practice. Similar control procedures will need to be instituted for the flow of census records through electronic data interchange.

1.161. A population and housing census generally produces tables at different area levels. Before the release of tables, it would be essential to conduct a thorough check to ensure that all planned tabulations have been prepared for all intended geographical units. A special team should be constituted to check the tables generated on computer. It should go through and scrutinize different tables to determine whether quantities that should be equal to each other and quantities that should be greater (or less) than others actually are. A list of *pre-release checks* must be finalized. These checks should include spelling checks, title checks and checks as to whether tables have been generated for all areas and groups of the population originally planned for.

1.162. While range checks and consistency checks introduced at the editing stage can reduce most of the errors, an aggregate check after the tables have been prepared is essential. In this case, a few trained and experienced persons should go through the different tables to check as to whether the reported numbers in different cells are reasonable. Comparison with the published figures of previous censuses could help in identifying such errors. In a few cases, a quick reference to census schedules would indicate whether there are coding errors. Calculation of some ratios and growth rates, and comparison with previous census figures or other figures published by sample surveys, can be useful. Comparison with other survey-based figures should be attempted only if the concepts used are comparable.

4. Management of a quality control and improvement programme

1.163. User orientation and continuous improvement are important components of quality consciousness and hence of any quality control activity carried out as part of the census. The aim of continuous improvement should be reflected in all aspects of the census organization, and such improvement should be aimed at all census operations and at all levels. As a first step, census managers should identify error-prone activities, whether due to human or machine factors, and target these activities for intensive quality control activities. Separate plans should be designed for each job, keeping in mind the nature of the operation performed. Suitable information systems about quality must be designed for different levels of management. The information must be provided in time for action to be taken. The most important aspect of any quality control and improvement programme should be the taking of appropriate action to prevent further errors from occurring and to identify and, if possible, correct the errors that have occurred.

1.164. It is also useful to institute a mechanism by which a check of the overall census operation, as a cohesive system, can be carried out so as to verify that all elements of the operation are well synchronized. A computer-based management system could assist in such a systemic endeavour. It would require the development of well-functioning interlinked databases, such as EA files, along with any relevant information, for example, data on population and households; personnel (field staff) files; payment system files; and any other data files that might be needed for the management of a quality control system. The development of such a system requires a high level of expertise and a long lead time of preparation. However, once it is successfully established, countries will gain significant advantages including higher efficiency, reduced costs and higher-quality census products.

C. Enumeration

1. Method of enumeration

1.165. There are two major methods of enumeration. In the canvasser (or enumerator) method, information for each individual (in a population census) and for each set of living quarters and the occupants thereof (in a housing census) is collected and entered in the questionnaire by a census official designated to perform this operation in a specified area. In the householder method, the major responsibility for entering the information is given to a person in the unit being enumerated (usually the head of the household), although the questionnaire is usually distributed, collected and checked by a census official. In some countries, postal distribution of the questionnaire, with or without postal return, is used in conjunction with the householder method. This mail-out and mail-back procedure can be used exclusively or combined with on-site checking by a census official.

1.166. Each method has its own advantages and limitations. The canvasser method is the only method that can be used in largely illiterate populations or in other population groups that may be unwilling to complete the census forms themselves, or find it difficult to do so. On the other hand, in countries where literacy is virtually universal and educational attainment relatively high, the householder method may often yield more reliable results at substantially lower costs, particularly if a mail-out/mail-back procedure can be used. However, the postal services may be used to distribute the census forms only when a comprehensive and up-to-date list of addresses is available or can be prepared. Another consideration is the emphasis to be placed in the census on obtaining responses, whenever possible, directly from the person concerned. The householder method allows for, and its instructions may encourage -- at no extra cost to the census organization -- consultations among family members when they complete the census form. In contrast, with the canvasser method it may be prohibitively expensive to encourage enumerators to go beyond even the "first responsible adult" they encounter in each household. In light of these considerations, it may sometimes be desirable to rely on one method for enumerating most of the population and to use another method in certain areas or for special groups of the population. However, overly complex designs should be avoided.

1.167. The decision regarding the method of enumeration to be employed should be taken at an early stage on the basis of thorough testing of the various alternatives in terms of their costs, the quality of the data produced and their operational feasibility. Even where a method has been followed traditionally, it is well to periodically reassess its relative advantages in light of current census needs and changing techniques. An early decision is required because the method of enumeration used affects the budget, the organizational structure, the publicity plan, the training programme, the design of the questionnaire and, to some extent, the kind of data that can be collected.

1.168. To successfully carry out the enumeration of nomads, it is particularly necessary to pay full attention to the preparatory work in order to determine the suitable enumeration techniques. It should be pointed out that there is no absolute methodology for the enumeration of nomads and conditions vary from country to country. The particular method suitable for a country undertaking to enumerate nomads as part of the census should be determined only after a detailed preliminary study and after field testing. Some of the methods used to enumerate nomads and semi-nomads may be classified as follows: (*a*) group-assembly approach, (*b*) tribal or hierarchical approach, (*c*) enumeration-area approach, (*d*) water-point approach and (*e*) camp approach. Sometimes a combination of two or more methods may be used.

1.169. In the group-assembly approach, the nomads are asked to assemble at particular interview sites on certain fixed dates. This method can be adopted only through the administrative and/or tribal authorities. The tribal or hierarchical approach is a favourite method, since the nomads usually follow what is dictated by the tribal or hierarchical chief. The enumeration work can be carried out as a kind of administrative census by contacting the tribal chief and collecting, sometimes from memory and sometimes from a register, all the needed information on the chief's followers. The other approach is to contact those followers with the assistance of the chief or a representative and to collect the necessary data directly from the household. In this case, the unit of enumeration is not areal but tribal. The enumeration-area approach presupposes creating conventional census enumeration areas and then contacting each nomadic household that happens to be staying in the enumeration area during the census. In the water-point approach, a list of all water-points available to the nomads during the period of enumeration is prepared. Since numerous temporary water-points are created during the rainy season, a meaningful list of water-points may be prepared with reference only to the dry season. The enumerator is given the task of locating and visiting every nomadic household that may be using a certain water-point. In the camp approach to enumerating nomads, a list of camps is prepared together with the approximate location of each within the country, and enumerators are sent to visit all the households in each camp.

1.170. For more detailed information on the methods described above and for other methods of enumerating nomads, reference may be made to the study presented to the Conference of African Statisticians at its tenth session.[18]

2. Timing and length of the enumeration period

1.171. The choice of the time of year in which the census will be taken is of great importance. The main consideration should be to select a period in which the census is likely to be most successful and to yield the most useful data. This may depend on a number of factors. First, it is necessary to avoid those seasons in which it will be difficult to reach all inhabited areas because of rains, flooding, snow and so forth or in which the work will be

[18] Economic Commission for Africa, "Study on special techniques for enumerating nomads in African censuses and surveys" (E/CN.14/CAS.10/16).

particularly arduous, as is the case during extremely hot weather. Second, a time should be chosen when most people are staying at their usual place of residence; such a choice will simplify the census operations both in a de jure and in a de facto enumeration, and it can make the results of a de facto enumeration more meaningful. Seasons of peak agricultural activity should be avoided because it is difficult to interview persons who work late every day and who may even stay on nights on their land if the land is far from home. Great traditional festivals, pilgrimages and fasting periods are also unsuitable times for census work. Since in many developing countries the bulk of the field staff is recruited among schoolteachers and older students, the conduct of the census may be feasible only during school holidays, though, as already indicated, the days of major festivals should be avoided.

1.172. In a country that includes areas of sharply contrasting seasonal patterns of weather or activity or in which potential census personnel are in very short supply, it may be necessary to enumerate different parts of the country at different times or to enumerate the nomads or other special population groups at a different time from that established for the settled population. This, however, is generally not a very desirable solution both because the nomads cannot always be clearly differentiated and because there may be mobility among the settled inhabitants. Furthermore, such a solution creates complications in respect of the use of the census data.

1.173. When a census has been taken and the census date is found to have been on the whole satisfactory, the next census should be taken at the same time of the year, unless there are strong reasons for changing this date. A regular census date enhances the comparability of the data and facilitates analysis. The tradition of a fixed census date in a country also provides administrative discipline, motivating all those involved in the census to make necessary preparations in a timely manner.

1.174. It is desirable to keep the enumeration period short in order to avoid double counting and omissions, which can occur in spite of a single reference date. On the other hand, the shorter the enumeration period, the greater the number of field staff that have to be recruited, trained and supervised. This increases the cost and may lower the quality of the data. How these different considerations should be reconciled depends on the size and nature of the country and on the resources at its disposal. The length of school holidays is sometimes a restricting factor, although Governments of several developing countries, recognizing the great national importance of a census, have prolonged the school holidays in the census year in order to allow teachers and students to work on the census as long as required.

1.175. In recent censuses, most developing countries have allowed about one week to 10 days for the training of enumerators, while the enumeration period has generally varied from a few days to two weeks. Short periods are often feasible in small countries while longer periods may be necessary in large countries with poor communications.

1.176. One method sometimes used to allow sufficient time for enumeration and yet make the census simultaneous is first to enumerate the population over a longer period, say a week or more, and then, in one single day, to recanvass all households, deleting and adding persons as needed to update the files. This procedure is, however, not practicable in very sparsely settled areas.

3. Supervision

1.177. Adequate supervision of the enumeration is essential. When the enumeration lasts only a few days, control of the quantity and quality of the work accomplished after the first day of enumeration is recommended, in order to facilitate the correction of inefficiencies and to maintain satisfactory progress during the enumeration period. Where the enumeration extends over more than a few days, periodic and systematic assessment should be organized.

4. Use of sampling in the enumeration

1.178. Sampling may be employed in the enumeration for collecting information on any topics that need not be tabulated for small areas. Questions designed to apply only to a sample of the population or of the living quarters may be included on the regular questionnaire or a special sample questionnaire may be used in addition to a complete enumeration questionnaire. For a discussion of the use of sampling in the enumeration, see paragraphs 1.285-1.317 below.

D. Data-processing

1.179. No matter how thorough and accurate the census enumeration is, the usefulness, quality and timeliness of the census tabulations will suffer unless the collected data are properly processed. An important element of a successful processing operation is the close and continuing collaboration, at all levels, between the data-processing staff, and the subject-matter and the general statistical staff. At a minimum, the subject-matter and the general statistical staff will need to become familiar with and take a continuing interest in the processing plans and operations, while the processing staff will need to become familiar with and take a continuing interest in the substantive aspects of the census.

1.180. The most common procedure is to have the census documents arrive in the processing centre in batches by enumera-

tion area. Maintenance of these batches throughout the data processing is recommended, since documents for a given EA reflect the work of one enumerator and may contain a series of errors typical of that person. To ensure the integrity of the batches, the census documents should be stored in a specially designed census document storage facility. The batch for each EA should first be checked for completeness, geographical identification codes and other characteristics of acceptability, before being sent to a next stage of data-processing like coding. Transcribing all coded data onto another sheet (for example, the coding form) should be avoided since it may add transcription errors.

1. Method of processing

1.181. The choice of an appropriate method of processing is determined by the circumstances of each country. Rapid advances in data-processing technology have greatly increased the speed and reliability of producing detailed tabulation, thereby making computer processing the standard method of processing around the world. Furthermore, microcomputers are now used in practically every phase of census operations, so that *mainframe power* is no longer an essential need in census processing. All tasks, including editing and tabulation of data files, can very well be done on small-sized desktop systems which can be placed in substantive departments and in field offices. Therefore, computer work is not necessarily dependent on a centralized data-processing facility.

1.182. In a census office that utilizes a networked computer environment, the file servers allow both data and program files to be stored in a central location. This system economizes on storage space for client computers and removes the need for much physical movement of programs and data on computer media such as diskettes. Data storage requires frequent back-ups of the system information to avoid major data loss due to hardware or software faults.

1.183. In determining the type of equipment to be employed and the advisability of a new machine installation (either complete or partial), or of additions or upgrades to existing equipment, consideration should be given to all the processing requirements of the data-collection programme for which the population and housing census is but one part. Only on this basis can a reasonable decision be made. Decisions on the type of data recording equipment and computer equipment should be made at least one year in advance of the scheduled date of enumeration in order to allow appropriate questionnaire design and proper preparation of instructions to enumerators, development of coding schemes, specification of data handling controls and procedures, and recruitment and training of data-processing personnel. Rapid processing of pre-test or pilot census data is particularly important for identifying improvements needed in the census questionnaire, instructions to enumerators or whatever other preparations may be needed. It is recommended, therefore, that arrangements for using appropriate equipment and software be made well in advance of such tests.

2. Coding

1.184. Whenever possible, *pre-coded* responses should be used in census questionnaires with numerical or alphanumeric codes being printed next to each category. Since computer editing and tabulation of textual material are not practical, verbal responses will have to be replaced by a code. This can be done by a coder (possibly computer-assisted) or by a dedicated computer program for automatic coding. There are obvious advantages to directly coding the respondent's answer into the questionnaire during the interview, since the respondent is still present to provide clarifications if necessary. Unfortunately, in most cases this is not practical because enumerators are normally insufficiently trained and they cannot be expected to carry the required code books and manuals during census enumeration.

1.185. A coder normally works with one or several code books for various items in the questionnaires. Coders may specialize in certain variables, with one group of coders handling only geographical references, another responsible for detailed occupation and industry coding, and so forth. In any event, this is tedious work and can be an important source of errors. To avoid a new source of errors, coders should not rely only on their memory: they must base their work on the use of the code books.

1.186. *Computer-assisted coding* uses microcomputers to assist the coders. The process requires that all the codes be stored in a database file which are accessed by coders during the coding operation. In using this method, it may be advantageous to change the order of activities so that the capture of pre-coded information in the questionnaire occurs first, followed by the capture and computer-assisted coding of the remaining information. This technique has several advantages: (*a*) capturing the pre-coded information at an early stage leads to some data files' becoming rapidly available, which opens up the possibility of generating and releasing preliminary census results; (*b*) the computer-assisted coding process provides an opportunity for a computer system to alert the operator to problems with data supposedly already captured, for example, missing information for a fully pre-coded variable; (*c*) the coder works directly on the computer screen; (*d*) information from other variables may be

helpful in determining applicable codes for write-ins.[19]

1.187. *Automatic coding* is a process in which the decision about the code to be assigned is delegated to a computer program. A human operator becomes involved only in those cases where the software cannot resolve the issue. Computer coding may use, in addition to the written response for the item in question, other relevant information available in the record or the questionnaire. Therefore automatic coding is more applicable in cases where the data capturing process has already been completed, either manually or by some form of automatic reading. Developing computer software for automatic coding is a complex task. The error rates and rates of unsolvable cases for difficult variables tend to be high. Automatic coding methods need to be complemented by computer-assisted or conventional coding methods for unresolved responses.

3. Data capture

1.188. Converting the information obtained in the census to a format that can be interpreted by a computer is called data capture. Several different methods for data capture are used in censuses. They include keyboard data entry, optical mark reading, optical character reading and imaging techniques. Computer-assisted *keyboard data entry* is usually carried out using microcomputer data entry programs with built-in logical controls. Some of the tasks accomplished by the programs are (*a*) verifying that EA codes are valid, and copying them automatically from one record to the next; (*b*) assigning a number to each person in a household automatically (and perhaps to each household within an EA); (*c*) switching record types automatically if the program's logic requires it; (*d*) checking that variable values are always within pre-determined ranges; (*e*) skipping fields if the logic indicates doing so; (*f*) supporting keyboard verification of the information entered earlier; and (*g*) generating summary statistics for the operator and the batch. In order not to delay the data capture task, data entry applications should limit checking to problems that are either very serious (for example, wrong EA code), or likely to be caused by a simple misread or keying mistake. More sophisticated checking is deferred until the editing stage.

1.189. *Optical mark reading* (OMR; also often called optical mark recognition) equipment has been available for many years and in recent years has become more reliable. Owing to relatively stringent requirements for the successful processing of the paper, countries with very dusty or humid climates and poor transport infrastructures are discouraged from using OMR. It is necessary to heed special questionnaire design restrictions as well as consider the quality of the paper and adhere to precise specifications regarding the printing and cutting of the sheets. In some developing countries, this may mean that local production of the questionnaires will be problematic. The need to reserve a relatively large space for marking areas and to adhere to other limitations imposed by OMR equipment sometimes makes it difficult to design the best questionnaire from the point of view of the enumeration process.

1.190. OMR questionnaires can be marked by the respondent or by the enumerator. Marking by respondents is attractive from a cost perspective, but it depends on the presence of a cooperative spirit and relatively universal literacy. A practical problem is that most OMR devices put restrictions on the writing instrument and the colours that can be used in the marking. Assuming the rules are followed, the rejection rate for marked forms is often low, especially if the forms have been inspected visually before being fed into the readers. Converting a manually completed census questionnaire to OMR format after it has been received in the census office is inefficient and becomes a source of errors, and should therefore be avoided.

1.191. *Optical character reading* (OCR; also called optical character recognition) consists in the use of special equipment to read characters at specific locations in the questionnaire. In general, only numerals will give acceptable results in an uncontrolled environment, that is to say, one where the machine has not been adapted to the writing style of a particular person. However, since this technology continues to progress at a rapid pace, OCR capabilities may improve. Even OCR restricted to numbers represents a considerable step forward when compared with OMR. Clear number writing instructions have to be provided for those who are to write numbers in the questionnaire.

1.192. *Imaging techniques* and *scanner devices*, together with OCR software, have recently been used by several countries for data capture. Both industrialized and developing countries find the modern imaging technology increasingly cost-effective.

[19] For additional references see *Economic and Social Commission for Asia and the Pacific*, "Report of the Workshop on Computer-Assisted Coding, New Zealand, 17-21 April 1989" (STAT/WCAC/Rep.); also *European Workshop on Census Processing, Fareham, United Kingdom, 6 and 7 March 1995*; (Eurostat, Office of Population Censuses and Surveys, 1995); Economic Commission for Europe, Conference of European Statisticians (CES), *"Le recensement de la population de 1982 en France: saisie et chiffrement assistés par ordinateur: rapport de l'Institut national de la statistique et des études économiques de la France (INSEE)" (CES/SEM.21/R.24), 30 July 1987 French National Institute of Statistics and Economic Studies (INSEE),* Automatic Coding of Descriptive Data in INSEE Surveys: Use of the QUID System (CES, ISIS '90, 1990).

Experience shows that significantly low error rates are achieved in recovering *marks* or *ticks* from questionnaires. *Numerical characters* written by trained enumerators can also be captured with an acceptable error rate. However, *alphanumeric characters* are still difficult to decode and continue to show the highest error rate. The equipment developed recently has shown an expanded tolerance to variations in paper quality. Nevertheless, extensive testing must be conducted well in advance to determine the best type of equipment and paper. The use of imaging techniques is also dependent on the availability of local maintenance and support capabilities. Whatever methods of coding and data capture are chosen, it is essential that they be carefully tested before final adoption.

1.193. The quantity and type of data entry equipment required will depend on the method of data capture selected, the time available for this phase of the census, the size of the country, the degree of decentralization of the data capture operations, and a number of other factors. For keyboard data entry, the average input rates usually vary between 5,000 and 10,000 keystrokes per hour. Some operators have stayed well below that range, while others have surpassed it significantly. Among the factors that affect operator speed are (*a*) the supporting software and program; (*b*) the complexity of the operators' tasks; (*c*) the ergonomic characteristics, reliability and speed of the equipment; (*d*) the question whether work is always available; (*e*) the training and aptitude of the recruited staff; and (*f*) the motivation of the workers.

1.194. Several options are available to help ensure that data entry operations are completed in a timely manner. They include (*a*) procuring more equipment, (*b*) increasing the number of working hours by working double or even triple shifts and during weekends and (*c*) applying independent verification to varying extents. With the increasing safeguard of data quality by data entry programs, complete verification has become less necessary. Full independent verification may be applied only in the initial stage of data entry and may be reduced when each worker has achieved an acceptable level of quality. After that, a sample verification plan can be applied. Operators may be assigned to sample verification depending on their observed error rate. The work of reliable operators may be verified only for a small sample of the EAs, while more extensive verification is continued for the more error-prone operators. Data entry operators should be retrained or removed if they are obviously lacking in talent for the work (see paras. 1.146-1.152 on Quality control techniques).

4. Data editing

1.195. Raw data files contain errors of many kinds, some generated by the respondents and others caused by enumerators who misunderstood the respondent's answer. Further mistakes are introduced in the processing operations during coding and data entry, or in the course of the transcriptions that take place. From an operational point of view, such errors are of two types: (*a*) those that have the potential of blocking further processing, and (*b*) those that introduce distortions into census results without interrupting the logical flow of subsequent processing operations. All of the first kind of error and as many as possible of the second kind must be corrected. Prior to error correction operations, precautionary action should always be taken by making a back-up copy of the original data file at every stage, in case there is a need to go back over work.

1.196. Since for large censuses manual correction is rarely economically feasible, the conditions for such corrections are usually specified in specially designed computer programs for automatic error scrutiny and imputation based on other information for the person or household or for other persons or households. For cases where sufficient information is unavailable for the specific persons or household to correct apparent errors, the *hot-deck imputation* method may be used. This technique uses information obtained from previously processed persons, families or households with similar characteristics as the "correct" value in replacing missing values or values that have failed processing edits. It requires, however, careful programming work, and the search for appropriate information in the census may slow down program execution. The use of hot-deck imputation is often limited to cases involving essential variables where Unknown or Non-response is not an acceptable value.[20]

1.197. In some cases, the best solution will be to move out-of-range or clearly inconsistent values into a special category, prior to deciding how such cases should be edited and classified. In this way, the pitfalls of introducing bias are considerably reduced. Overambitious automatic editing programs may cause the resulting so-called corrected data to be significantly flawed. In this respect it would makes sense to have an acceptable cut-off value for error rates at the EA level. If a data scrutiny program finds that more than a certain percentage of the records in a particular batch have one or more serious problems, the whole batch should be rejected and subject to human verification, and possibly even re-enumeration in the field.

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[20] *European Workshop on Census Processing, Fareham, United Kingdom, 6 and 7 March 1995* (Eurostat, Office of Population Censuses and Surveys, 1995); *IMPS: Integrated Microcomputer Processing System* (Washington, D.C., United States Bureau of the Census, International Statistical Programs Center, 1994).

1.198. Editing and imputation rules should be formulated by subject-matter specialists, not by computer programmers; also, an error scrutiny and editing plan should be elaborated at an early stage of the census. A set of consistency rules and corrective measures should be put in writing and made available to the programming staff, leaving no room for confusion, misinterpretation or unwarranted independent initiative. The computer programmers should implement these editing rules by working as a part of a team with the subject-matter specialists.

5. Processing control

1.199. Careful planning and control are required to ensure an uninterrupted flow of work through the various stages from receipt of the census questionnaires through preparation of the database and final tabulations. The plan should provide for the computer edit to follow closely the coding/checking/recording of the data so that errors can be detected while knowledge related to them is fresh and appropriate remedial actions may be taken.

1.200. Countries may wish to establish a computer-based processing management and control system to check individual forms or groups of forms for each EA or for other processing units. Such a system should link the databases for EAs and other geographical entities with the control information. The system would check and manage progress from process to process so as to ensure the completeness of records at each stage of the processing operations. This system should be fed into the overall quality control and improvement system whose management is elaborated in paragraphs 1.143-1.145.

6. Master file for tabulation

1.201. When data editing is in progress, new files consisting of *clean* data records for each person are produced; these can be assembled so as to build a master file for later tabulations (often called the micro-data file). This master file, like the raw data files, can have a simple rectangular sequential format. There is usually no need for a database structure with index files. However, the master file should usually be maintained in geographical order, starting with the lowest geographical entity, sorted by housing unit, household or family. Another way commonly used to generate tabulations involving both the individual and the family, household or housing unit is to include in the head of household's record selected characteristics of these latter units. Alternatively, a single hierarchical file can be created involving, for example, person, family and housing unit records.

1.202. One of the most common and problematic errors in census files is that different EAs carry, for one reason or another, the same identification codes. Upon sorting the file, these EAs may have been merged, generating households with two heads of household, twice the usual number of members, two housing records, and so on. To avoid this problem, the EA geocodes should be checked carefully prior to the editing phase. This is best done by keeping a check file of all expected code combinations, and marking a code as "used" once an EA using the code has been processed. A module of this functionality can be part of the editing program. The check file will serve to flag impossible or double identification codes, and towards the end will show which EAs were expected but have not been processed.

1.203. Census *master data files* may become large. While files of such size can be processed in well-equipped desktop systems, two strategies are applied to reduce file size and to make data management simpler. The first involves working with the next lowest geographical entity as a basis, processing the data on this level and aggregating later to obtain national results. The second remedy is to apply on-the-fly compression/decompression to the storage medium. Census files can be compressed quite significantly to less than 20 per cent of their original size. Since tabulation programs access the data in sequential order, using the compressed data will result in a faster reading process.

7. Methods of tabulation

1.204. Preparing the tabulation plan is the substantive responsibility of the demographers and other subject-matter specialists who have the necessary expertise in interpreting the census results. This will require consultation with principal users of the census information (see paras. 1.73-1.76). The duties of the data-processing department should be limited to checking the logic of the various accumulations, designing the required programs and producing correct results within the shortest possible time. It is possible that the need for initially unforeseen tables will become apparent, so the census organization should always be prepared to produce additional aggregations. This may involve newly defined classes for certain variables, new types of cross-classifications, differently defined geographical subdivisions, and so on. However, if the information needed to produce these aggregations is not available in the master file, it will usually be prohibitively expensive to attempt to add this information at a later date.

1.205. The use of software packages specifically designed to produce census tabulations is highly recommended. These packages will make the job of preparing a useful program much simpler (and thereby help prevent errors). Usually designed for maximum execution speed (given that large files are to be

processed), these systems are often available free of cost, or for just a nominal fee.

1.206. Tabulation work can also be easily done by software belonging to either of two other classes: statistical analysis and database software. However, these packages have not been designed with large-scale sequential or geographical processing in mind. They may require substantially more computer time than a specialized census tabulation system. In countries with a limited capacity of powerful computers, this can be an important consideration.

1.207. Another factor that should be taken into consideration when selecting software packages for tabulation work is the availability of expertise in the census office. It makes no sense to switch to a software system that is only marginally better when this would require a major retraining effort. Moving to a different software environment should be the result of a careful analysis of all the factors concerned.

8. Provisional census results

1.208. Based on the summaries prepared by enumerators, provisional census results may be processed manually or by computer and issued soon after the enumeration is completed. Provisional results will normally cover information only on total population by sex and by major division. The number of households and housing units may also be derived easily from this exercise. Since provisional and final results may differ (for example, the summaries on which provisional results were based might contain errors), it is important that users be warned about the possibility of such differences. The final census results will be the output of the main tabulation programme (see chap. IX below). Tabulations may be based on all of the returns or on a sample. If some of the topics are collected on a sample basis only, proper weights will have to be applied in the tabulation stage to produce valid national estimates. In addition, the census office should be prepared to facilitate the production of tables requested by researchers and users (see paras. 3.41-3.58).

E. Databases

1.209. In order to expand the life and usability of the data, and as a complement to the standard production of tables, national statistical offices are encouraged to store the census data in various computerized database forms so as to better satisfy the full range of needs of internal and external data users. Census databases assist data users by providing easy access to a wide range of census data.

1.210. The establishment of such databases can enhance the dissemination of the census results as well as increase their usefulness by combining census data together with related information from other demographic inquiries in a common format. (An important special case is bringing together the data from prior censuses into a single database.) In addition, such databases can improve the coherence of the input and output processing systems.

1.211. Needs vary widely from user to user according to specific interests and circumstances. There is therefore no preferred approach to setting up a census or population database. For example, a basic decision must be made whether to provide micro-data, aggregated data or both. Other basic design issues to be considered include whether an effort is to be made to incorporate the new census results in an existing database structure or whether one or more new census databases are to be established, and if the latter is the case, whether the new database(s) will be exclusively in the form of a census database or constitute instead the nucleus of one or more population databases incorporating data from other sources. Consideration will also have to be given to such issues as identification of the different types of users, their information requirements, types of information to be stored in the database, sources and maintenance/update of information, processing of user queries, identification of the appropriate commercial software or, alternatively, whether it is feasible to develop such software, and selection of the appropriate hardware capable of supporting the current database and its anticipated growth.

1.212. Since building a census or population database requires careful planning and can be time-consuming, such implementation should fit within the global statistical framework of the organization, and be seen as an ongoing process both complementing the data dissemination strategy and strengthening the statistical capacity of the organization.

1. Database for micro-data

1.213. Micro-data (records of individual persons and households) collected in the census can be stored either in their raw form, or in their final edited form, or in a file that combines both raw and edited records. To limit problems of conservation, the data should be stored preferably on a medium of excellent reliability such as, currently, compact disk read-only memory (CD-ROM). As time goes by, new technologies for mass storage will undoubtedly evolve. Such new technologies present two issues for census managers and technicians: (*a*) the issue of when it will be appropriate to adopt a new technology as the standard and (*b*) that of the need to convert materials stored in older media

to the new standard or otherwise provide accessibility to the older materials.

1.214. With technological advances in mass storage devices and media, it is now feasible to store the full census data file (one character per byte) as a single large rectangular file. After adding a data dictionary that describes the data format and a tabulation module, one obtains a set that could be described as a census database. The micro data base requires a cross-tabulation programme which can be either part of the package or external. The software normally used for census tabulation still requires some prior training and may be confusing to inexperienced users. More intuitive tabulation software is available, but may be either too slow in processing or too limited in its options to be fully satisfactory.

1.215. Alternatively, micro data base software may reorganize the data in a transposed format (for example, one separate file per variable). This can substantially reduce the need for storage space and increase the speed of tabulations. However, establishing this kind of database is more complex, technically demanding and time-consuming.

1.216. It is also possible to store census micro-data in a standard commercial database. This approach has the advantage that many users are already familiar with such software. However, the storage space required would be comparatively large and the speed of tabulations low, particularly for those involving a large fraction of the records.

1.217. One of the main advantages of a micro data base is that it permits the retrieval of data, at least in principle, at any level of detail. Since micro-data could be used to obtain information on individual persons, families, households or family enterprises, privacy concerns must always be taken into consideration. In most countries, the use of the census data to identify individuals is prohibited by law. Moreover, the long-term reputation of national statistical authority may well be jeopardized if such disclosures occur.

1.218. There are a range of methods (such as sampling, introduction of random disturbances, recoding and aggregation) that can be used to make such micro-data available while still protecting individuals' rights to privacy. All have in common the fact that they sacrifice some information in order to eliminate or greatly reduce the risk of disclosure. However, it is important that census organizations interested in disseminating micro-data to outside users should take the appropriate precautions to protect privacy and confidentiality.

2. Database for macro-data

1.219. Aggregated census data can be stored in many formats, either as the results for one census, as a database covering more than one demographic inquiry, or in a broad database of statistical information. Whereas micro-data are saved to allow aggregations to be made that were not programmed initially, macro-data are stored to preserve earlier aggregations, to provide the broad public with readily usable information, and to prevent double work by those who may find that the summary data they require have already been produced..

(a) Publication equivalents

1.220. The simplest form of what could be called a database for macrodata is a straight copy of a publication on a computer medium, for example, diskette, tape or optical carrier. A machine-readable publication-equivalent database has the advantage of being cheaper to prepare than its hard-copy counterpart and of not being subject to the gradual degradation typical of printed reports. In addition, electronic or paper copies can be made quickly, with copying of only part of the publication if only part is required. A disadvantage is that a user needs a computer, and one possibly provided with compatible software, in order to have access to the census information.

1.221. The original printed publication can be captured on the computer medium by (*a*) exporting the camera-ready output to some portable file formats or scanning the printed pages, which generates raster-type images, or (*b*) copying the original computer files *American Standard Code for Information Interchange* (ASCII) text form and/or worksheet/database formats. The former approach makes it extremely simple to retain all the formatting and to include graphs and other illustrations. The latter solution has the big advantage of allowing the user to process the information further by computer without having to re-enter the data. This, as noted before, economizes effort and prevents transcription errors. The information content in this case is usually limited to tables, perhaps with some explanatory texts. Because of the important advantages of each of these storage methods, census organizations can use both. The user receives a computer medium holding the camera-ready output file or the scanned images as well as ASCII files of the tables. This is possible especially when the medium has a large capacity, as in the case of CD-ROM.

(b) Table-oriented databases

1.222. More advanced users may prefer that a census database of macro-data offer more than an equivalent of the printed publication. They might like to be able to manipulate the tables in various ways in order to obtain views or results that represent their specific requirements more precisely. Associated graphing and thematic mapping capabilities may also be welcome. Several statistical offices have undertaken attempts to fill this need. However, a major problem often encountered is that there

is no generally accepted definition of what constitutes a statistical table and of the rules that should be followed when designing one.

1.223. In a controlled environment, such as that of a given census or national statistical organization, it is possible to standardize table definitions. The most common way is to design a basic layout having a number of attributes that together fully describe a table. Appropriate software will then give users access to a number of operations that process the table or several tables at the same time. Examples of such operations are reclassifying a variable (for example, from one- to five-year age groups), eliminating a dimension from a multidimensional table or joining tables that have a dimension in common.

1.224. The availability of a standard table description language offers important advantages in exchanging tables as data-processing objects among national and international organizations. However, as mentioned before, some statistical tables are not easily pressed into the mold provided by formal descriptions. In this respect, it should be noted that statistical tables have little in common with the structures known as relational tables in popular database management systems.

(c) Time-series and indicators databases

1.225. Databases can also cover more than one demographic inquiry, and census results can be integrated with various other data sets, including the results of earlier censuses. In developing databases that are aimed at serving a heterogeneous user community, the issue of a number of basic trade-offs will have to be addressed. For example, on the one hand, the number of variables should be kept as small as possible to make the database easy to use; on the other hand, it should be as comprehensive as possible to address the broadest possible requirements. A minimum data set of versatile indicators should consist of those variables that are useful for a wide range of applications, and consistently available across space and time, and whose characteristics are clearly defined. In developing such a database, not only storage of the key indicators and variables themselves, but also the inclusion of some basic figures (absolute numbers or basic data) as a way of standardizing the basic statistical framework, is recommended.

1.226. It would be ideal to have a broadly accepted storage format that could improve interchangeability between producers and users. The principal problem is that series usually contain a number of descriptive attributes that have not been standardized. Such metadata -- key code, definition of the variable, periodicity, unit of measure, universe covered, number of terms recorded, base year (for an index), adjustment applied, and so on -- are required to interpret the series properly.

1.227. In addition, various processing modules (custom-made or commercial) can be attached, allowing seasonal adjustment, interpolation and extrapolation, model building, adding or subtracting of series if relevant, and so on. Spreadsheet manipulation, as well as graphing and mapping capabilities, can greatly enhance data presentation and analysis.

(d) Graphing and mapping databases

1.228. By having associated graphing and mapping capabilities, databases will greatly increase their usefulness. Ideally users should be able to generate the graphs and/or maps required by themselves, and then print or plot them, paste them into a report or make the images available for other uses.

1.229. Several census organizations have produced this kind of product, sometimes in cooperation with a commercial company. Many users want data for relatively small areas concerning such matters as home ownership, educational profiles, the labour market, and so on. While the database may be for one census, some historical information can be included to allow users to observe prevailing trends over time.

1.230. Both micro- and macro-data can be at the basis of these dissemination products. However, owing to disclosure problems as well as in order to increase processing speed, some form of prior aggregation is usually applied, for example by using summary data . Such summary data could also be combined with the general-purpose graphing and mapping software. However, this would result in a reduction of the user community to those able to handle rather more complicated processing jobs. Making available a census database with tightly integrated graphing and mapping capabilities (which usually implies a tabulation function) is an excellent way to improve the effectiveness of census information dissemination. If it is to be commercially successful, the product must be easy to use.

3. Geographical information systems

1.231. A geographical information system (GIS) can be seen as a system of hardware, software and procedures designed to support the capture, management, manipulation, analysis, modelling and display of spatially referenced data. In practical terms, such a system may range from a simple desktop mapping facility to a complete GIS system that is capable of solving complex planning and management problems or producing detailed georeferenced inventories. Its ability to use space to integrate and manipulate data sets from heterogeneous sources can make its application relevant to planning and managing the census process itself. For example, a GIS provides functions for the aerial interpolation of statistical data in cases where the boundaries of aerial units have changed between censuses.

However, the development and implementation of such a repository of georeferenced data are not easy tasks to accomplish, and simple desktop mapping systems generating thematic maps from a database of base maps and indicators will satisfy the needs of most census organizations.

1.232. GIS technology should be considered only at a level appropriate to the skills and resources available, and constitute an integral part of the overall work of the organization. Cooperative arrangements with other agencies should be pursued particularly with regard to the acquisition and maintenance of base map data, which should not be the responsibility of the statistical organization. Statistical organizations should proceed with GIS development or implementation only where, *inter alia*, it is feasible to maintain such a system during the intercensal years and where there is no dependence on external support.

1.233. Statistical offices may nevertheless develop GIS applications with population data and other georeferenced data from other sources for more advanced forms of spatial analysis. The task could be shared with other institutions, or be delegated completely to specialists elsewhere. The role of the census office would then consist in supplying census data at the right level and in the right format for such a system. Census offices provide vital information on current demographic conditions and future trends for policy makers in a range of sectors such as health care, education, infrastructure planning, agriculture and natural resources management; and the provision of spatially referenced census databases is an essential prerequisite of the facilitation of the use of demographic data in these fields.

1.234. In this regard, it should be noted that the GIS should be capable of generating additional geographical delimitations beyond those used in the census, such as school districts, water catchment areas or power service units. These entities will have to be constructed from the smallest geographically identified units available in the census (for example, block faces, grid squares, or EAs). If (as is the case in most developing countries) EAs are the smallest unit, this will have important implications for the establishment of EA boundaries. Cooperation with the authorities responsible for these geographical entities before the boundaries of EAs are drawn can reduce later problems.

1.235. Being a rather complex technology and a resources-consuming one, GIS needs to be introduced in developing countries carefully and gradually. As an alternative to immediately launching full-scale GIS applications, countries may start with a simple and robust design that is likely to be understood and maintained by a wide array of users, transferable to a wide range of software packages and independent of any hardware platform. GIS implementation in a developing country may follow a hierarchical strategy, with the national statistical office employing a high-end commercial GIS with extensive capabilities for handling and analysing large amounts of spatial data. Widespread dissemination of databases can then be achieved by creating a version of the finished databases using a low-end mapping software format for distribution at low cost.

F. Dissemination of the results

1.236. A census is not complete until the information collected is made available to potential users in a form suited to their needs. The information may be included in published tables and reports for general distribution, produced as tables in unpublished form for limited distribution or stored in a database and supplied upon request either on magnetic or optical media, or online.

1.237. All dissemination is subject to issues of (*a*) quality control, (*b*) possible disclosure of information about identifiable respondents and (*c*) copyright and ownership. In addition, the issue of cost recovery has become important to many statistical organizations. Each medium of dissemination offers respective advantages and limitations, and the choice of using one or several of them depends on the context, and on the intended categories of users. In most instances, these methods complement each other and can provide effective ways to reach out to the public and private sectors.

1.238. When data are provided in electronic form, special attention should be given to providing users with easy means for data retrieval. The options for obtaining the relevant meta-information and the data should be accessible in standard format (ASCII text) as well as in common database and spreadsheet format for easy retrieval and manipulation.

1. Publication of printed tables and reports

1.239. Printed publications - despite their production cost - remain in most countries the preferred choice for the dissemination of the main census results. At least for the present, they reach out to the largest number of potential census users. Paper media do not easily deteriorate, and do not require that the user have any particular equipment, software or technical skills.

1.240. It is important that plans be made and sufficient funds be allocated to ensure publication of the tabulations of widespread interest. The final tabulations should be presented and explained in a way that will facilitate their widespread use. The data should be shown for appropriate geographical and administrative divisions and classified by important demographic variables. The census publications should also contain information on how

the data were collected and processed, results of available evaluation studies, and appraisals of the substantive significance of the results presented. In addition, a sufficient number of maps should be provided in the census publication to allow the identification of the geographical units for which the statistics are presented.

1.241. Using tabulation programs to produce output directly for publication allows the traditional method of dissemination of statistics through printed reports to be integrated more closely and more inexpensively with the statistical production process. If the software used for tabulation cannot produce camera-ready output, the files containing output tables can be moved into a document that could be assembled using desktop publishing or word-processing software. Manual retyping of tables once generated should be avoided as much as possible to prevent transcription errors and delays.

1.242. The choice of how the actual printing is to be done entails in fact a trade-off involving quality, cost and speed. The best results can usually be obtained by sending the documents in computer-readable format to a professional printing plant. This will allow high-quality typesetting and the use of supporting colours. Alternatively, master printouts can be made in the census office and sent to the printer for cheaper duplication or offset printing. There are also affordable high-speed printing systems that can be directly controlled by the microcomputers in the census office.

1.243. Target dates for publication should be determined well in advance and processing and reproduction programmes should be planned accordingly. In addition to traditional methods of printing, there are various methods of reproduction available that are rapid, economical and legible, and these should be investigated.

1.244. As a cheaper alternative to printing, census reports can be reproduced on microform (microfilm or microfiche). This technique allows broadening the publication program without incurring proportionally higher costs. A drawback is that microform requires special reading equipment, and even then most users do not find it easy on the eyes. Dissemination of census publications on microform has largely given way to the electronic alternatives described below.

2. Dissemination on computer media

1.245. For some users, computer-readable magnetic and optical media are the preferred medium of dissemination. This is because data in this form are often cheaper to obtain, copy and store. In addition, they are directly available for further computer processing and analysis. Magnetic media are usually diskettes. Other media, while having a larger capacity, have at least up to now been insufficiently standardized among users. This is true for magnetic tape on open reel or in cartridges, as well as magneto-optical and removable hard disks. Important drawbacks of diskettes are their limited capacity and vulnerability. Adequate storage and frequent recycling are necessary to avoid demagnetization and loss of data. One megabyte (MB) will hold the equivalent of about 350 pages of text, and more if the file or files have been compressed. This capacity is fine for a single publication, but obviously not sufficient for dissemination of a statistical database.

1.246. Technologies such as CD-ROM provide a much better medium of distribution for large data sets that are not subject to frequent change or updating. Standard CD-ROMs are read-only optical media. They have a very large storage capacity, they are durable and they can be produced inexpensively. Because the results of a particular statistical inquiry such as a census are supposed to be final, dissemination on a read-only support should be satisfactory.

3. On-line dissemination

1.247. With the surge in importance of the Internet and the World Wide Web, on-line dissemination of all kinds of information, including statistical information, has gained a new impetus. The advantages of on-line dissemination are found primarily in terms of speed and cost. The information is available to the user as soon as the provider has loaded it on the server and cleared it for access by users. The cost to the user is limited to the expenses of communication with the Internet service provider - usually equivalent to the price of a local telephone call - plus whatever charge the information provider is placing on top of these. There is no expense involved in the production and distribution of printed materials or other data supports.

1.248. On-line dissemination of data had been common well before the Internet gained prominence. The simplest option open to statistical organizations has been a bulletin board system (BBS), but now it is not just available for internal communication but accessible to a broad community of information users. One could use the same BBS for both internal and broad community communication, with the granting of access rights in certain areas to privileged users only. Security measures including passwords, call-back procedures and so on can be used to exclude unauthorized users from reaching these areas. However, this is risky, since resourceful “hackers” may find their way around the barriers and gain entrance to confidential information. There are hardware and/or software security systems, known as “fire walls”, that limit the exposure of a computer or network to

malicious infiltration from an external location; nevertheless, it is preferable to run a BBS for information dissemination to outsiders, or an Internet site, completely separately from the other computer systems. Ideally a separate computer, not permanently attached to any internal computer network, should be used. Such a separate system is probably an essential requirement under the census confidentiality laws and regulations of many countries.

1.249. The BBS or Internet site can be used not only to make information available as soon as it has been cleared, but also for other forms of communication with users. Possibilities include on-line ordering of publications and one or more receiving areas for questions that would be answered later through the same medium by appropriate specialists. One such area could be the census forum or "chat room".

1.250. Some BBSs and Internet sites support "door" or "gateway" applications that allow users to run outside programs on the computer on which the BBS application or Internet web server operates. Interactive access to census outputs can be offered to most types of databases and census products, including reports, publications, tables, maps and graphs. For example, there may be a database of aggregated census data for small areas - or a micro-data database - that users can access in this way. When the required data are not readily available, users could run an on-the-spot query to obtain and retrieve results that satisfy their needs. This can be done by offering to Internet users census micro-data samples and an interactive tabulation system. Users can then select records from these data sets that satisfy certain parameters and compute statistical information, such as two-dimensional cross-tabulations of either original or recoded variables. Program execution by users on the outside, however, raises important questions of cost and confidentiality, which have to be resolved.

1.251. Another electronic dissemination method, limited in depth but broad in accessibility, is television videotext. Quite a few statistical offices already maintain on certain television channels a number of pages of actual information that are accessible by anyone having a television set with videotext capability. From a public relations point of view, this is an excellent way to bring the work of the statistical office to the attention of a very broad audience. Since the taxpayer generally still funds an overwhelming part of the costs of official statistics, such a consideration is not to be neglected.

1.252. A hybrid solution for data dissemination that appears to combine the advantages of several approaches is one whereby the statistical or census organization makes basic data available to users on a computer-readable medium, while additional information may be accessed by telephone or some other on-line connection. This will usually take the form of a package that contains basic data, local access software and telecommunication software. The basic data may contain existing time-series, report files and the like, as well as country and region maps that can be used to generate thematic maps with various indicators. Having the base maps already available saves the cost and time of having to retrieve them on-line from the data disseminator.

1.253. If the user finds that particular statistical information is not yet available on the physical distribution medium, he or she can activate the telecommunication module. This will contact the remote BBS, where the user can then browse to determine whether the data required are to be found therein. Since this hybrid solution involves providing the user with an updated base set at regular intervals, it facilitates finding an acceptable procedure with respect to charging for the service provided. Several national statistical offices are experimenting with, or have already implemented, this particular dissemination format.

4. Privacy and confidentiality

1.254. All the information stored in the census database allows the production of tables not only for very small areas (such as enumeration areas or villages) but for all individual units in these areas. Therefore, when a census database is constructed, not only technical considerations but also the maintenance of confidentiality and the protection of individual privacy -- which must be a primary consideration in designing the data-collection and data--processing programme -- must be taken into account. Accordingly, micro-data, such as name and local address, or the unique characteristics that permit the identification of individual respondents, must be removed from the database or otherwise altered.

1.255. The same care must be taken if a transcription of information from original questionnaires (that is to say, from a representative sample) is needed for use by qualified agencies and research institutes engaged in special studies beyond the purview of the regular census programme. Such needs have sharply decreased with the almost universal use of computer technology. However, when such a procedure is possible under the census law, individual privacy should be ensured and no exception should be authorized.

5. Acceptance of results

1.256. In countries with limited prior census experience and without a well-functioning civil registration system, where population data are based largely on estimates, it is important to inform the users, particularly the governmental authorities, that

the census results could differ from such estimates and to explain the reason for these differences. In some cases, there may be doubts expressed about the census results; usually those doubts focus narrowly on the total population of the country, major subdivisions or population sub-groups, rather than on the bulk of the census data relating to characteristics of the population or on the data for local areas. In this situation, it may be possible to take such doubts into account by modifying the census evaluation programme or by adding appropriate qualifications to the text of the census reports or in tabular footnotes. Nevertheless, the Government may proceed with the processing and dissemination for official purposes. In any case, every effort should be made to process and evaluate the full census and to make appropriate use of as many of the census tabulations as possible.

G. Evaluation of the results

1. Purpose of census evaluation

1.257. It is universally accepted that a population census is not perfect and that errors can and do occur at all stages of the census operation. Errors in the census results are classified into two general categories - coverage errors and content errors. Coverage errors are the errors that arise due to omissions or duplications of persons or housing units in the census enumeration. The sources of coverage error include, *inter alia*, incomplete or inaccurate maps or lists of enumeration areas, failure on the part of enumerators to canvass all the units in their assignment areas, duplicate counting, persons who for one reason or another will not allow themselves to be enumerated, erroneous treatment of certain categories of persons such as visitors or non-resident aliens, loss or destruction of census records after enumeration, and so forth. Content errors are errors that arise in the incorrect reporting or recording of the characteristics of persons, households and housing units enumerated in the census. Content errors may be caused by poorly phrased questions or instructions, or enumerator errors in phrasing the census questions; inability or misunderstanding on the part of respondents in respect of answering specific items; deliberate misreporting; errors due to proxy response; coding or data entry mistakes, and so forth.

1.258. Many countries have recognized the need to evaluate the overall quality of their census results and have employed various methods for evaluating census coverage as well as certain types of content error. Comprehensive evaluation should however also include assessment of the success of census operations, in each of its phases, including such activities as the census publicity campaign. Countries should ensure, therefore, that their overall census evaluation effort addresses the census process, as well as the results. The present section is devoted to evaluation of the results. However, the section on the quality control and improvement programme (paras. 1.143-1.164 above) provides further recommendations relating to controlling and assessing the quality of census operations.

1.259. Evaluation efforts focused on census results should generally be designed to serve one or more of the following main objectives: first, to provide users with some measures of the quality of census data to help them interpret the results; second, to identify as far as is practicable the types and sources of error in order assist the planning of future censuses; and third, to serve as a basis for constructing a *best estimate* of census aggregates, such as the total population, or to provide census results adjusted to take into account identified errors. As discussed below in the following subsection, a number of methods exist for carrying out census evaluation. In practice, many countries use a combination of such methods in order to fully serve these objectives.

1.260. The final publication of census results should include an estimate of coverage error, together with a full indication of the methods used for evaluating the completeness of the data. The publication should also provide users with some guidance on how they might use the evaluation results. It is also desirable to provide, as far as possible, an evaluation of the quality of the information on each topic and of the effects of the editing and/or imputation procedures used.

1.261. The range and quality of editing in regard to the correction of the inconsistent data and imputation possible in a population census are greatly enhanced by the use of computer edit programmes that permit inter-record checks (for example, the replacement of missing values based on one or more items on the basis of reported information for other persons or items). If any imputation is made, the topics affected, the methods used and the number of cases affected should be clearly described in the census report.

1.262. The process of census evaluation should not be permitted to delay the prompt publication of the principal results of the census. Evaluations of the completeness and accuracy of the data can be issued after the initial census results are published.

2. Methods of census evaluation

1.263. The choice of evaluation methods to be used depends upon the evaluation objectives. These, in turn, depend on national census experience in terms of past and anticipated errors, user and public concerns, and the financial and technical resources available for evaluation. The decision whether to measure coverage error, content error or a combination of the two must be made. In addition, both gross and net error must be

taken into account in developing the overall evaluation plan. Gross coverage error in a census is defined as the total of all persons omitted, duplicated or erroneously enumerated. Net coverage error takes into account the underestimates due to omissions and the overestimates due to duplications and erroneous inclusions. When omissions exceed the sum of duplications and erroneous inclusions, as is usually the case in most countries, a net undercount is said to exist; otherwise, a net overcount results. Similarly, both gross and net content error have to be considered in the evaluation design.

1.264. Numerous methods are available to estimate the coverage and content error of censuses. These include simple techniques of quality control such as internal consistency checks. Comparisons of results with other data sources including previous censuses, current household surveys and/or administrative records are also useful techniques. Such comparisons may be made in aggregate, that is to say, by comparing the overall estimates from two sources (net error only). Alternatively, record-checking, in which individual census records are matched against alternative sources and specific items of information are checked for accuracy, may be used. Both gross and net errors can be estimated in record checks, which may involve field reconciliation of differences, a costly exercise that cannot be overlooked. An important but complicating factor in the use of record checks is the requirement of accurate matching. It is essential to plan carefully for this aspect, since the operation can be tedious and costly. It should be noted that record checks are best employed to study the coverage of certain segments of a population, such as children whose birth records are complete, since these checks are, by definition, limited to subpopulations with complete, accurate records.

1.265. Demographic analysis and post enumeration surveys[21] are two very important methods for evaluating census data, and these are discussed in further detail in the following two subsections.

3. Demographic analysis for census evaluation

1.266. Demographic analysis offers a powerful methodology for evaluating the quality of a census and countries are encouraged to use demographic analysis as part of their overall census evaluation methodology. A wide variety of demographic techniques have been developed and used, ranging from visual inspection of census data to comparative analysis of two census age distributions. A basic procedure for assessing census quality on age-sex is graphical analysis of the population pyramid. Age-heaping or the tendency of respondents to report a particular ending digit is a useful internal consistency check, as are sex ratios by age and certain summary indices of age-sex data, including the United Nations Age-Sex Accuracy Index which extends age-sex ratio analysis by observing deviations of the observed age-gender ratios from the ones expected for each five-year age group and combining the results into a single score.[22] Other summary indices are Whipple's Index and Myer's Blended Index, used for judging age-heaping.

1.267. Stable population theory is also used to assess the quality of census distributions by age and sex. It is based upon measuring the reported age-sex distribution against that of an appropriately chosen stable population. Its usefulness is demonstrated by the fact that the conditions assumed under the model -- constant fertility and constant or recently declining mortality -- are satisfied in a number of countries. Recent declines in fertility in a given country render the technique somewhat less useful as an evaluation tool, however, since the technique is sensitive to changes in fertility levels.

1.268. The methods mentioned above, while useful in providing overall assessment of census quality, cannot differentiate the sources of census error in terms of the relative contributions from under-coverage (or over-coverage) or content error. Better information about coverage error, through demographic analysis, derives chiefly from comparative analysis of data from successive censuses, in which four methods are used.

1.269. The four methods include (*a*) derivation of an expected population estimate taking account of vital registers of births, deaths and net migrants between censuses, as compared with the latest census, (*b*) population projections based on the results of the prior census plus data on fertility, mortality and migration from various sources and comparing the projected estimates with the new census results (cohort component method), (*c*) comparison of two census age distributions based on intercensal cohort survival rates and (*d*) estimates of coverage correction factors using regression methods to make the age results from the two censuses mutually consistent (cohort survival regression

[21] Note that for the purposes of this publication, a post- enumeration survey, or PES, is defined as being a post-census *evaluation* survey.

[22] See *Methods of Appraisal of Quality of Basic Data for Population Estimates: Manual II*, ST/SOA/SER.A/23 (United Nations publication, Sales No. E.56.XIII.2).

method).[23] It should be noted that the first two methods would likely have to be restricted to evaluation studies of coverage at the national level, especially in countries that do not have good subnational data on migration.

4. Post-enumeration survey

1.270. The post-enumeration survey (PES), a special kind of survey designed to measure census coverage and/or content error, has been used effectively in a wide range of countries in recent decades.

1.271. While a PES can be designed to provide a comprehensive evaluation of coverage and content error especially when supplemented by and integrated with detailed demographic analysis of census quality, the methodology of a sound PES is complex, so that countries must accordingly weigh with care the demanding technical requirements and the costs of conducting a successful PES, and elaborate a clear statement of its objectives, before deciding to undertake such a survey. Careful advance planning is crucial. To be valid, a PES has to function within a number of operational and statistical constraints. These include the requirement that the PES be carried out within a few months of the end of the census to ensure that the impact of natural population changes (births, deaths and migration) and lapses in respondent recall do not hopelessly complicate the exercise.

1.272. The methodology for a PES may entail either a single or a dual system estimation procedure for estimating the "true" total population and hence, the coverage error which is typically an undercount. When dual system estimation is used, an essential property in terms of design is PES independence of the census. Independence implies the presence of many features that are often difficult to introduce in actual practice, including the use of a frame for PES sampling that is unrelated to the census operation, a PES staff of enumerators and other field personnel who are different from the census staff, and organizational management of the PES operation that is under the general supervision of someone other than the census director. When sufficient independence cannot be achieved, a PES design that relies upon single system procedures may be usefully employed. Even though the sampling frame is then based on the census and the PES managed by the census director, this methodology still assumes that the PES, with its better trained enumerators and more intensive field procedures, will give results superior to those of the census. However, unlike the dual system approach, this method cannot account for those persons missed in both the census and the PES, and so the degree of under-coverage is usually understated when a single system PES is used.

1.273. Another basic property of PES design and execution, irrespective of whether single or dual system estimation is used, involves matching and reconciliation. Matching the PES person-record or household-record against the corresponding census record is an operation whose performance must be of very high quality to ensure that inaccuracies in the PES itself do not effectively ruin the estimate of coverage error. Matching is especially difficult in countries where many surnames are identical and well-defined street addresses do not exist. Part of the matching operation usually involves a field visit to reconcile differences between the census and the PES as regards either coverage or content. Reconciliation of course adds another dimension of cost and complexity, since it entails a second visit to the field for PES-related purposes.

1.274. Clearly defining the objectives of a PES is the first and most crucial step in planning the survey. The objectives might include estimation of coverage error at the national level; estimation of coverage error for major subnational domains or population sub-groups, each with its own specified level of precision; and/or measurement of content error for specific census items.

1.275. As mentioned, the design of a post-enumeration survey is complex and there are various alternatives, primarily depending upon whether single or dual system estimation is to be utilized. A number of excellent references are available that set out highly detailed procedures for designing a PES and the conditions under which they may or should be considered.[24]

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[23] Detailed methodologies including step-by-step procedures for applying all the demographic techniques mentioned above, plus others, are contained in chapter 5 of *Evaluating Censuses of Population and Housing*, (Washington, D.C., United States Department of Commerce, Bureau of the Census, 1985). Numerical examples are also given in the chapter regarding the application of these techniques in many developing countries. The complete publication is also useful as an overall census evaluation reference.

[24] The most comprehensive material is found in chapter 2 of *Evaluating Censuses of Population and Housing*, Washington, D.C., (1985), United States Department of Commerce, Bureau of the Census, *Developments in Dual System Estimation of Population Size and Growth*, K. Krotki, ed. Alberta, Canada, University of Alberta Press, 1978), is also highly recommended for its exposition of the use of PES in census evaluation; especially relevant therein are, "The role of dual system estimation in census evaluation,"(chap. 10); E. Marks and J. Rumford, "The 1974 post-enumeration survey of Liberia" (chap. 11); and C. Scott, "The problem of independence and other issues," (chap. 12).

5. Re-interview surveys

1.276. Sometimes a post-census survey is designed to measure content error only, in which case it is usually known as a re-interview survey. The advantage of a well-designed re-interview survey is that the results are more accurate than those of the census insofar as the operation is much smaller and can be more effectively controlled. Estimates of relative response bias can be obtained from a re-interview survey, which (rather than the census) is generally taken as the standard in this area on the grounds that the survey, with its better-trained interviewers and more intensive survey procedures, yields superior results.

1.277. As part of the design of some post-enumeration surveys, a sample of the original census enumeration districts, blocks or areas is chosen and recanvassed for the PES. As regards methodology, this constitutes a useful *re-interview* technique for measuring content error, and such an element in the design is often put into practice because the matching operation between survey and census records is then dramatically simplified. When this technique is also used to estimate census coverage error, the single system estimation methodology has to be employed since the PES and census are not independent.

H. Analysis of the results

1.278. In order to ensure the fullest possible utilization of census results by national and local governmental authorities, by academic researchers and by others, it is advisable to draw up a comprehensive and coordinated programme of analytical studies, phased over a period of several years. This will help allocate effort and resources in such a way as to ensure that important policy needs are adequately met, undue duplication of research effort is avoided and priorities are observed as far as possible. In these studies, the data of the current census should be examined not only by themselves but also as complemented by relevant data from other sources and from earlier censuses, in order to obtain a broader context, improve the estimates and establish trends.

1.279. The analytical studies to be included in such a programme will vary according to the needs and circumstances of the country. The programme may include descriptive summaries of results, policy-oriented analyses of census results and detailed analytical studies of one or more aspects of the demographic and social situation of the country. Some of these studies may be undertaken by the census organization itself, but others - particularly the more time-consuming studies - can most effectively be carried out in cooperation with other research organizations. In any case, it is desirable to invite specialists from other governmental offices and experts outside of the Government to take part in drawing up this programme of studies and it is natural that they would play an important part in the execution of various parts of the analytical programme.

1.280. One important aspect to be considered in establishing a programme of analysis is the possible use of census results in achieving the goals and objectives of population, human settlements or similar policies and strategies at the national and local level and in applying available resources effectively towards the improvement of conditions in these fields. For this purpose, it will be necessary to analyse population and housing census results within the framework provided by other available information so as to achieve an integrated approach to the solutions of population, human settlements and similar problems.

1.281. A permanent census office should be the central repository of all census results; it would thus be equipped with the information needed for comparative studies, which will indicate long-term trends in the phenomena investigated. However, to facilitate the fullest possible use of census results by others, subsidiary depositories should be established that serve different substantive or geographical groups of users.

1.282. Aside from the studies that are part of the overall census programme, additional analyses carried out on their own initiative by research organizations, universities or other experts should be encouraged.

I. Systematic recording and dissemination of census experience

1.283. It is recommended that every country should prepare and, if possible, publish a methodological and administrative report providing specimens of the census questionnaires and forms, instructions for the enumeration, and detailed information on the cost of the census and on the implementation of the census budget, as well as information on the manner in which the census was planned, organized and conducted, the important methodological and other problems encountered at the various stages of the programme, and points to be considered in future censuses. It is important that the report be as comprehensive as possible, covering all stages and aspects of census planning and operations, including fieldwork, processing, analysis, dissemination, evaluation, and so forth. This report would both assist the users of the census results in appraising and interpreting the data and facilitate the proper planning of future data-collection programmes, including population and housing censuses.

1.284. The cumulative experience of past censuses in a country is definitely of great help in the preparation of a new census. Because of the lapse of time between censuses and the likelihood

of changes in upper-echelon personnel even in a permanent census office, it is most useful to assemble complete records on the methodology of each census, an evaluation of the techniques employed and detailed records on costs and implementation of the census budget. These records should be arranged in such a way as to ensure that information on each aspect of the census operation may be found easily (see para. 1.61 above for an indication of the information required on costs and resources).

III. Use of sampling in population and housing censuses

1.285. The potential role of sampling in population and/or housing censuses is extensive. On the one hand, sampling can be an integral part of the planning, data collection and operations, analysis and evaluation of the census. On the other hand, the census may serve as a sampling frame for subsequent sample surveys or survey programmes.

1.286. Important aspects of the use of sampling in connection with the census are set forth below in three sections: the first on features of acceptable sampling operations, the second on sampling as an integral part of the census and the third on the census as a frame for subsequent sample surveys.

A. Features of acceptable sampling operations

1. Accuracy and precision

1.287. The use of sampling in a census entails an awareness of the precision desired in sample estimates. The higher the levels of precision, the larger and/or more complex -- and hence the more expensive -- the sample. A distinction is to be made between the precision of a sample estimate and its accuracy. Precision can be measured by the standard error (which gives a measure of the error due to sampling compared with a complete enumeration under the same general conditions of inquiry), while accuracy is measured by the difference between the true value (which is generally unknown) and that obtained from an inquiry, whether on a sample or complete enumeration basis.

1.288. Sampling methods employed in census-taking, with the exception of pilot tests, should make use of probability samples as opposed to judgmental, purposive or other non-scientific methods. For the successful execution of a probability-based sampling plan, it is essential that scientifically designed selection procedures be strictly followed. The sampling procedures must be such that a known positive probability of selection can be assigned to every unit in the population. The inverse of these probabilities must be calculable so that they can be used to estimate population values and to calculate the measure of precision of the estimates (in other words, their sampling error). Selection procedures must be faithful to the design so that deviations from prescribed standards or instructions are minimal.

1.289. Of course, estimated results based on samples are subject to sampling errors in addition to various types of *non-sampling* errors that are also present in database on a complete enumeration. The smaller scale of a sample operation may make it possible, nevertheless, to employ interviewers of higher calibre, to devise and pose questions of greater detail and to minimize response errors. As a result, non-sampling errors, which affect the accuracy of the estimates, are likely to be fewer in a well-executed sample than in a complete enumeration.

1.290. Whenever sampling is used in the census data collection, provision should be made for computing estimates of sampling error (variances), at least for the major items of interest. While a variety of techniques can be employed to estimate variances, the particular technique adopted should be one that reflects the actual sample design used.

2. Census resources

1.291. Effective planning of sample operations consists in meeting the requirements of accuracy by making judicious use of whatever expert knowledge and equipment are available in a particular country. Specific sample plans aimed at the same objective may vary from country to country, depending on the quality and quantity of census resources. In planning a sample operation as part of the census effort, it is important to bear in mind considerations of cost and competent direction.

1.292. The question of cost in sampling is of crucial significance. Numerous factors govern the cost of sampling and it is essential that these be fully weighed before a decision is made to associate a sample plan with a complete count. One important factor, for instance, is the size and complexity of the sample, which in turn are governed by the objectives of the survey and the procedures that are regarded as most efficient.

1.293. Sample operations should be conducted under the direction of a competent statistician who is conversant with both the theory of sampling and the practical operations of carrying out sample surveys in the field. The advice of such a sampling statistician is indispensable at all stages of the sample operations from planning and sample design to estimation and calculation of variance.

1.294. In order to ensure that the sample is selected strictly according to the design and to avoid any possibility of bias in sample selection, it is strongly recommended that the actual selection of the sample units should be carried out either in the central office or in regional offices under the direct supervision of a sampling statistician.

B. Sampling as an integral part of the census

1.295. Depending on the types of problems to be tackled, a country may consider applying sampling methods in one or more of the following phases of a population census: tests of census procedures, data collection for (usually) a subset of topics in addition to those for which universal coverage is required, post-enumeration field checks, quality control of data-processing, advance tabulation of selected topics, and final processing and tabulation. Each phase is discussed below.

1. Tests of census procedures

1.296. Planning the various phases of a census often involves choosing among several alternative procedures. Tests conducted on a sample basis provide the best means of determining which alternative to use. The results of such tests facilitate a more desirable allocation of available census resources than is possible otherwise.

1.297. The nature and extent of census testing depend on the information that is available from previous censuses or other sources. If, for example, prior housing statistics are lacking in a country, a pilot survey may be called for to assess in advance the practical problems that will be involved in including specific housing topics in the census.

1.298. When carrying out census tests, probability samples are not usually necessary. Since the purpose of most census pilot and pre-tests is to judge the operational feasibility of a proposed course of action for the main census rather than make population estimates, purposive samples can usually be used for such tests. Purposive selection of one or a few geographical areas is generally preferable for such feasibility testing. Purposive samples are also particularly useful when it is necessary to test census questionnaires and methods in areas with particularly difficult conditions. On the other hand, when overall quantitative measures are needed for comparing efficiencies of different procedures (for instance, in examining the anticipated response errors arising from different systems of enumeration), random sampling procedures must be used.

2. Enumeration of topics in addition to those for which universal coverage is required

1.299. The expanded needs in most countries for extensive and reliable demographic data have made the use of sampling a cost-effective part of census-taking. Sampling is increasingly being used to broaden the scope of the census through the asking of a number of questions of only a sample of the population and households. This use of sampling makes it feasible to obtain urgently needed data of acceptable precision when factors of timing and cost would make it impractical to obtain such data on a complete-count basis.

1.300. It is important to bear in mind, however, that national legal requirements may make it mandatory to collect certain information on a complete-count basis. Legislation in many countries prescribes complete population enumerations at particular times or makes certain political or administrative dispositions dependent on particular results from a complete enumeration. For example, the apportionment of seats in the legislature among the civil divisions of a country often depends on the number of persons actually enumerated in each division. The data needed for this and similar purposes cannot be collected by sampling.

1.301. Census information that is collected for only a sample of the population and/or housing units is usually obtained by one of two different methods. The first pre-designates a systematic subset of census households to receive a so-called long form, or the census form that contains the detailed questions on all topics. Depending on the sample requirements which, in turn, take account of considerations of cost and precision, the systematic subset that is designated for the long form may represent, for example, 1 in 4, or 1 in 5, or 1 in 10 of the census households. Under such a sampling scheme, all other households in the census will receive a short form containing only those questions intended for universal coverage. If countries choose this option, it is recommended that the pre-designation of the sample households that are to receive the long form be carried out at a central location by supervisory statistical staff, since it has been shown that when the enumerators themselves actually identify the sample households the results are often biased.

1.302. The second method of sampling often used involves designating a sample of enumeration areas to receive the long form. In this approach, all households in the designated enumeration areas receive the long form and all households in the remaining enumeration areas receive the short form. The advantage of the first method over the second is that the sampling precision of results is greater in the former because clustering effects increase the sampling variance when whole enumeration areas are used as sampling units. On the other hand, the advantage of the second method is that different enumerator staffs may be trained more easily, since one set of enumerators can be trained only for the long form and the other set only for the short form.

1.303. It is important to make certain that asking questions that are not asked of all persons does not give rise to legal, administrative or even political issues, since census information is required under statute and often with penalty for refusal.

1.304. The suitability of particular questions for a sample enumeration depends on the precision with which results are needed for small areas, and subpopulation groups, and on the enumeration costs involved.

3. Post-enumeration surveys and field checks

1.305. As discussed in the section on the evaluation of census results, it is universally recognized that census-taking is not perfect and that errors can and do occur. One of many methods of evaluating the census results discussed in that section is the use of post enumeration evaluation surveys (PES) and other post-enumeration field checks. Whenever a PES is utilized for census evaluation, it is important of course that the design of the PES be based upon sound probability sampling methods.

1.306. The sample design for a PES or other post-enumeration check must duly take account of the measurement objectives of the evaluation study. These usually include the need to estimate census under-coverage with a certain degree of reliability. In addition, the estimates of under-coverage may be wanted for geographical areas such as provinces or States, and large cities, for urban rural comparisons and so forth. Such requirements also greatly affect the sample design of a PES, as the necessary sample size is increased substantially when estimates of subnational coverage (or under-coverage) are wanted.

4. Quality control and improvement programme

1.307. As mentioned earlier, sampling can be used effectively for measuring and controlling the quality of many phases of census operations (see paras. 1.143-1.164 above). These include, in particular, the editing and coding of questionnaires, data entry and tabulation. Even in a country of medium population size, these operations involve millions of questionnaires.

1.308. Every effort should be made to keep operational features as simple as possible. In general, a systematic pattern of selection with random starts is preferable to a random pattern. Measures of quality must be adaptable to simple record-keeping systems.

5. Advance tabulation of selected topics

1.309. A complete national census is a huge undertaking and several months, or even years, may elapse before some of the tabulations are published. It is therefore natural that some countries, particularly those with very large populations, should consider advance, provisional tabulations as a way to ensure that key data are available and are disseminated in a timely manner. Sampling can be availed to serve this need in countries that decide to prepare advance tabulations.

1.310. Preparing advance tabulations through sampling has certain disadvantages, however. For the final results to be given, the results tabulated for the sample units have to be integrated with those tabulated for the non-sample units. These operations may increase the total tabulation time of the census and its cost. Precautions are necessary in order to minimize the delay that may be caused in the preparation of the final results. Moreover, issues concerning the differences between the advance tabulations (which are *estimates* based on a sample) and the final tabulations (which for some topics may be complete counts, while for others estimates based on the long-form sample) must be resolved to the satisfaction, and with regard to the comprehension, of users. Finally, the need for an extensive set of advanced tabulations has been reduced in recent years because the widespread use of microcomputers has reduced the time that was being taken to process the census in many countries. In these circumstances, advanced tabulations programmes are likely to be needed only by very large countries that anticipate extended data-processing operations.

1.311. If sampling has been used as an integral part of a complete enumeration to secure information for a subset of topics, as described above, the same sample of units (persons, households or enumeration areas) can also provide a sample for advance tabulations of the census proper. Such a sampling scheme, if it is devised efficiently, with a view to securing additional census information by small administrative units, may offer excellent opportunities for conveniently obtaining advance tabulations for the same administrative units.

1.312. Even when no sampling has been used in the actual enumeration, a sample design for advance tabulations may be comparatively simple to achieve because the complete census returns provide a sampling frame which can then be used to select the sample for the advance results.

6. Final processing and tabulation

1.313. The principal limitations of complete processing and tabulation of all the information collected in a population census and/or housing census are the length of time it takes and the

costs. Consequently, a country may decide that processing and tabulation programmes should provide for the complete tabulation of a set of core items, such as those on the short form (for countries that use sampling for long-form items), while certain other characteristics are processed and tabulated only on a sample basis.

1.314. In considering the advisability of using sampling in connection with the final processing operations, the following considerations may also be taken into account. There are certain population and housing characteristics about which information is needed only by large areas and for the country as a whole. Sampling makes it possible to obtain detailed tabulations for large areas, with reasonably small sampling errors, at a much reduced cost and in a shorter time than that needed for tabulations on a complete basis. However, since one of the purposes of a census is to serve local interests, the feasibility of sampling is determined to some extent by the size of the smallest localities for which separate tabulations can be reliably produced.

C. The census as a basis for subsequent sample surveys or survey programmes

1.315. An essential ingredient of probability sample design is the existence of a complete, accurate and up-to-date sampling frame. A sampling frame is defined essentially as comprising the materials from which a sample is selected. A sampling frame may be a list of small areas. It may also be a list of structures, households or persons. The census can be used to construct either type of frame, or both; indeed, most countries do use their census for such purposes. The census frame is almost always the departure point for the design of a household sample survey. It is important to note that an old census - even one that, in rapidly changing or growing countries, is one or two years old - may be unsuitable as a frame. In such cases, it is essential to update the census frame with current fieldwork before using it as a frame for a household sample survey.

1.316. It is important to give careful consideration to the construction of a census for subsequent use as a survey sample frame when the census is in the planning stage. The above-mentioned requirements - accuracy, completeness and currency - must be addressed. This means, for example, that care must be taken to ensure that the entire country is divided into enumeration areas, and that all land area belongs to one and only one enumeration area. In terms of their size, the enumeration areas are important not only for the census itself but also for later use as a potential stage of sampling for surveys; this feature should therefore also be given due consideration by census planners.

1.317. Maps and prior census information concerning small areas are very important for the devising of a good sample plan. The maps are particularly valuable if they unambiguously indicate boundaries of small areas that can be used as primary or secondary sampling units. Population and household counts for the enumeration areas, taken from the census, are also a highly useful ingredient for post-census sample survey design planning. This information is often used to establish measures of size for the selection of first- or second-stage sampling units, or to help in various stratification schemes.

IV. Units, place and time of enumeration for population and housing censuses

A. Units of enumeration

1.318. Since individual enumeration is an essential feature of population and housing censuses, clarity about the unit of enumeration is an essential element of census planning. In the case of the population census, the primary unit of enumeration is the person. There are two general frameworks within which individuals are identified: (*a*) households and (*b*) institutions, as a subset of collective living quarters.[25] The household is a general framework within which most individuals are identified, since the majority of the population live in households, and the household is also a unit of enumeration in its own right. Because the household is also a unit of enumeration for the housing census, careful identification as a preliminary step in the enumeration can facilitate the efficient collection of the data and the control of its completeness in both types of census.

1.319. As mentioned above, the second framework within which individuals are identified comprises institutions, as a subset of collective living quarters. In addition to persons identified within households, there are persons living in institutions who are not members of a household. This group constitutes the institutional population, which is also investigated in population censuses.

1.320. For the housing census, the household is one of the three units of enumeration; the other two units are living quarters (in other words, housing units and collective living quarters) and buildings. It is important to bear in mind that, in conceptual terms, these three units are clearly distinguishable. There is not necessarily an identity or exact correspondence among these concepts nor are the terms themselves interchangeable. Several households may live together in one set of living quarters and one household may occupy more than one set of living quarters. Similarly, several sets of living quarters may together occupy one building and one set of living quarters may occupy more than one building.

1.321. It is recognized that there may be difficulty in some countries in maintaining independent concepts of "household" and of "housing unit".[26] However, the advantages in terms of the usefulness of the data that result from preserving separate concepts usually outweigh the additional effort required in maintaining them.

1.322. In carrying out a census, it is essential that the units of enumeration be clearly defined and that the definitions be included in manuals of instruction for the enumeration and in census reports. In order to reduce the possibility of difficulties in applying the definitions recommended below, countries may find it necessary to expand the definitions and to illustrate them in terms of national conditions and circumstances. Post-enumeration field checks can provide a useful means of determining to what extent the national definitions of the units of enumeration have been applied in the field and the consequent effect on census results.

1. Person

1.323. For census purposes, the term "person" denotes each individual falling within the scope of census. As emphasized above (para. 1.318), a person can be identified as belonging to the household population (that is to say, the population living in households) or to the institutional population (that is to say, the population living in institutions, as a subset of collective living quarters) as defined in paragraph 1.330 below. Although each person must be included in the count of the population, there will be some variation in regard to the persons for whom information is collected on different topics. The variations usually depend on the person's age, sex and/or relationship to the head or other reference member of the household. It may be recommended that information on a particular topic should be investigated for less than the total population, and the group of persons for which a given topic should be investigated is indicated below under the definitions and specifications of such topics presented in part two, chapter V, section C. In addition, each tabulation presented in annex I is accompanied by a description of the population to be included in the tabulation.

[25] For a discussion on the definition of "households", see paragraphs 1.324-1.329, 2.60-2.66 and 2.77-2.83; for a discussion on the concept of collective living quarters and institutions, see paragraphs 2.355-2.357 and 2.359-2.360.

[26] For further discussion on the concepts of households and housing units, see paragraphs 1.324 and 1.329; also, for the definition of "housing unit", see paragraph 2.331.

2. Household

1.324. The concept of household is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either (*a*) a one-person household, that is to say, a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household or (*b*) a multi-person household, that is to say, a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and may, to a greater or lesser extent, have a common budget; they may be related or unrelated persons or constitute a combination of persons both related and unrelated.

1.325. The concept of household provided in paragraph 1.324 is known as the "housekeeping" concept. It does not assume that the number of households and housing units is equal. A housing unit, as defined in paragraph 2.331, is a separate and independent place of abode that is intended for habitation by one household, but that may be occupied by more than one household or by a part of a household (for example, two nuclear households that share one housing unit for economic reasons or one household in a polygamous society routinely occupying two or more housing units).

1.326. For a more detailed discussion of the concepts of household, see paragraphs 2.60-2.66 and 2.77-2.83. A more detailed discussion of the concept of households is also presented in paragraphs 2.403-2.406. Some countries use a concept different than the housekeeping concept described in the previous paragraph, namely, the "household-dwelling" concept, which regards all persons living in a housing unit as belonging to the same household. (According to this concept, there is one household per occupied housing unit.) In the household-dwelling concept, then, the number of occupied housing units and the number of households occupying them are equal and the locations of the housing units and households are identical. However, this concept can obscure information on living arrangements, such as doubling up, that is relevant for evaluating housing needs. The definition of household most often used in national censuses conducted during the 1990 round of censuses incorporates both the housekeeping and household-dwelling concepts.[27]

1.327. Households usually occupy the whole or a part of, or more than, one housing unit but they may also be found in camps, boarding houses or hotels or as administrative personnel in institutions, or they may be homeless. Households consisting of extended families that make common provision for food, or of potentially separate households with a common head, resulting from polygamous unions, or households with vacation or other second homes may occupy more than one housing unit.

1.328. Homeless households are those households without a shelter that would fall within the scope of living quarters.[28] They carry their few possessions with them, sleeping in the streets, in doorways or on piers, or in any other space, on a more or less random basis.

1.329. For some topics investigated in housing censuses, the household may serve more efficiently than living quarters as the unit of enumeration. For example, tenure, if investigated in the census, should be collected with reference to households rather than living quarters. Information about household possessions that are normally included as part of the equipment of living quarters (radio and television receivers, for example) should be collected with reference to households. Information on rent, an item of significance in relation to both living quarters and households, would of necessity be collected in relation to the household.

3. Institutional population

1.330. As emphasized in paragraph 1.318, institutions represent the second general framework within which persons, as major units of enumeration, are identified. The institutional population comprises persons who are not members of households. These include persons living in military installations, correctional and penal institutions, dormitories of schools and universities, religious institutions, hospitals and so forth.[29] Similarly, personnel responsible for the running of an institution and not living in dormitories or similar accommodations should be excluded from the institutional population.

1.331. Persons living in hotels or boarding houses are not part of the institutional population and should be distinguished as members of one- or multi-person households, on the basis of the arrangements that they make for providing themselves with the essentials for living.

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[27] *Demographic Yearbook 1987*, 39th ed. United Nations publication, Sales No. E/F.88.XIII.1.

[28] See paragraph 1.333 below.

[29] For more detailed definition and specifications of institutions as a subset of collective living quarters, see paragraphs 2.359-2.360.

4. Living quarters

1.332. The principal units of enumeration in a census of housing are sets of living quarters. Only by recognizing them as such can data be obtained that will provide a meaningful description of the housing situation and a suitable basis for the formulation of housing programmes and policies.

1.333. Living quarters are structurally separate and independent places of abode. They may (*a*) have been constructed, built, converted or arranged for human habitation, provided that they are not at the time of the census used wholly for other purposes and that, in the case of temporary, mobile and marginal housing units and collective living quarters, they are occupied or (*b*) although not intended for habitation, actually be in use for such a purpose at the time of the census.[30]

5. Building

1.334. The building is regarded as an indirect but important unit of enumeration for housing censuses since the information concerning the building (building type, material of construction and certain other characteristics) is required for proper description of the living quarters located within the building and for the formulation of housing programmes. In a housing census, the questions on building characteristics are normally framed in terms of the building in which the living quarters enumerated are located, and the information is recorded for each of the housing units or other living quarters located within it.

1.335. A building is any independent free-standing structure comprising one or more rooms[31] or other spaces, covered by a roof and usually enclosed within external walls or dividing walls[32] that extend from the foundations to the roof. However, in tropical areas, a building may consist of a roof with supports only, that is to say, one without constructed walls; in some cases, a roofless structure consisting of a space enclosed by walls may be considered a building.[33]

1.336. In some countries, it may be appropriate to use the "compound" as a unit of enumeration, either in addition to the building or as a substitute for it. In some areas of the world, living quarters are traditionally located within compounds and the grouping of living quarters in this way may have certain economic and social implications that it would be useful to study. In such cases it may be appropriate, during the census, to identify compounds and to record information suitable for linking them to the living quarters located within them.

B. Place of enumeration

1.337. In a population census, information about each person can be collected and entered in the census questionnaire either where he or she is (or was) present on the day of the census or at his or her usual residence.

1.338. In compiling the census results by geographical areas, however, each person who is part of a household can be included in either (*a*) the household (and hence the geographical area) where the person was present on the day of the census or (*b*) the household (and the geographical area) where he or she usually resides. The same should apply for the institutional population. This allocation is not necessarily dependent upon the place at which information was collected for the individual but it can be simplified by the proper choice of a place of enumeration.

1.339. If a "present-in-area" population distribution is wanted, it is logical to enumerate each person at the place where he or she is (or was) present at the time of the census. If a distribution by usual residence only is required, it is more satisfactory to collect the information about each person at the person's place of usual residence. It should be noted, however, that it is not always possible to collect information about each individual at his or her usual residence, as, for example, when an entire household is away from its usual residence at the time of the census. Some provision must therefore be made for collecting information about such persons at the place where they are found at the time of the census.

1.340. With the growing interest in information on households and families and on internal migration, it is becoming increasingly desirable to prepare tabulations on the basis of usual residence rather than on place where present, since the latter is often temporary and so is not useful for the investigation of the above-mentioned topics. Also, although it is comparatively simpler to enumerate each person where present on the day of the census and thus to use a present-in-area population distribution, a usual-residence distribution is likely to be more accurate than a present-in-area distribution if the time allotted for

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[30] For a more detailed discussion of the definition of "living quarters" and of the concepts of separateness and independence as used in the definition, see paragraphs 2.320-2.322.

[31] For the definition of "rooms", see paragraph 2.375.

[32] The term "dividing walls" refers to the walls of adjoining buildings (for example, of row houses) that have been constructed so as to be contiguous.

[33] For a more detailed discussion of the definition of "building" and related concepts, see paragraphs 2.296-2.298.

enumeration is sufficiently long to permit considerable movement of persons during the interval.

1.341. If it is also desired to obtain information on both the usually resident population and the present-in-area population, then either each person present in each household or institution on the census day or each person present and each usual resident temporarily absent can be enumerated at the appropriate household or institution. A clear distinction must then be made in the questionnaire, as applicable, among (*a*) persons usually resident and present on the day of the census, (*b*) persons usually resident but temporarily absent on the day of the census and (*c*) persons not usually resident but temporarily present on the day of the census.

1.342. Depending on the categories of persons enumerated at any given place, information may then be collected on the usual residence (address) of those only temporarily present and on the place (address) at which each temporarily absent person can be found. This information can be used for the purpose of allocating persons to the household (or institution) and geographical area within which they are to be counted and of checking to be certain that no person is counted twice (namely, at both the usual residence and the place where present). The procedures to be followed at the enumeration and through the subsequent allocation of persons must, however, be very carefully planned and strictly adhered to if the allocation is to be accurate.

1.343. With the exception of mobile housing units, living quarters and buildings have a fixed location and the place where they are to be enumerated does not have, therefore, to be considered in taking a housing census. Information on households, however, and the persons in households can be collected and entered in the housing census questionnaire either where they are (or were) present on the day of the census or at the usual residence. The procedure followed in the housing census should be governed by that adopted in carrying out the population census if the two censuses are carried out simultaneously. If the housing census is an independent operation, however, the procedure to be followed should be carefully considered since it may have a significant effect on the validity of the results of the housing census.

1.344. Where persons and households are allocated to the place of usual residence, they should also be allocated to the living quarters that they usually occupy. The living quarters that they are actually occupying at the time of the census should be counted as vacant if they are conventional or basic dwellings or they should be excluded from the census if they are of a type other than that of conventional or basic dwellings.[34]

1.345. Mobile housing units represent a special case as far as the place of enumeration is concerned. They should be enumerated where they are found on the day of the census; however, in accordance with the procedure adopted for the allocation of the population, mobile housing units may also be allocated to the area where the occupants usually reside provided that they are the usual living quarters of the occupants in the area of usual residence. Where they are not the usual living quarters of the occupants in the area of usual residence, the occupants will be allocated to their usual living quarters and the mobile housing unit will be excluded from the census.

C. Enumeration point of time

1.346. One of the essential features of population and housing censuses is that each person and/or each set of living quarters must be enumerated as nearly as possible in respect of the same well-defined point of time. This is usually accomplished by fixing a census "moment" at midnight at the beginning of the census day if there is only one census day.

1.347. For the population census, each person alive up to the census moment is included in a census schedule and counted in the total population, even though the process of completing the schedule does not take place until after the census moment or even after the census day, and the person may have died in the interim. Infants born after the census moment are not to be entered in a schedule or included in the total population, even though they may be living when the other persons in their household are enumerated.

1.348. For the housing census, each set of living quarters that has reached an established stage of completion and is not scheduled for, or in the process of, demolition should be included in a census schedule and counted as a part of the housing inventory even though the process of completing the schedule does not take place until after the census moment or even after the census day, and the living quarters may have been scheduled for demolition in the interim. Living quarters that have attained the prescribed state of completion after the census moment are not to be entered in a schedule (unless special instructions are issued for recording living quarters under construction) nor should they be included in the total number of sets of living quarters.

[34] By definition, all sets of living quarters except conventional and basic dwellings are required to be occupied in order to be included in the census.

1.349. Where the amount of time allotted for enumeration in the census is considered to be so long that the population is not likely to be able to supply information as of a single moment in the past, it may be necessary to employ different points of time in the enumeration, even to the extent of using the night before the visit by the enumerator. If such a procedure is followed, it should be clearly explained in the census report and the total duration of the enumeration should be stated. For ease of reference and for the computation of intercensal indices, it is useful to designate a single date in the enumeration period as the official "census date". This date could be, for example, the day by which half of the population was enumerated.

D. Time reference period for data on the characteristics of the population and of living quarters

1.350. The data collected about the characteristics of the population and of living quarters should be pertinent to a well-defined reference period. The time-reference period need not, however, be the same for all of the data collected. For most of the data, it will be the census moment or the census day; in some instances (as is the case for economic characteristics and rental arrangements), however, it may be a brief period just prior to the census or (as is the case for fertility questions and information on the period of construction of the building in which living quarters are located) a longer period of time.

Part Two

Topics for population and housing censuses

V. Topics to be investigated in population censuses

A. Factors determining the selection of topics

2.1. The topics to be covered in the census (that is, the subjects regarding which information is to be sought for each individual) should be determined upon balanced consideration of (*a*) the needs of the broad range of data users in the country; (*b*) achievement of the maximum degree of international comparability, both within regions and on a worldwide basis; (*c*) the probable willingness and ability of the public to give adequate information on the topics; and (*d*) the total national resources available for conducting the census. Such a balanced consideration will need to take into account the advantages and limitations of alternative methods of obtaining data on a given topic within the context of an integrated national programme for gathering demographic and related socio-economic statistics (see paras. 1.17 - 1.49 in part one above).

2.2. In making the selection of topics, due regard should be paid to the usefulness of historical continuity in providing the opportunity for comparison of changes over a period of time. Census takers should avoid, however, collecting information that is no longer required simply because it was traditionally collected in the past, bearing in mind changes in the socio-economic circumstances of the country. It becomes necessary, therefore, in consultation with a broad range of users of census data, to review periodically the topics traditionally investigated and to re-evaluate the need for the series to which they contribute, particularly in light of new data needs and alternative data sources that may have become available for investigating topics hitherto covered in the population census. Each of the four factors that need to be taken into account in reaching a final decision on census content are briefly reviewed in the following paragraphs.

1. Priority of national needs

2.3. Prime importance should be given to the fact that population censuses should be designed to meet national needs. In defining national data needs for population census data, the full range of national uses (for example, policy, administration and research) and national users (for example, national and local government agencies, those in the private sector, and academic and other researchers) should be considered. Each country's decision with regard to the topics to be covered should depend upon a balanced appraisal of how urgently the data are needed and whether the information could be equally well or better obtained from other sources. Global and regional census recommendations can help in this appraisal by providing information about standard census topics and related definitions and concepts based on a wide range of national census experience.

2. Importance of international comparability

2.4. The desirability of achieving regional and worldwide comparability should be another major consideration in the selection and formulation of topics for the census schedule. National and international objectives are usually compatible, however, since international recommendations, based on a broad study of country experience and practice, are recommendations for definitions and methods that have successfully met general national needs in a wide range of circumstances. Furthermore, the analysis of census data for national purposes will often be facilitated if, by the use of international recommendations, it is possible to compare the data with those of other countries on the basis of consistent concepts, definitions and classifications.

2.5. If the particular circumstances within a country require departures from international standards, every effort should be made to explain these departures in the census publications and to indicate how the national presentation can be adapted to the international standards.

3. Suitability of topics

2.6. The topics investigated should be such that the respondents will be willing and able to provide adequate information on them. Thus, it may be necessary to avoid topics likely to arouse fear, local prejudice or superstition, and questions too complicated and difficult for the average respondent to answer easily in the context of a population census. The exact phrasing of each question that is needed in order to obtain the most reliable response will of necessity depend on national circumstances and, as described in paragraphs 1.119-1.121 above, should be well tested prior to the census.

4. Resources available

2.7. The selection of topics should be carefully considered in relation to the total resources available for the census. An accurate and efficient collection of data for a limited number of topics, followed by prompt tabulation and publication, is more useful than the collection of data for an overambitious list of topics, which cannot be investigated, processed and disseminated in a timely, reliable and cost-effective manner. In balancing the need for data against resources available, several

additional factors will enter into the decision, including the extent to which questions can be precoded.

B. List of topics

2.8. The list of topics included in these global recommendations for population censuses are based on the global and regional census experience of the last several decades. The topics included here are, with minor revisions, the same as those included in the previous United Nations population census recommendations,[35] with the addition of a topic on disability.

2.9. It should be stressed that no country should attempt to cover all the topics included in the list of population topics (para. 2.16). Rather, countries will need to make their selection of topics in light of the considerations discussed in paragraphs 2.1-2.7 above, bearing in mind current regional recommendations pertaining to census topics.

2.10. Evolving census experience over the past several decades globally and in the regions has demonstrated that a set of topics exist on which there is considerable agreement in regard both to their importance and to the feasibility of collecting the data for them in a census. Data on those within this set likely to present difficulties in terms of data collection or processing are probably best collected for only a sample of the population. The exceptions to this consensus occur, at one extreme, among the countries with the most developed statistical systems, where adequate data on a number of the topics listed, including some of the basic ones, are available from non-census sources; and, at the other, among the countries in which data-collection opportunities are limited and it is felt that advantage must be taken of the possibilities offered by the census to investigate topics that, under better circumstances, might be investigated more suitably by other means.

2.11. Although the set of topics covered in these recommendations is quite comprehensive in terms of topics generally considered suitable for inclusion in a population census, it is also recognized that a few countries may find it necessary to include one or more additional topics of particular national or local interest. However, before the final decision is made to include any such additional topics, their suitability should be carefully tested.

2.12. To assist countries in using the present publication and in determining their own priorities, lists of recommended population topics are summarized in paragraph 2.16, with the basic topics shown in boldface. These basic topics correspond to those that were included as “priority topics” in the majority of the regional recommendations in previous census decades.[36]

2.13. The topics listed in paragraph 2.16 are grouped under eight headings, as required: "Geographical and internal migration characteristics", "Household and family characteristics", “Demographic and social characteristics", Fertility and mortality", “Educational characteristics","Economic characteristics", “International migration characteristics” and “Disability characteristics”. The headings are not entirely mutually exclusive; some of the topics, such as "Citizenship”, are relevant both to demographic and social characteristics and to international migration. Topics of relevance to measuring both internal and international migration are listed under both headings in paragraph 2.16. In all other cases, the topic appears under the first heading to which it is relevant.

2.14. Within each heading, a distinction is made between topics collected directly (those that appear in the census schedule or questionnaire), and derived topics. The former are those for which data are collected by a specific item on the census. Although data for the derived topics also come from information in the questionnaire, they do not necessarily come from replies to a specific question. "Total population", for example, is derived from a count of the persons entered in the questionnaires as persons present or resident in each geographical unit. Such derived topics may perhaps be more correctly considered as tabulation components, but they are listed as topics in order to emphasize the fact that the questionnaire must in some way yield this information.

2.15. The paragraph numbers in parentheses after each entry in paragraph 2.16 refer either to the paragraphs in which the group of topics as a whole is discussed in section C below or to the paragraphs in which the definition and specifications of individual topics are discussed.

2.16. In the following list of population census topics, basic topics are shown in bold.

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[35] *Principles and Recommendations for Population and Housing Censuses*, Statistical Papers No. 67 (United Nations publication, Sales No. E.80.XVII.8); and *Supplementary Principles and Recommendations for Population and Housing Censuses*, Statistical Papers No. 67/Add.1 (United Nations publication, Sales No. E.90.XVII.9).

[36] This group of topics was referred to simply as List A in the previous global recommendations, while the priority topics were variously designated in the regional recommendations as "recommended topics", "recommended topics of first priority" and "basic topics". The balance of the topics were referred to as List B topics in the global recommendations and consisted of all other topics included as “priority” or “other useful” in the majority of regions.

List of population census topics

Topics collected directly	Derived topics
1. Geographical and internal migration characteristics (paras. 2.18-2.59)	
(a) **Place of usual residence** (paras. 2.20-2.24)	(g) **Total population** (paras. 2.42-2.48)
(b) **Place where present at time of census** (paras. 2.25-2.28)	(h) **Locality** (paras. 2.49-2.51)
(c) **Place of birth** (paras. 2.29-2.34)	(i) **Urban and rural** (paras. 2.52-2.59)
(d) **Duration of residence** (paras. 2.35-2.37)	
(e) **Place of previous residence** (paras. 2.38-2.39)	
(f) **Place of residence at a specified date in the past** (paras. 2.40-2.41)	
2. Household and family characteristics (paras. 2.60-2.84)	
(a) **Relationship to head or other reference member of household** (paras. 2.67-2.76)	(b) **Household and family composition** (paras. 2.77-2.83)
	(c) Household and family status (para.2.84)
3. Demographic and social characteristics (paras. 2.85-2.117)	
(a) **Sex** (para. 2.86)	
(b) **Age** (paras. 2.87-2.95)	
(c) **Marital status** (paras. 2.96-2.103)	
(d) **Citizenship** (paras. 2.104-2.108)	
(e) Religion (paras. 2.109-2.111)	
(f) Language (paras. 2.112-2.115)	
(g) National and/or ethnic group (paras. 2.116-2.117)	
4. Fertility and mortality (paras. 2.118-2.143)	
(a) **Children ever born** (paras. 2.126-2.131)	
(b) **Children living** (paras. 2.132-2.133)	
(c) Date of birth of last child born alive (paras. 2.134-2.136)	
(d) Deaths in the past 12 months (paras. 2.137-2.138)	
(e) Maternal or paternal orphanhood (paras. 2.139-2.141)	

Topics collected directly		Derived topics
(f)	Age, date or duration of first marriage (para. 2.142)	
(g)	Age of mother at birth of first child born alive (para. 2.143)	
	5. Educational characteristics (paras. 2.144-2.164)	
(a)	**Literacy** (paras. 2.145-2.149)	
(b)	**School attendance** (paras. 2.150-2.152)	
(c)	**Educational attainment** (paras. 2.153-2.157)	
(d)	Field of education and educational qualifications (paras. 2.158-2.163)	
	6. Economic characteristics (paras. 2.165-2.247)	
(a)	**Activity status** (paras. 2.168-2.208)	
(b)	**Time worked** (paras. 2.209-2.211)	
(c)	**Occupation** (paras. 2.212-2.220)	
(d)	**Industry** (paras. 2.221-2.225)	
(e)	**Status in employment** (paras. 2.226-2.235)	
(f)	Income (paras. 2.236-2.238)	
(g)	Institutional sector of employment (paras. 2.239-2.244)	
(h)	Place of work (paras. 2.245-2.247)	
	7. International migration characteristics (paras. 2.248-2.257)	
(a)	Country of birth (paras. 2.252-2.253)	
(b)	Citizenship (para. 2.254)	
(c)	Year or period of arrival (paras. 2.255-2.257)	
	8. Disability characteristics (paras. 2.266-2.277)	
(a)	Disability (paras. 2.262-2.272)	
(b)	Impairment and handicap (paras. 2.273-2.276)	
(c)	Causes of disability (para. 2.277)	

C. Definitions and specifications of topics

2.17. The present section contains the recommended definitions and specifications of all topics presented in the order in which they appear in paragraph 2.16 above. It is important that census data be accompanied by the definitions used in carrying out the census. It is also important that any changes in definitions that have been made since the previous census be indicated and, if possible, accompanied by estimates of the effect of such changes on the relevant data, in order to ensure that users will not confuse valid changes over a period of time with increases or decreases resulting from changed definitions.

1. Geographical and internal migration characteristics

2.18. It should be noted that "place of usual residence" and "place where present at time of census" may be considered alternative topics when countries do not have the resources to investigate both topics for general census purposes. Some countries, however, will want to investigate both topics for general purposes. The relationship between the two topics and their further relationship to the topic of “place of enumeration” are set forth in chapter IV (see paras. 1.337-1.345).

2.19. It is recommended that countries investigating only "place where present at time of census" for general purposes should also obtain information on "place of usual residence" for all persons who do not usually reside in the household where they were enumerated, to be used in connection with the information on "place of birth", "duration of residence", "place of previous residence" and/or "place of residence at a specified date in the past" in determining internal migration status. If, in the compilation of the population of geographical units, persons are allocated to the place where they were present at the time of the census, information on the four above-mentioned migration characteristics will be irrelevant for persons who were only visiting, or transient in, the place at which they were present. Since such persons must, in any case, be identified in the questionnaire as non-residents so that they will not be erroneously classified as recent in-migrants, a question on their place of usual residence can be easily put and will make it possible to include the entire population in the tabulation of internal migration characteristics.

(a) Place of usual residence

2.20. The place of usual residence is the geographical place where the enumerated person usually resides. This may be the same as, or different from, the place where he or she was present at the time of the census or his or her legal residence.

2.21. Although most persons will have no difficulty in stating their place of usual residence, some confusion is bound to arise in a number of special cases, where persons may appear to have more than one usual residence. These cases might include persons who maintain two or more residences, students living at school, members of the armed forces living at a military installation but still maintaining private living quarters away from the installation, and persons who sleep away from their homes during the working week but return home for several days at the end of each week. The treatment of all such cases should be clearly set forth in the census instructions.

2.22. Problems may also arise with persons who have been residing at the place where they are enumerated for some time but do not consider themselves to be residents of that place because they intend to return to their previous residence at some future time, and also with persons who have left the country temporarily but are expected to return after some time. In such instances, clearly stated time limits of presence in, or absence from, a particular place must be set, in accordance with the prevailing circumstances in the country, to determine whether or not the person is usually resident there.

2.23. If each person is to be entered in the questionnaire only at his or her place of usual residence, the topic need not be investigated separately for each person, because the information will be available from the location information entered for the questionnaire as a whole.

2.24. Information on the place of usual residence should be collected in enough detail to enable tabulations to be made for the smallest geographical subdivisions required by the tabulation plan and to meet the requirements of the database.

(b) Place where present at time of census

2.25. The place where present at the time of the census is, in theory, the geographical place at which each person was present on the day of the census, whether or not this was his or her place of usual residence. In practice, the concept is generally applied to the place where the person slept on the night preceding the census day, because many persons appearing in the questionnaire were not physically present at the place of enumeration during most of the day.

2.26. As mentioned in chapter IV (see paras. 1.346-1.349), the concept is sometimes further extended to apply to the night preceding the day of actual enumeration in cases where the enumeration extends over a long period of time and persons are not likely to be able to supply information as of a single moment in the past. Other departures from the definition may be necessary to deal with individual cases, such as persons travelling during the entire night or day of the census and persons who spent the night at work.

2.27. If each person is to be entered in the questionnaire only at the place where he or she was present at the time of the census, the topic need not be investigated separately for each

person, because the information will be available from the location information entered for the questionnaire as a whole.

2.28. Information on the place where each person was present should be collected in enough detail to enable tabulation to be made for the smallest geographical subdivisions required by the tabulation plan and to meet the requirement of the database.

(c) Place of birth

2.29. The place of birth is, in the first instance, the country in which the person was born. It should be noted that the country of birth is not necessarily related to citizenship (see para. 2.104), which is a separate topic. For persons born in the country where the census is taken (natives), the concept of place of birth also includes the specified type of geographical unit of the country in which the mother of the individual resided at the time of the person's birth. In some countries, however, the place of birth of natives is defined as the geographical unit in which the birth actually took place. Each country should explain which definition it has used in the census.

2.30. The collection of information distinguishing between persons born in the country where the census is taken (natives) and those born elsewhere (foreign-born) is necessary where any inquiry on place of birth is made. Even countries where the proportion of foreign-born population is insignificant, which therefore desire to compile information only on the place of birth of the native population, must first separate the native from the foreign-born population. It is therefore recommended that place of birth be asked of all persons. For further information on country of birth for the foreign-born population, see paragraphs 2.252-2.253.

2.31. Information on the place of birth of the native population is usually used primarily for the investigation of internal migration. For countries that have been recently formed from parts of previously separate entities, however, such information may be of use in assessing the relative size of the population segments from each of those entities, and their distribution throughout the country.

2.32. For the latter purpose, it is usually sufficient to collect information only on the major civil division (State, province or department, for example) in which the place of birth is located. If desired, more detailed information on the subdivision of a specific locality can be collected and used for accurate coding of the major division or for presenting data for smaller areas.

2.33. For studies of internal migration, data on the place of birth of the native population, particularly in terms of major civil divisions, are not adequate in themselves. In order to achieve at least some measure of net internal migration into large cities by the use of data on place of birth within the country, it would be necessary to collect information for persons resident in each city, distinguishing those who were born in that city, those born elsewhere in the same major civil division and those born in some other major civil division. Similar information for persons in each intermediate or minor civil division might be obtained by extending the question on place of birth within the country so that data could be collected on intermediate or minor, as well as major, civil divisions. It should be borne in mind, however, that the people of many developing countries, where internal migration poses several serious problems, may not be able to provide such details as would warrant any attempt to collect this type of information. Even in the statistically advanced countries, confusion is bound to arise from changes in the boundaries of minor civil divisions and from the possible tendency of persons born near a large city to name that city as their birthplace.

2.34. It is therefore recommended that, for the study of internal migration, the data on place of birth be supplemented by information collected on duration of residence and place of previous residence or on residence at a specified date in the past.

(d) Duration of residence

2.35. The duration of residence is the interval of time up to the date of the census, expressed in complete years, during which each person has lived in (*a*) the locality that is his or her usual residence at the time of the census and (*b*) the major or smaller civil division in which that locality is situated.

2.36. Data on the duration of residence have only limited value in themselves because they do not provide information on the place of origin of in-migrants. Therefore, when the topic is investigated, the place of previous residence should also be investigated, if at all possible, so that the data can be cross-classified.

2.37. In collecting information on duration of residence, it should be made clear that the concern is with length of residence in the major or smaller civil division and the locality but not in the particular housing unit.

(e) Place of previous residence

2.38. The place of previous residence is the major or smaller civil division, or the foreign country, in which the individual resided immediately prior to migrating into his or her present civil division of usual residence.

2.39. Data on the place of previous residence have only limited value in themselves because they do not provide information on the time of in-migration. Therefore, when the topic is investigated, the duration of residence should also be

investigated, if at all possible, so that the data can be cross-classified.

(f) Place of residence at a specified date in the past

2.40. The place of residence at a specified date in the past is the major or smaller division, or the foreign country, in which the individual resided at a specified date preceding the census. The reference date chosen should be the one most useful for national purposes. In most cases, this has been deemed to be one year or five years preceding the census. The former reference date provides current statistics of migration during a single year; the latter may be more appropriate for collecting data for the analysis of international migration although perhaps less suitable for the analysis of current internal migration. Also to be taken into account in selecting the reference date should be the probable ability of individuals to recall with accuracy their usual residence one year or five years earlier than the census date. For countries conducting quinquennial censuses, the date of five years earlier can be readily tied in, for most persons, with the time of the previous census. In other cases, one-year recall may be more likely than five-year recall. Some countries, however, may have to use a different time reference than either one year or five years preceding the census because both of these intervals may present recall difficulties. National circumstances may make it necessary for the time reference to be one that can be associated with the occurrence of an important event that most people will remember. In addition, information on year of arrival in the country may be useful for international migrants, as described in paragraphs 2.255-2.257.

2.41. No matter what previous date is used, provision must be made for the treatment of infants and young children not yet born at that date. Tabulations of the data should indicate the nature of the treatment of this group.

(g) Total population

2.42. For census purposes, the total population of the country consists of all the persons falling within the scope of the census. In the broadest sense, the total may comprise either all usual residents of the country or all persons present in the country at the time of the census. The total of all usual residents is generally referred to as the *de jure* population and the total of all persons present as the de facto population.

2.43. In practice, however, countries do not usually achieve either type of count, because one or another group of the population is included or excluded, depending on national circumstances, despite the fact that the general term used to describe the total might imply a treatment opposite to the one given any of these groups. It is recommended, therefore, that each country describe in detail the figure accepted officially as the total, rather than simply label it as *de jure* or de facto.

2.44. The description should show clearly whether each group listed below was or was not counted in the total. If the group was enumerated, its magnitude should be given; if it was not enumerated, an estimate of its size should be given, if possible. If any group is not represented at all in the population, this fact should be stated and the magnitude of the group should be shown as "zero". This may occur particularly with groups (*a*), (*b* , (*d*) and (*n*) described below.

2.45. The groups to be considered are:

(*a*) Nomads;
(*b*) Persons living in areas to which access is difficult;
(*c*) Military, naval and diplomatic personnel and their families located outside the country;
(*d*) Merchant seamen and fishermen resident in the country but at sea at the time of the census (including those who have no place of residence other than their quarters aboard ship);
(*e*) Civilian residents temporarily in another country as seasonal workers;
(*f*) Civilian residents who cross a frontier daily to work in another country;
(*g*) Civilian residents other than those in groups (*c*), (*e*) or (*f*) who are working in another country;
(*h*) Civilian residents other than those in groups (*c*), (*d*), (*e*) (*f*) or (*g*) who are temporarily absent from the country;
(*i*) Foreign military, naval and diplomatic personnel and their families located in the country;
(*j*) Civilian foreigners temporarily in the country as seasonal workers;
(*k*) Civilian foreigners who cross a frontier daily to work in the country;
(*l*) Civilian foreigners other than those in groups (*i*), (*j*) or (*k*) who are working in the country;
(*m*) Civilian foreigners other than those in groups (*i*), (*j*), (*k*) or (*l*) who are in the country temporarily, including refugees;
(*n*) Transients on ships in harbour at the time of the census.

2.46. In the case of groups (*h*) and (*m*), it is recommended that an indication be given of the criteria used in determining that presence in, or absence from, the country is temporary.

2.47. In those countries where the total population figure has been corrected for underenumeration or overenumeration, both the enumerated figure and the estimated corrected population

figure should be shown and described. The detailed tabulations will of necessity be based only on the actual enumerated population.

2.48. The population of each geographical unit of the country, like the total population of the country (see para. 2.42), may comprise either all usual residents of the unit (see para. 2.20) or all persons present in the unit at the time of the census (see paras. 2.25 and 2.26).

(h) Locality

2.49. For census purposes, a locality should be defined as a distinct population cluster (also designated as inhabited place, populated centre, settlement and so forth) in which the inhabitants live in neighbouring sets of living quarters and that has a name or a locally recognized status. It thus includes fishing hamlets, mining camps, ranches, farms, market towns, villages, towns, cities and many other population clusters that meet the criteria specified above. Any departure from this definition should be explained in the census report as an aid to the interpretation of the data.

2.50. Localities as defined above should not be confused with the smallest civil divisions of a country. In some cases, the two may coincide. In others, however, even the smallest civil division may contain two or more localities. On the other hand, some large cities or towns may contain two or more civil divisions, which should be considered as segments of a single locality rather than separate localities.

2.51. A large locality of a country (that is to say, a city or a town) is often part of an urban agglomeration, which comprises the city or town proper and also the suburban fringe or thickly settled territory lying outside, but adjacent to, its boundaries. The urban agglomeration is therefore not identical with the locality but is an additional geographical unit, which may include more than one locality. In some cases, a single large urban agglomeration may comprise several cities or towns and their suburban fringes. The components of such large agglomerations should be specified in the census results.

(i) Urban and rural

2.52. Because of national differences in the characteristics that distinguish urban from rural areas, the distinction between the urban and the rural population is not yet amenable to a single definition that would be applicable to all countries or, for the most part, even to the countries within a region. Where there are no regional recommendations on the matter, countries must establish their own definitions in accordance with their own needs.

2.53. The traditional distinction between urban and rural areas within a country has been based on the assumption that urban areas, no matter how they are defined, provide a different way of life and usually a higher level of living than are found in rural areas. In many industrialized countries, this distinction has become blurred and the principal difference between urban and rural areas in terms of the circumstances of living tends to be a matter of the degree of concentration of population. Although the differences between urban and rural ways of life and levels of living remain significant in developing countries, rapid urbanization in these countries has created a great need for information related to different sizes of urban areas.

2.54. Hence, although the traditional urban rural dichotomy is still needed, a classification by size of locality can usefully supplement the dichotomy or even replace it where the major concern is with characteristics related only to density along the continuum from the most sparsely settled areas to the most densely built-up localities. A basic classification by five size-categories has been recommended for the Economic Commission for Europe (ECE) countries.[37]

2.55. Density of settlement may not, however, be a sufficient criterion in many countries, particularly where there are large localities that are still characterized by a truly rural way of life. Such countries will find it necessary to use additional criteria in developing classifications that are more distinctive than a simple urban rural differentiation. Some of the additional criteria that may be useful are the percentage of the economically active population employed in agriculture, the general availability of electricity and/or piped water in living quarters and the ease of access to medical care, schools and recreation facilities. For certain countries where the facilities noted above are available in some areas that are still rural since agriculture is the predominant source of employment, it might be advisable to adopt different criteria in different parts of the country. Care must be taken, however, to ensure that the definition used does not become too complicated for application to the census and for comprehension by the users of the census results.

2.56. Even in the industrialized countries, it may be considered appropriate to distinguish between agricultural localities, market towns, industrial centres, service centres and so forth, within size-categories of localities.

2.57. Even where size is not used as a criterion, the locality is the most appropriate unit or classification for national purposes as well as for international comparability. If it is not possible to use the locality, the smallest administrative unit of the country should be used.

2.58. Some of the information required for classification may be provided by the census results themselves, while other

[37] Economic Commission for Europe, "Draft recommendations for the 2000 censuses of population and housing in the ECE region" (CES/AC.6/158; HBP/AC.13/R.2), 8 January 1997.

information may be obtained from external sources. The use of information provided by the census (as, for example, the size-class of the locality or the percentage of the population employed in agriculture), whether alone or in conjunction with information from other sources, means that the classification will not be available until the relevant census results have been tabulated. If, however, the census plans call for the investigation of a smaller number of topics in rural areas than in urban areas or for a greater use of sampling in rural areas, the classification must be available before the enumeration takes place. In these cases, reliance must be placed on external sources of information, even if only to bring up to date any urban rural classification that was prepared at an earlier date.

2.59. The usefulness of housing census data (for example, the availability of electricity and/or piped water) collected simultaneously with, or not too long before, the population census should be kept in mind. Images obtained by remote sensing may be of use in the demarcation or boundaries of urban areas when density of habitation is a criterion. For assembling information from more than one source, the importance of a well-developed system of geocoding should not be overlooked.

2. Household and family characteristics

2.60. In considering the topics related to household characteristics, it is important to be aware of the differences between the concepts of household and family as used herein.

2.61. A household is classified as either (*a*) a one-person household, defined as an arrangement in which one person makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household or (*b*) a multi-person household, defined as a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons or a combination of persons both related and unrelated. This arrangement exemplifies the housekeeping concept. In an alternative definition used in many countries exemplifying the so-called household-dwelling concept, a household consists of all persons living together in a housing unit.

2.62. A household may be located in a housing unit (see para. 2.331) or in a set of collective living quarters such as a boarding house, a hotel or a camp, or may comprise the administrative personnel in an institution. The household may also be homeless.

2.63. The family within the household, a concept of particular interest, is defined as those members of the household who are related, to a specified degree, through blood, adoption or marriage. The degree of relationship used in determining the limits of the family in this sense is dependent upon the uses to which the data are to be put and so cannot be established for worldwide use.

2.64. Although in practice, most households are composed of a single family consisting of a married couple without children or of one or both parents and their children, it should not be assumed that this identity exists; census tabulations should therefore clearly indicate whether they relate to households or to families within households.

2.65. From the definitions of "household" and "family", it is clear that household and family are different concepts that cannot be used interchangeably in the same census. The difference between the household and the family is (*a*) that a household may consist of only one person but a family must contain at least two members and (*b*) that the members of a multi-person household need not be related to each other, while the members of a family must be related. Moreover, a family cannot comprise more than one household; a household, however, can contain more than one family, or one or more families together with one or more non-related persons, or it can consist entirely of non-related persons.

2.66. It is recommended that the household be used as the unit of enumeration (as defined in paras. 1.324 - 1.329) and that the family be a derived topic only. The place of usual residence is recommended as the basis for assigning persons to households where they normally reside. Where the de facto approach is used as the method of enumeration (see paras. 1.337-1.345), household lists should, where feasible, also include usual residents temporarily absent. The place of usual residence is where a person usually resides and it may or may not be the person's current residence or legal residence. The latter terms are usually defined in the laws of most countries and need not correspond to the concept of place of usual residence which, as employed in the census, is based on conventional usage. In published reports, countries should indicate whether or not household information refers to usual residents and also what the time limits are in respect of being included or excluded as a usual resident. For a more detailed discussion and the difficulty of collecting information on place of usual residence, see paragraphs 2.20-2.24.

(a) Relationship to head or other reference member of household

2.67. In identifying the members of a household (as defined in paras. 2.61 and 2.62), it is traditional to identify first the household head or reference person and then the remaining members of the household according to their relationship to the head or reference person. The head of the household is defined as that person in the household who is acknowledged as such by the other members. Countries may use the term they deem most

appropriate to identify this person (head of household, householder, household reference person, among others) as long as solely the person so identified is used to determine relationships between household members. It is recommended that each country present, in published reports, the concepts and definitions that are used.

2.68. With respect to selecting the household head or reference person, it is important to specify criteria for choosing that person in relation to whom household members would be best distinguished, especially in polygamous, multi-family and other households, such as those composed only of siblings without a parent and those composed entirely of unrelated persons. This information should be included in training materials and instructions to enumerators.

2.69. The notion of head of household assumes that most households are family households (in other words, that they consist entirely, except possibly for domestic servants, of persons related by blood, marriage or adoption) and that one person in such family households has primary authority and responsibility for household affairs and is, in the majority of cases, its chief economic support. This person is then designated as the head of household.

2.70. Where spouses are considered equal in household authority and responsibility and may share economic support of the household, the concept of head of household is no longer considered valid even for family households. In order for the relationship among members of the household to be determined under these circumstances, it is essential that either (*a*) the members of the household designate one among them as a reference member with no implication of headship or (*b*) provision be made for designation of joint headship where desired. In any case, it is important that clear instructions be provided in the census as to how this situation is to be handled.

2.71. Even in the many countries where the traditional concept of head of household is still relevant, it is important to recognize that the procedures followed in applying the concept may have distorted the true picture, particularly in regard to female heads of households. The most common assumption that can distort the facts is that no woman may in fact be the head of any household that also contains an adult male. Enumerators and even respondents may simply take such an assumption for granted.

2.72. This common sex-based stereotype often reflects circumstances that may have been true in the past but are true no longer, insofar as the household and economic roles of women are changing. It is therefore important that clear instructions be provided as to who is to be treated as the head of the household so as to avoid the complications of enumerator or respondent preconceptions on the subject. The procedure to follow in identifying a head when the members of the household are unable to do so should be clear and unambiguous and should avoid sex-based bias.

2.73. After identification of the head or other reference member of the household, each of the remaining members of the household should be distinguished in relation to that person, as appropriate, as one of the following: (*a*) spouse, (*b*) child, (*c*) spouse of child, (*d*) grandchild or great-grandchild, (*e*) parent (or parent of spouse), (*f*) other relative, (*g*) domestic employee or (*h*) other person not related to the head or other reference member. Where this classification is considered too detailed for successful collection of the information, categories (*e*) and (*f*) may be consolidated as Other relative and (*g*) and (*h*) can be consolidated as Other unrelated person.

2.74. As an aid to the identification of conjugal family nuclei (as defined in para. 2.79) within the household, it might be helpful if persons were recorded in the census form to the extent possible in the order of nuclear relationship. Thus, the first person entered after the head or other reference person would be the spouse of that person, followed by unmarried children and then by married children, their spouses and children. For polygamous households, the order of entry could be such that each wife and her unmarried children appeared in succession.

2.75. For estimating fertility by the *own children* method (see para. 2.122), the natural mother of each child under 15 years of age should be identified if she appears in the same questionnaire as her child. One way of doing this is to provide the line number of the mother alongside that of the child, if both are living in the same household. The information is not relevant for stepchildren, adopted children or foster children under permanent or temporary care.

2.76. In order to meet increased data needs on households and families, countries may wish, while conducting their population censuses, to collect more detailed information on relationships. In households where the relationship structure is complex, including those with foster children, obtaining accurate information on the relationships between household members may be difficult. Some countries may supplement information on relationship to the head of household with information on direct relationships between household members by, for instance, relating a child to its parents even when neither parent is the head of household. Enumerators should be encouraged to probe for a clear relationship (such as child, niece, aunt and so forth). The recording of non-specific responses such as “relative” should be avoided. It is recommended that specific guidance be provided on allowable answers, that relationships be specified completely in the census questionnaire, and that any precoded categories used should be sufficiently detailed to produce desired outputs.

(b) Household and family composition

2.77. Household and family composition can be examined from different points of view, but for census purposes it is recommended that the primary aspect considered should be that of the family nucleus.

2.78. A family nucleus is of one of the following types (each of which must consist of persons living in the same household): (*a*) a married couple without children, (*b*) a married couple with one or more unmarried children, (*c*) a father with one or more unmarried children or (*d*) a mother with one or more unmarried children. Couples living in consensual unions should be regarded as married couples.

2.79. The family nucleus is identified from the answers to the question on relationship to the head or other reference member of the household, supplemented where necessary by information on name and marital status. The identification of offspring and their mother and the order in which persons are entered in the questionnaire may be of additional assistance in this respect. The identification of family nuclei is likely to be more complete in *de jure* than in de facto enumerations, because the latter do not take account of temporarily absent household members who may constitute part of a nucleus.

2.80. For census purposes, a child is any unmarried individual, regardless of age, who lives with his or her parent(s) and has no children in the same household. Consequently, the definition of a child is primarily a function of an individual's relationship to other household members, regardless of age. In accordance with the above definition, a household consisting of a married couple, their two never-married children, one of their children who is divorced, and a married daughter and her husband would be considered to be composed of two family nuclei, with the divorced child being regarded as a member of the parents' family. As used here, the term "child" does not imply dependency, but rather is used to capture household living arrangements involving terms of persons who are in a parent-child relationship.

2.81. The family nucleus does not include all family types, such as brothers or sisters living together without their offspring or parents, or an aunt living with a niece who has no child. It also excludes the case of a related person living with a family nucleus as defined above, for example, a widowed parent living with her married son and his family. The family nucleus approach does not, therefore, provide information on all types of families. Countries may extend the investigation of families beyond that of the family nucleus, in accordance with their own interests.

2.82. Households should be classified by type according to the number of family nuclei they contain and the relationship, if any, between the family nuclei and the other members of the household. The relationship should be through blood, adoption or marriage, to whatever degree is considered pertinent by the country (see para. 2.63). Given the complexity of this item, it is important that information on relationship to the household head or reference person be properly processed. The types of household to be distinguished could be:

(*a*) *One-person household*;

(*b*) *Nuclear household*, defined as a household consisting entirely of a single family nucleus. It may be classified into:

(i) Married-couple family:
- *a*. With child(ren);
- *b*. Without child(ren);

(*ii*) Father with child(ren);

(*iii*) Mother with child(ren);

(*c*) *Extended household*, defined as a household consisting of any one of the following:[38]

(i) A single family nucleus and other persons related to the nucleus, for example, a father with child(ren) and other relative(s) or a married couple with other relative(s) only;

(*ii*) Two or more family nuclei related to each other without any other persons, for example, two or more married couples with child(ren) only;

(*iii*) Two or more family nuclei related to each other plus other persons related to at least one of the nuclei, for example, two or more married couples with other relative(s) only;

(iv) Two or more persons related to each other, none of whom constitute a family nucleus;

(d) Composite household, defined as a household consisting of any of the following:[39]

(i) A single family nucleus plus other persons, some of whom are related to the nucleus and some of whom are not, for example, mother with child(ren) and other relatives and non-relatives;

(*ii*) A single family nucleus plus other persons, none of whom is related to the nucleus, for example, father with child(ren) and non-relatives);

[38] The subdivisions in this category should be modified to suit national circumstances.

[39] The subdivisions in this category should be modified to suit national circumstances.

(*iii*) Two or more family nuclei related to each other plus other persons, some of whom are related to at least one of the nuclei and some of whom are not related to any of the nuclei, for example, two or more couples with other relatives and non-relatives only;

(iv) Two or more family nuclei related to each other plus other persons, none of whom is related to any of the nuclei, for example, two or more married couples one or more of which with child(ren) and non-relatives;

(v) Two or more family nuclei not related to each other, with or without any other persons;

(*vi*) Two or more persons related to each other but none of whom constitute a family nucleus, plus other unrelated persons;

(*vii*) Non-related persons only;

(e) Other/Unknown.

2.83. In the census tabulations, all countries should at least distinguish between one-person, nuclear, extended and composite households. Where feasible, some or all of the subcategories shown above should also be distinguished, although countries may find it appropriate to modify the classification according to national circumstances. For example, in countries where almost all households contain only one family nucleus at most, the distinction between nuclear, extended and composite households may be applied only to households containing one nucleus or no nucleus; multinuclear households may then be shown as an additional category without any further classification by type. In countries where multinuclear households are comparatively common, further breakdowns of extended and composite households, distinguishing between those with three, four or more family nuclei, may be helpful.

(c) Household and family status

2.84. For purposes of determining household and family status and identifying how a person relates to other household or family members, persons may be classified according to their position in the household or family nucleus. Classifying persons according to household and family status has uses in social and demographic research and policy formulation. Census data could be presented according to both household and family status for a variety of purposes. Although status itself is based on information derived from responses to the item on relationship to the head or other reference member of the household and other items, the classification of persons by their household and family status is a relatively new approach: it is a different approach from the traditional one of classifying household members solely according to their relationship to the head or reference person. The following household and family status classifications illustrate how such an approach may be used.[40] Care should be taken at the planning stages to relate this item to the classification of households by type as recommended in paragraph 2.82.

Persons are classified by household status as:

1 Person in a household with at least one family nucleus
- 1.1 Husband
- 1.2 Wife
- 1.3 Lone mother[41]
- 1.4 Lone father[42]
- 1.5 Child living with both parents
- 1.6 Child living with lone mother
- 1.7 Child living with lone father
- 1.8 Not a member of a family nucleus
  - 1.8.1 Living with relatives
  - 1.8.2 Living with non-relatives

2 Person in a household with no family nucleus
- 2.1 Living alone
- 2.2 Living with others[43]
  - 2.2.1 Living with sibling(s)
  - 2.2.2 Living with other relatives
  - 2.2.3 Living with non-relatives

Persons are classified by family status as:[44]

1 Spouse
- 1.1 Husband
  - 1.1.1 With child(ren)
  - 1.1.2 Without child
- 1.2 Wife
  - 1.2.1 With child(ren)
  - 1.2.2 Without child

2 Lone parent
- 2.1 Male
- 2.2 Female

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40 To date, only the population and housing census recommendations for the ECE region contain household and family status classifications.

41 Person living with children, without spouse.

42 Person living with children, without spouse.

43 The subdivisions in this category should be modified to suit national circumstances.

44 Persons classified as spouse, lone parent or child are by definition members of a family nucleus.

3 Child
- 3.1 With both parents
- 3.2 With lone parent
  - 3.2.1 With lone father
  - 3.2.2 With lone mother

4 Not member of a family nucleus
- 4.1 Relative of husband or wife
  - 4.1.1 Parent of husband or wife
  - 4.1.2 Sibling of husband or wife
  - 4.1.3 Other relative of husband or wife
- 4.2 Non-relative

3. Demographic and social characteristics

2.85. Of all the topics investigated in population censuses, *sex* and *age* are more frequently cross-classified with other characteristics of the population than are any other topics. Aside from the importance of the sex-age structure of the population in itself, accurate information on the two topics is fundamental to the great majority of the census tabulations. Possible difficulties in securing accurate age data are often not recognized because the topic appears to be a simple one. The difficulties are therefore stressed in paragraphs 2.87-2.95 below.

(a) Sex

2.86. The sex (male or female) of every individual should be recorded in the census questionnaire.

(b) Age

2.87. Age is the interval of time between the date of birth and the date of the census, expressed in completed solar years. Every effort should be made to ascertain the precise age of each person, particularly of children under 15 years of age.

2.88. Information on age may be secured either by obtaining the date (year, month and day) of birth or by asking directly for age at the person's last birthday.

2.89. The first method yields more precise information and should be used whenever circumstances permit. If neither the exact day nor even the month of birth is known, an indication of the season of the year can be substituted. The question on date of birth is appropriate wherever people know their birth date, whether in accordance with the solar calendar or a lunar calendar, or whether years are numbered or identified in traditional folk culture by names within a regular cycle. It is extremely important, however, that there should be a clear understanding between the enumerator and the respondent about which calendar system the date of birth is based on. If there is a possibility that some respondents will reply with reference to a calendar system different than that of other respondents, provision must be made in the questionnaire for noting the calendar system that has been used. It is not advisable for the enumerator to attempt to convert the date from one system to another. The needed conversion can be best carried out as part of the computer editing work.

2.90. The direct question on age is likely to yield less accurate responses for a number of reasons. Even if all responses are based on the same method of reckoning age, there is the possibility of a misunderstanding on the part of the respondent as to whether the age wanted is that at the last birthday, the next birthday or the nearest birthday. In addition, roundings to the nearest age ending in zero or five, estimates not identified as such and deliberate misstatements can occur with comparative ease. Difficulties may arise in the reporting or in the recording of the information for children under one year of age, which may be given erroneously as "one year of age" rather than "zero years of age". These difficulties may be mitigated by collecting information on the date of birth of all children reported as "one year of age", while using only the direct age question for the remainder of the population. Another possible approach is to obtain age in completed months for children under one year of age. This method, however, can give rise to another type of recording error, that is to say, the substitution of years for months, so that a three-month-old child, for example, might be entered in the questionnaire as being three years of age.

2.91. An additional complication may occur with the use of the direct question if more than one method of calculating age is in use in the country. In some countries, certain segments of the population may use an old traditional method whereby persons are considered to be one year of age at the time of birth and everyone advances one year in age at the same fixed date each year. Other segments of the population in the same countries may use the Western method, in which a person is not regarded as being one year of age until 12 months after the date of birth, and advances one year in age every succeeding 12 months. If there is a possibility of different methods of age calculation being used by respondents, provision must be made to ensure that the method used in each case is clearly indicated in the questionnaire and that the conversion is left to the editing stage.

2.92. In spite of its drawbacks, the direct question on age is the only one to be used when people cannot provide even a birth year. As regards persons for whom information on age is unavailable or appears to be unreliable, an estimated age may have to be entered. This may occur in isolated cases in societies where knowledge of age is widespread or in general in cultures where there is little awareness of individual age and no interest in it. In the latter circumstances, criteria for making estimates should be provided in the instructions for the enumerators.

2.93. One of the techniques that have been used to aid enumerators consists in providing them with calendars of historic events of national or local significance to be used either in probing questions or in identifying the earliest event the

respondent recalls. Another technique consists in pre-identifying locally recognized age cohorts in the population and then asking about membership in the cohorts. Enumerators may also ask if the person in question was born before or after other persons whose ages have been roughly determined. Furthermore, use can be made of age norms for weaning, talking, marriage and so forth. Whatever techniques are used, enumerators should be impressed with the importance of securing age data that are as accurate as possible within the amount of time that they can devote to the topic.[45]

2.94. In view of the possible difficulties in the collection of age data, census tests should be used, as appropriate, to determine the difference in results with the use of a question on age as compared with a question on date of birth, what calendar and/or method of age reckoning most people use, and in what parts of the country age will have to be estimated for the majority of the population and what techniques to use as an aid in estimation. Testing of the calendar and/or method of age reckoning that most people use is particularly important where an official change from one calendar and/or method of reckoning to another calendar and/or method has taken place recently enough so that the new calendar and/or method of reckoning may not yet be in popular use among some or all of the population.

2.95. Enumerators who are likely to be called upon to estimate age in a substantial number of cases should be given training in the applicable techniques as part of their general training.

(c) Marital status

2.96. Marital status is the personal status of each individual in relation to the marriage laws or customs of the country. The categories of marital status to be identified are at least the following: (*a*) single, in other words, never married, (*b*) married, (*c*) widowed and not remarried, (*d*) divorced and not remarried and (*e*) married but separated.

2.97. In some countries, category (*b*) may require a subcategory of persons who are contractually married but not yet living as man and wife. In all countries, category (*e*) should comprise both the legally and the de facto separated, who may be shown as separate subcategories if desired. Regardless of the fact that couples who are separated may be considered to be still married (because they are not free to remarry), neither of the subcategories of (*e*) should be included in category (*b*).

2.98. In some countries, it will be necessary to take into account customary unions (which are legal and binding under customary law) and extralegal unions, the latter often known as de facto (consensual) unions.

2.99. The treatment of persons whose only or latest marriage has been annulled is dependent upon the relative size of this group in the country. Where its size is substantial, the group should constitute an additional category; if its size is insignificant, the individuals in the group should be classified according to their marital status before the (annulled) marriage took place.

2.100. At times countries have experienced difficulties in distinguishing between (*a*) formal marriages and de facto unions and (*b*) persons legally separated and those legally divorced. If either of these circumstances necessitates a departure from the recommended classification of marital status, the composition of each category shown in the tabulations should be clearly stated.

2.101. If complete information on marital status is needed, then this information should be collected and tabulated for persons of all ages, irrespective of the national minimum legal age, or the customary age, for marriage, because the population may include persons who were married in another country with a different minimum marriage age; in most countries, there are also likely to be persons who were permitted to marry below the legal minimum age because of special circumstances. In order to permit international comparisons of data on marital status, however, any tabulations of marital status not cross-classified by detailed age should at least distinguish between persons under 15 years of age and those 15 years of age and over.

2.102. The collection of additional information related to customs in particular countries (such as concubinage, polygamous or polyandrous marital status, inheritance of widows, and so on) may be useful in meeting national needs. For example, at times countries may wish to collect data on the number of spouses of each married person. Modifications of the tabulations to take account of such information should be made within the framework of the basic classification in order to maintain international comparability as far as possible.

2.103. The marital status categories described above do not provide complete information on the range of de facto unions of varying degrees of stability, which may be common in some countries; nor do they adequately describe the prevalence of formal marriage combined with relatively stable de facto union outside the marriage. Information on these relationships is very useful in studies of fertility but it is not possible to provide an international recommendation on this matter because of the different circumstances prevailing among countries. It is suggested, however, that countries wishing to investigate these relationships should consider the possibility of collecting separate data for each person on formal marital unions, on de

[45] For a more detailed discussion of the investigation of age, see William Seltzer, *Demographic Data Collection: A Summary of Experience* (New York, The Population Council, 1973), pp. 8-18.

facto unions and on the duration of each type of union (see para. 2.142).

(d) Citizenship

2.104. Citizenship is the legal nationality of each person. A citizen is a legal national of the country of the census; a foreigner or alien is a non-national of that country. Because the country of citizenship of a person need not necessarily coincide with the country of birth of that person (see para. 2.29), both items should be recorded in the census.

2.105. Information on citizenship should be collected so as to permit the classification of the population into (*a*) citizens by birth, (*b*) citizens by naturalization whether by declaration, option, marriage or other means and (*c*) foreigners. In addition, information on the country of citizenship of foreigners should be collected. It is important to record country of citizenship as such and not to use an adjective to indicate citizenship, since some of those adjectives are the same as those used to designate ethnic group. It is essential that the coding of information on country of citizenship be done in sufficient detail to allow for the individual identification of all countries of citizenship that are represented among the foreign population in the country. For purposes of coding, it is recommended that countries use the numerical coding system presented in *Standard Country or Area Codes for Statistical Use*[46]. The use of standard codes for classification of the foreign population by country of citizenship will enhance the usefulness of such data and permit an international exchange of information on the foreign population among countries. If countries decide to combine countries of citizenship into broad groups, it is recommended that the standard regional and subregional classifications identified in the above-mentioned publication be adopted.

2.106. Enumeration and processing instructions should indicate the disposition to be made of stateless persons, persons with dual nationality, persons in process of naturalization and any other groups with ambiguous citizenship. The treatment of these groups should be described in the census reports.

2.107. For countries where the population includes a significant proportion of naturalized citizens, additional questions on previous nationality, method of naturalization and year of naturalization are useful if very detailed information on this subject is required.

2.108. The reliability of reported citizenship may be doubtful in the case of persons whose citizenship has recently changed as a result of territorial changes, or among the population of some newly independent countries where the concept of citizenship has only recently become important. As an aid to the analysis of the results, tabulations based on citizenship should be accompanied by notations indicative of the likelihood of these or similar causes of misstatement. For the purpose of preparing tabulations on citizenship, all countries should be shown separately to the extent possible and a category of stateless persons should be presented.

(e) Religion

2.109. For census purposes, religion may be defined as either (*a*) religious or spiritual belief of preference, regardless of whether or not this belief is represented by an organized group, or (*b*) affiliation with an organized group having specific religious or spiritual tenets. Each country that investigates religion in its census should use the definition most appropriate to its needs and should set forth, in the census publication, the definition that has been used.

2.110. The amount of detail collected on this topic is dependent upon the requirements of the country. It may, for example, be sufficient to inquire only about the religion of each person; on the other hand, respondents may be asked to specify, if relevant, the particular sect to which they adhere within a religion.

2.111. For the benefit of users of the data who may not be familiar with all of the religions or sects within the country, as well as for purposes of international comparability, the classifications of the data should show each sect as a subcategory of the religion of which it forms a part. A brief statement of the tenets of religions or sects that are not likely to be known beyond the country or region would also be helpful.

(f) Language

2.112. There are three types of language data that can be collected in censuses, namely:

(*a*) Mother tongue, defined as the language usually spoken in the individual's home in his or her early childhood;

(*b*) Usual language, defined as the language currently spoken, or most often spoken, by the individual in his or her present home;

(*c*) Ability to speak one or more designated languages.

2.113. Each of these types of information serves a very different analytical purpose. Each country should decide which, if any, of these types of information is applicable to its own needs. International comparability of tabulations is not a major factor in determining the form of the data to be collected on this topic.

2.114. In compiling data on the usual language or on the mother tongue, it is desirable to show each language that is numerically important in the country and not merely the dominant language.

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[46] Statistical Papers, No. 49, Rev.3 (ST/ESA/STAT/SER. M/49/Rev.3).

2.115. Information on language should be collected for all persons. In the tabulated results, the criterion for determining language for children not yet able to speak should be clearly indicated.

(g) National and/or ethnic group

2.116. The national and/or ethnic groups of the population about which information is needed in different countries are dependent upon national circumstances. Some of the bases upon which ethnic groups are identified are ethnic nationality (in other words country or area of origin as distinct from citizenship or country of legal nationality), race, colour, language, religion, customs of dress or eating, tribe or various combinations of these characteristics. In addition, some of the terms used, such as "race", "origin" and "tribe", have a number of different connotations. The definitions and criteria applied by each country investigating ethnic characteristics of the population must therefore be determined by the groups that it desires to identify. By the very nature of the subject, these groups will vary widely from country to country; thus, no internationally relevant criteria can be recommended.

2.117. Because of the interpretative difficulties that may occur, it is important that, where such an investigation is undertaken, the basic criteria used be clearly explained in the census report so that the meaning of the classification is readily apparent.

4. Fertility and mortality

2.118. The investigation of fertility and mortality in population censuses is particularly important in countries lacking a timely and reliable system of vital statistics because of the opportunity the data provide for estimating vital rates that would not otherwise be available. Even in countries with complete birth and death registration, some of the topics ("children born alive", "children living", and "age at marriage") are equally appropriate because they provide data that are not easily available from registration data. The population census provides an opportunity to collect data for estimating fertility and mortality at national and subnational levels in a cost-effective manner. The inclusion of these topics in population censuses for the purpose of estimating fertility and mortality rates and other related indicators is both prudent and cost-effective, particularly in countries where civil registration and vital statistics systems are weak, and costs of conducting large periodic demographic surveys are high.

2.119. Three questions are posed to obtain information on fertility: children ever born, date of last child born alive and age of mother at birth of first child born alive. In addition, questions on age, date or duration of marriage may improve fertility estimates based on children ever born (see para. 2.142). For the collection of reliable data, some of the topics may require a series of probing questions that, because they are time-consuming, are more suitable for use in sample surveys than in censuses.

2.120. A number of countries have restricted the collection data from fertility and mortality questions in the census to a sample of enumeration areas,[47] entailing the introduction of more vigorous training and permitting the selection of more suitable field staff. When those items are included in the census, certain precautions to ensure accuracy and completeness should be observed. Every effort should be made to collect all relevant information directly from the woman concerned, because she is much more likely to correctly recall the details of her fertility, the mortality of her offspring and her marital experiences than any other member of the household. To reduce under-reporting of events and to improve the accuracy of responses to questions on fertility and mortality, enumerators need to receive specific training on probing questions that highlight common errors and omissions. Enumerator manuals should also include the measures that are needed to minimize such errors.

2.121. The universe for which data should be collected for each of the topics included in this section consists of women 15 years of age and over regardless of marital status, or of particular subcategories such as ever-married women as indicated. However, where countries do not use data for women 50 years of age and over, efforts should be concentrated on collecting data from women between 15 and 50 years of age only, whereas in the investigation of recent fertility (see para. 2.132) it may be appropriate in some countries to reduce the lower age-limit by several years.

2.122. In addition to the topics indicated above that are used to estimate fertility, another useful topic that allows the estimation of fertility is the "own children" method.[48] The application of this method requires the identification of the "natural mother" of each child in the household when the natural mother appears in the same questionnaire as the child. In cases where it is difficult to ascertain the identity of the natural mother, one may use as a proxy the relationship to head of household or to reference person of household (see para. 2.67), or children living (see paras. 2.132-2.133) to establish the identity of the natural mother. In essence, information on the child's age and the mother's age are used to estimate a series of annual fertility rates for years prior to the census. The reliability of the estimates produced depends, among other things, on the proportion of mothers enumerated in the same questionnaire as their own children, the accuracy of age-reporting for both

[47] For the use of sampling in the enumeration, see chapter III.

[48] For methodological details, see *Manual X: Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2), chap. VIII, sect. C.

mothers and their children and the accuracy of available estimates of mortality for women and children.

2.123. Mortality topics include infant and child mortality obtained from data on children ever born and children living, and adult mortality obtained from deaths in the past 12 months and maternal or paternal orphanhood. The extent to which adult mortality can be adequately measured from population census data -- particularly from the more innovative approaches to mortality estimation, such as the sisterhood and orphanhood methods -- is still uncertain. Accurate responses to these questions are difficult to obtain but essential, for the reliability of estimates is also affected by errors in the recording of deaths in the past 12 months by sex, age and date.

2.124. As far as possible, efforts to obtain information on the mortality of a child or the survival of a woman's children should be obtained directly from the mother herself. Deaths, by date, sex and age, in the 12-month period prior to the census should be collected from the head of the household (or reference person in the household). Information on maternal orphanhood and paternal orphanhood should be collected for each person in the household regardless of age. As with fertility, mortality questions may be limited to a sample of enumeration areas.

2.125. The limitations of the data collected and of the estimates based on them should be made clear in the census reports. Furthermore, since some of the estimation procedures are only suitable for use in certain circumstances, it is important that census data producers consult specialists and/or carefully evaluate the methodologies for estimating the indicators for their appropriateness in a given situation.

(a) Children ever born[49]

2.126. Information on number of children born alive (lifetime fertility) should include all children born alive (that is to say, excluding foetal deaths) during the lifetime of the woman concerned up to the census date. The number recorded should include all live-born children, whether born in or out of marriage, whether born in the present or a prior marriage, or in a de facto union , or whether living or dead at the time of the census.

2.127. Data on the total number of live-born children should preferably be collected for all women 15 years of age and over, regardless of marital status. If, from a cultural standpoint, it is not feasible in some countries to obtain the information for single women, it should be collected at least for all women 15 years of age and over who are or have been married (in other words, all ever-married women), a group also including all widowed, divorced and separated women. In either case, the group of women for whom the data have been collected should be clearly described in the census report so as to avoid ambiguity in the analysis of the results. In some countries, there is substantial age-misreporting in the population census, which distorts fertility and mortality estimation based on children ever born and children living cross-tabulated by age of the woman.[50]

2.128. In order to improve the completeness of coverage and to assist the respondent in recalling her children ever born alive, it is recommended that a sequence of questions be included in the following order: (*a*) "total number of sons ever born alive during the lifetime of the woman"; (*b*) "total number of sons living (surviving) at the time of the census"; (*c*) "total number of sons born alive who have died before the census date"; and (*d*) "total number of daughters ever born alive during the lifetime of the woman"; (*e*) "total number of daughters living (surviving) at the time of the census"; and (*f*) "total number of daughters born alive who have died before the census date". The responses to topics (*b*), (*c*), (*e*) and (*f*) allow for a checking of the responses to (*a*) and (*d*). Inconsistencies in the figures, if any, can sometimes be solved during the interview.

2.129. The number of sons and daughters should comprise all children ever born alive whether born of the present or a prior marriage[51] and should exclude foetal deaths and adopted children. Also, the number of children, male and female, who are alive at the time of the census should include those living with the mother in the household and those living elsewhere, no matter where the latter may reside and regardless of their age and marital status.

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49 "*Manual X: Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2); National Academy of Sciences, Committee on Population and Demography, *Collecting Data for the Estimation of Fertility and Mortality*, Report No.6 (Washington D. C., National Academy Press, 1981), p.220; *Handbook of Population and Housing Censuses, Part II*, Studies in Methods, No. 54 (United Nations publication, Sales No. E.91.XVII.9), chaps. III and IV; *Step-by-Step Guide to Estimation of Child Mortality*, Population Studies, No. 107 (United Nations publication, Sales No. E.89.XIII.9).

50 The data on children ever born and children surviving at the time of the census become distorted by errors either in the reported number of children ever born and surviving or in the classification of women in particular age/duration-of-marriage groups. Such distributions (biases) result in gross underestimation of fertility and mortality levels, particularly when data are disaggregated for small geographical areas See *Manual X: Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2) chap. II, sect. A.2, and chap. III, sect. A.1). For additional methodological details on the uses of the data, see *Manual X*.

51 As indicated in paragraph 2.78, couples living in consensual unions should be regarded as married.

2.130. The collection of data on children ever born specified by sex not only improves accuracy of information but also provides data for indirect estimation of sex differentials in infant and child mortality, in combination with data on children living (surviving) by sex (see para. 2.132). If the information on "children ever born alive by sex" is collected for only a sample of women, the data on "children living by sex" should also be obtained for the same sample.

2.131. Information on "total number of children ever born alive by sex" provides data on the lifetime fertility of each woman, which is used for the estimation of age-specific fertility rates and other fertility indicators. Furthermore, information on "total number of children living (surviving) specified by sex" is used for the indirect estimation of sex differentials in infant and child mortality in combination with data on children ever born alive by sex.

(b) Children living[52]

2.132. Research has suggested that improved coverage and quality of data on the total number of children ever born will be achieved if more detailed questions about the current residence of children ever born are asked, in terms of the following: (*a*) "total number of sons living in the household"; (*b*) "total number of sons living elsewhere"; (*c*) "total number of sons born alive who have died before the census date"; (*d*) "total number of daughters living in the household"; (*e*) "total number of daughters living elsewhere"; and (*f*) "total number of daughters born alive who have died before the census date". These questions not only give a more complete and accurate reporting of children ever born alive specified by sex but also increase the questions' suitability for subsequent analysis.

2.133. The identification of the natural mother of each child under 15 years of age in the same household, to be used in the "own children" method of estimating fertility, should be made by asking each woman who reports one or more of her children as being born alive and living in the household to identify these children in the census questionnaire. The section of the questionnaire on "relationship to the head of the household or to the reference person in the household" may be used for identifying the natural mother of each child living in the household.

(c) Date of birth of last child born alive

2.134. Information on date of birth (day, month and year) of the last child born alive and on the sex of the child is used for estimating current fertility. Later, at the processing stage, "the number of children born alive in the 12 months immediately preceding the census date" can be derived as an estimate of live births in the last 12 months. For estimating current age-specific fertility rates and other fertility measures, the data provided by this approach are more accurate than information on the number of births to a woman during the 12 months immediately preceding the census.

2.135. It should be noted that information on the date of birth of the last child born alive does not produce data on the total number of children born alive during the 12-month period. Even if there are no errors in reporting of the data on the last live-born child, this item ascertains the number of women who had at least one live-born child during the 12-month period, not the number of births, since a small proportion of women will have had more than one child in a year.

2.136. The information needs to be collected only for women between 15 and 50 years of age who have reported having at least one live birth during their lifetime. Also, the information should be collected for all the marital-status categories of women for whom data on children ever born by sex (see para. 2.126) are collected. If the data on children ever born are collected for a sample of women, information on current fertility should be collected for the same sample.

(d) Deaths in the past 12 months[53]

2.137. Information on deaths in the past 12 months are used to estimate the level and pattern of mortality by sex and age in countries that lack satisfactory continuous death statistics from civil registration. In order for estimation derived from this item to be reliable, it is important that deaths in the past 12 months by sex and age be reported as completely and as accurately as possible. The fact that mortality questions have been included extensively in the census questionnaire in the past decades has resulted in an improvement in the use of indirect estimation procedures for estimates of adult mortality.

2.138. Ideally, mortality should be sought for each household in terms of the total number of deaths in the 12-month period prior to the census date. In cases where it is not possible to obtain information on deaths during the past 12 months, it is advisable to at least collect data on deaths to children under one year of age. For each deceased person reported, name, age, sex, date (day, month, year) of death should also be collected. Care

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[52] For methodological details on the uses of the data, together with data on live-born children, see the publications mentioned in footnote 49.

[53] See *Manual X*: *Indirect Techniques for Demographic Estimation*, Populaton Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2), chap. V, sects. A and B; *Data Bases for Mortality Measurement*, (United Nations publication, Sales No. E.83.XIII.3); Ian M. Timaeus, "Measurement of adult mortality in less developed countries: a comparative review", *Population Index*, vol. 57, No. 4 (winter 1991), pp. 552-568..

should be taken to clearly specify the reference period to the respondent so as to avoid errors due to its misinterpretation. For example, a precise reference period could be defined in terms of a festive or historic date for each country.

(e) Maternal or paternal orphanhood [54]

2.139. Some countries may also wish to collect information on maternal or paternal orphanhood in another attempt to ascertain the level and patterns of mortality in the population. Census data from these two questions are intended for indirect estimation of mortality by sex. Estimates are based on the proportion of persons classified by age whose natural mothers or fathers are still alive at the time of the census.

2.140. For the collection of information on orphanhood, two direct questions should be asked, namely (*a*) whether the natural mother of the person enumerated in the household is still alive at the time of the census and (*b*) whether the natural father of the person enumerated in the household is still alive at the time of the census, regardless of whether or not the mother and father are enumerated in the same household. The investigation should secure information on biological parents. Thus care should be taken to exclude adopting and fostering parents. Because there is usually more than one surviving child who will respond on orphanhood status, it is necessary to devise questions to overcome duplications in respect of parents reported by siblings. For this purpose, two additional questions should be asked, namely, whether (*a*) the respondent is the oldest surviving child of his or her mother, and (*b*) whether the respondent is the oldest surviving child of his or her father. Tabulations should be made in regard only to the oldest surviving child.

2.141. It is preferable for these questions to be collected from every person in the household regardless of age.

(f) Age, date or duration of first marriage

2.142. "Date of first marriage" comprises the day, month and year when the first marriage took place. In countries where date of first marriage is difficult to obtain, it is advisable to collect information on age at marriage or on how many years ago the marriage took place (duration of marriage). Include not only contractual first marriages and de facto unions but also customary marriages and religious marriages. For women who are widowed, separated or divorced at the time of the census, "date of/age at/number of years since dissolution of first marriage" should be secured. Information on dissolution of first marriage (if pertinent) provides data necessary to calculate "duration of first marriage" as a derived topic at the processing stage. In countries in which duration of marriage is reported more reliably than age, tabulations of children ever born by duration of marriage yield better fertility estimates than those based on data on children born alive classified by age of the woman [55]. Data on duration of marriage can be obtained by subtracting the age at marriage from the current age, or directly from the number of years elapsed since the marriage took place.

(g) Age of mother at birth of first child born alive [56]

2.143. Age of mother at the time of the birth of her first live-born child is used for the indirect estimation of fertility based on first births and to provide information on onset of childbearing. If the topic is included in the census, information should be obtained for each woman who has had at least one child born alive.

5. Educational characteristics

2.144. The recommendations on “educational attainment” (see para. 2.153) and “educational qualifications” (see para. 2.163) make use of categories of the 1997 revision of the International Standard Classification of Education (ISCED), issued by the United Nations Educational, Scientific and Cultural Organization (UNESCO).[57] In accordance with national conditions and requirements, many countries can continue to apply national classifications of levels and grades of education and of fields of education in collecting and tabulating statistics from population censuses. Special attention needs to be paid to establishing appropriate level-grade equivalence for persons who have received education under a different or foreign

[54] For methodological details on the uses of the data, see *Handbook of Population and Housing Censuses, Part II*, Studies in Methodology, No. 54 (United Nations publication, Sales No. E.91. XVII.9), chaps. III and IV, *Manual X: Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2), chap. IV, sects A, B.1 and B.2; J. G. C. Blacker, "The estimates of adult mortality in Africa from data on orphanhood", *Population Studies*, vol. XXXI, No. 1 (March 1977), pp. 107-128; Kenneth H. Hill and T. James Trussel, "Further developments in indirect mortality estimation", *Population Studies*, vol. XXXI, No. 2 (July 1977), pp. 313-334; William Brass and K. Hill, "Estimating adult mortality from orphanhood", in *International Population Conference*, vol. 3 (Liège, Belgium, International Union for the Scientific Study of Population, 1973), pp.11-123; Ian Timaeus and Wendy Graham, Measuring Adult Mortality in Developing Countries. A Review and Assessment of Methods, World Bank Working Paper, No. 155 (Washington, D.C., World Bank, Population and Human Resources Department, April, 1989); Ian M. Timaeus, “Measurement of adult mortality in less developed countries: a comparative review”, *Population Index*, vol. 57, No. 4 (winter 1991), pp. 552-568.

[55] See *Manual X*: *Indirect Techniques for Demographic Estimation*, Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2), chap. II, sect. D.

[56] Ibid., chap. II, sect. B.3.

[57] See annex II of document 29C/20 of the twenty-ninth session of the General Conference of UNESCO (8 August 1997).

educational system. Countries that have not yet developed comprehensive national classifications of education may choose to adopt the revised ISCED or may wish to modify it to suit national conditions.

(a) Literacy

2.145. Data on literacy should be collected so as to distinguish between persons who are "literate" and those who are "illiterate". A literate person is one who can, with understanding, both read and write a short, simple statement on his or her everyday life. An illiterate person is one who cannot, with understanding, both read and write such a simple statement. Hence, a person capable of reading and writing only figures and his or her own name should be considered illiterate, as should a person who can read but not write as well as one who can read and write only a ritual phrase that has been memorized. Some countries may classify these persons as "semi-illiterate" and assign specific criteria for their identification, but the semi-illiterate category is not used in international comparisons.

2.146. The notion of literacy applies to any language insofar as it exists in written form. In multilingual countries, the census questionnaire may query the languages in which a person can read and write. Such information can be essential for the determination of educational policy and this item would therefore be a useful additional subject of inquiry.

2.147. It is preferable that data on literacy be collected for all persons 10 years of age and over. In a number of countries, however, certain persons between 10 and 14 years of age may be about to become literate through schooling. The literacy rate for this age group may be misleading. Therefore, in an international comparison of literacy, data on literacy should be tabulated for all persons 15 years of age and over. Where countries collect the data for younger persons, the tabulations on literacy should at least distinguish between persons under 15 years of age and those 15 years of age and over.

2.148. Because of the possible reluctance of some illiterate persons to admit to their illiteracy and the difficulties of applying a test of literacy during a census investigation, straightforward operational criteria and instructions for collecting literacy statistics should be clearly established on the basis of the definition given in paragraph 2.145, and applied during census-taking. In addition, literacy tests can also be administered as part of a post-enumeration evaluation survey, or combined with household surveys, in order to verify as well as improve the quality of literacy data. An evaluation of the quality of literacy statistics should be provided with census statistics on literacy.

2.149. The collection and tabulation of statistics on literacy during the population census should, to the extent possible, not be based on any assumed linkages between literacy, school attendance and educational attainment. In operational terms, this means systematically inquiring about the literacy status of each household member irrespective of school attendance or highest grade or level completed.

(b) School attendance

2.150. School attendance is defined as attendance at any regular accredited educational institution or programme, public or private, for organized learning at any level of education at the time of the census or, if the census is taken during the vacation period at the end of the school year, during the last school year. For the purposes of ISCED and based on the revised definition, education is taken to comprise all deliberate and systematic activities designed to meet learning needs. Instruction in particular skills, which is not part of the recognized educational structure of the country (for example, in-service training courses in factories), is not normally considered "school attendance" for census purposes.

2.151. Information on school attendance in principle should be collected for persons of all ages. It relates in particular to the population of official school age, which ranges in general from 5 to 29 years of age but can vary from country to country depending on the national education structure. In the case where data collection is extended to cover attendance in pre-primary education and/or other systematic educational and training programmes organized for adults in productive and service enterprises (such as the in-service training courses mentioned in para. 2.150), community-based organizations and other non-educational institutions, the age range may be adjusted as appropriate.

2.152. Data on school attendance should be cross-classified with data on educational attainment, according to the person's current level and grade (see para. 2.151). This cross-classification can provide useful information on the correspondence between age and level or grade of educational attainment for persons attending school.

(c) Educational attainment

2.153. Educational attainment is defined as the highest grade completed within the most advanced level attended in the educational system of the country where the education was received. Some countries may also find it useful to present data on educational attainment in terms of highest grade attended. If required, data on educational attainment can take into account education and training received in all types of organized educational institutions and programmes, particularly those measurable in terms of grade and level of education or their equivalent such as programmes in adult education, even if the education and training were provided outside of the regular school and university system. For international purposes, a

"grade" is a stage of instruction usually covered in the course of a school year. Information on educational attainment should preferably be collected for all persons 5 years of age and over.

2.154. To produce statistics on educational attainment, a classification is needed that indicates the grades or years of education in primary, secondary and post-secondary school. Since the educational structure may have changed over time, it is necessary to make provisions for persons educated at a time when the national educational system differed from that in place at the time of the census. In addition to focusing attention on the collection of educational attainment data, enumerator instructions, coding and data processing need to be designed in a way that will take account of any changes in the educational system of a country over the years and of those educated in another country, as well as those educated in the current system.

2.155. Information collected on the highest grade of education completed by each individual facilitates flexible regrouping of the data according to various kinds of aggregation by level of education, for the purpose, for example, of distinguishing between persons who did and persons who did not complete each level of education.

2.156. For international comparison, data from the population census are needed for three levels of education: primary, secondary, and post-secondary. To the extent possible, countries can classify statistics on educational attainment by individual ISCED levels as given below (or by their equivalent as set forth according to the national classification of levels of education):

ISCED level 0: Pre-primary education
ISCED level 1: Primary education
ISCED level 2: Lower secondary education
ISCED level 3: (Upper) secondary education
ISCED level 4: Post-secondary education
ISCED level 5: First stage of tertiary education (not leading directly to an advanced research qualification)
ISCED level 6: Second stage of tertiary education (leading to an advanced research qualification)

Persons with no schooling should also be identified. Any differences between national and international definitions and classifications of education should be explained in the census publications in order to facilitate comparison and analysis.

2.157. Data on school attendance, educational attainment and literacy status should be collected and tabulated separately and independently of each other, without (as elaborated in paragraph 2.149) any assumption of linkages between them.

(d) Field of education and educational qualifications

(*i*) Field of education

2.158. Information on persons by level of education and field of education is important for examining the match between the supply and demand for qualified manpower with specific specializations within the labour market. It is equally important for planning and regulating the production capacities of different levels, types and branches of educational institutions and training programmes.

2.159. A question on field of education needs to be addressed to persons 15 years of age and over who attended at least one grade in secondary education or who attended other organized educational and training programmes at equivalent levels.

2.160. The revised ISCED distinguishes between the following major fields (one-digit codes) and sub-fields (two- digit codes) of education:

Code	
0	General programmes
01	Basic programmes
08	Literacy and numeracy
09	Personal development
1	Education
14	Teacher training and education science
2	Humanities and arts
21	Arts
22	Humanities
3	Social science, business and law
31	Social and behavioural science
32	Journalism and information
34	Business and administration
4	Science
42	Life sciences
44	Physical sciences
46	Mathematics and statistics
48	Computing
5	Engineering, manufacturing and construction
52	Engineering and engineering trades
54	Manufacturing and processing
58	Architecture and building
6	Agriculture
62	Agriculture, forestry and fishery
64	Veterinary
7	Health and welfare
72	Health
76	Social services
8	Services
81	Personal services
84	Transport services
85	Environmental protection
86	Security services
9	99 Not known or unspecified

2.161. Countries may wish to consider collecting data on detailed fields of education, not only major ones. When coding field of education, countries should make use of an established national classification or, if this does not exist, adopt the classification and coding of fields of education of ISCED. Any difference between national and international definitions and classifications of fields of education should be explained in the census publications so as to facilitate international comparison and analysis.

2.162. Countries coding field of education according to a national classification can also establish correspondence with ISCED either through double-coding or through "conversion" from the detailed national classification to ISCED. A problem may arise in identifying the exact field(s) of education of persons with interdisciplinary or multi-disciplinary fields of specialization. It is recommended that countries follow the procedure of identifying the major or principal field of education of those with multidisciplinary specialization.

(*ii*) Educational qualifications

2.163. Qualifications are the degrees, diplomas, certificates, professional titles and so forth that an individual has acquired, whether by full-time study, part-time study or private study, whether conferred in the home country or abroad, and whether conferred by educational authorities, special examining bodies or professional bodies. The acquisition of an educational qualification therefore implies the successful completion of a course of study or training programme.

2.164. According to national needs, information on qualifications may be collected from persons who have reached a certain minimum age or level of educational attainment. Such information should refer to the title of the highest certificate, diploma or degree received.

6. Economic characteristics

2.165. The census topics relating to economic characteristics of the population discussed below concentrate on the economically active population as defined in the recommendations of the International Labour Organization (ILO)[58], where the concept of economic production is established with respect to the System of National Accounts.[59]

2.166. The *economically active population* comprises all persons of either sex who provide or are available to provide the supply of labour for the production of economic goods and services, as defined by the SNA, during a specified time-reference period. Activities are within the production boundary defined by the SNA[60] if they comprise (*a*) production of goods or services supplied or intended to be supplied for sale in the market; (*b*) own-account production of all goods retained by their producers; and (*c*) own-account production of housing services by owner-occupiers and of domestic and personal services produced by paid domestic staff. Own-account production of goods and services includes for example, production of agricultural products and their subsequent storage; production of other primary products such as mining of salt, cutting of peat, supply of water; processing of agricultural products; and other kinds of processing such as weaving of cloth, dressmaking and tailoring; production of footwear, pottery, utensils or durables; making of furniture or furnishings; and major renovations, extensions to dwellings, replastering of walls or re-roofing by owners of owner-occupied dwellings.[61] It is advisable for countries to develop a more extensive list of such own-account production activities considered to be within the SNA production boundary, so as to ensure that those involved in such activities are correctly classified as economically active.[62]

2.167. Domestic or personal services provided by unpaid household members for final consumption within the same household are excluded from the production boundary and hence are not considered to be economic activities. (Examples are (*a*) the cleaning, decoration and maintenance of the dwelling occupied by the household, including small repairs of a kind usually carried out by tenants as well as owners; (*b*) the cleaning, servicing and repair of household durables or other goods, including vehicles used for household purposes; (*c*) the preparation and serving of meals; (*d*) the care, training and instruction of children; (*e*) the care of sick, infirm or old people; and (*f*) the transportation of members of the household or their goods.)

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[58] For more details, see *Thirteenth International Conference of Labour Statisticians (resolution 1, concerning statistics of the economically active population, employment, unemployment and underemployment* (Geneva, International Labour Office, 1982), paras. 14-20.

[59] Commission of the European Communities, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations and World Bank, *System of National Accounts 1993* (United Nations publication, Sales No. E.94.XVII.4).

[60] Ibid., para. 6.18.

[61] Ibid., paras. 6.24 and 6.25.

[62] Although in theory the production of all goods is within the SNA production boundary, in practice the value of some types of production is not estimated as part of the national accounts, if the goods produced are believed not to be quantitatively important in relation to the total supply of the goods produced in a country. Countries might wish to exclude such activities from the activity list in order to maintain a correspondence between the scope of economic activity and national accounts production.

(a) Activity status

2.168. The economically active population can be measured in many different ways, and the 1982 recommendations of ILO include, in particular, two useful ways of measuring the economically active population. One approach uses the *usually active population*, measured in relation to a long reference period such as a year, and the other uses the *currently active population* or, equivalently, the *labour force*, measured in relation to a short reference period such as one week or one day. The simultaneous use of these two approaches in the census is a possibility that should be considered, taking into account the advantages and disadvantages of each approach, as well as national circumstances and specific needs. To enhance the possibilities for the analysis of economic activity, countries using the labour-force concept (*current activity*) should endeavour to obtain supplementary data covering at least a count of persons who were *usually economically active* during a specified 12-month period, and countries using the concept of *usual activity* should endeavour to obtain supplementary data covering at least the size of the labour force during a one-week period.

2.169. The choice of approach for measuring the economically active population in population censuses is fundamental to the scope and quality of census data on the economic characteristics of the population and their linkage with similar statistics obtained from other sources (for example, labour-force surveys, establishment surveys and administrative records). Furthermore, such a choice is vital to the international comparability of economic statistics of countries and regions.

2.170. The advantage of the *current activity* concept is that it requires information only concerning activities undertaken on the census reference date or immediately prior to that date. This minimizes the possibility for recall errors. The short reference period also means that the number of different activities undertaken and situations experienced being few, the construction of the questionnaire is thus simpler than when using a longer reference period. The current activity status based on a brief reference period is considered most appropriate for countries where the economic activity of people is not greatly influenced by seasonal factors, that is to say where the results will not significantly depend on the timing of the reference period during the year. It may not, however, be equally appropriate for countries where the economic activity of people is carried out predominantly in sectors subject to significant seasonal variations, such as agriculture and tourism, and where people are therefore likely to be seasonally unemployed or engaged in more than one type of activity. Seasonal variations in employment and unemployment may be significant both in industrialized and in developing economies, but such variations tend to be less widespread in the former and are therefore generally measured through monthly or quarterly surveys for which the census results will provide an important supplement, in particular for regions and small groups, as well as a benchmark. The "current activity" measure is the one used as the basis for international comparisons of the economically active population, employment and unemployment.

2.171. The advantage of a long reference period such as the preceding 12 months is that it can provide information on the usual activity of each individual over the year as a whole, giving results that are much less dependent on the timing of the census date, and thereby giving data that are considered to represent a stable measure of the economically active population and its structural distribution for economic analysis, projections and development planning. However, the construction of the census questionnaire will be more complicated with this approach if one wants to reduce the problems related to recall errors, to the measurement of low-intensity economic activities, and to the capture of characteristics of the main type of activity for the reference period, and in particular if one wants to ensure adequate recording of secondary activities, if any, over the year, in particular those that are within the production boundary but are not commonly regarded as representing employment.

(*i*) Economically active population

2.172. Information on activity status should in principle cover the entire population, but in practice it is collected for each person at or above a minimum age set in accordance with the conditions in each country. The minimum school-leaving age should not automatically be taken as the lower age-limit for the collection of information on activity status. Countries in which, normally, many children participate in agriculture or other types of economic activity (for example, mining, weaving, petty trade) will need to select a lower minimum age than that in countries where employment of young children is uncommon. Tabulations of economic characteristics should at least distinguish persons under 15 years of age and those 15 years of age and over; and countries where the minimum school-leaving age is higher than 15 years and where there are economically active children below this age should endeavour to secure data on the economic characteristics of these children with a view to achieving international comparability at least for persons 15 years of age and over. The participation in economic activities of elderly men and women after the normal age of retirement is also frequently overlooked. This calls for close attention when measuring the economically active population. A maximum age limit for measurement of the economically active population should normally not be used, as a considerable number of elderly persons beyond retirement age may be engaged in economic activities, either regularly or occasionally.

2.173. When classifying the population by activity status precedence is given to being economically active; in other words, a student who is seeking work should be classified as

unemployed and economically active; and a person looking for work who works for the minimum amount of time required by the census to count as being employed should be classified as *employed* and not as unemployed.

2.174. Depending on the way the relevant parts of the census questionnaire have been constructed, the determination of the economic activity status of a person may be influenced by respondents' and enumerators' subjective understanding of the notion of work and economic activity. In this regard, particular attention should be given to special groups for which the determination of activity status may be difficult. These groups include, for example, active youth, women and the elderly, in particular those working as contributing family members. The common notion that women are generally engaged in home--making duties, or cultural perceptions relating to sex roles, can result in a serious omission with respect to measuring women's economic activity status. A review of national practices and experimental research indicate that the potential for women to be classified as homemakers rather than economically active persons is high when only the basic questions are asked. Better results, showing higher proportions of women as economically active, have been recorded in cases when further probes are used to determine whether those reported as homemakers were in fact involved in some typically misclassified economic activities.

2.175. To reduce under-reporting of economic activity, enumerators need to be explicitly instructed or the questionnaires specifically designed to ask, as they do for men, about the possible economic activity of every woman in the household. Training of enumerators should highlight such likely sources of sex biases leading to underestimation of women's participation in economic activities as incomplete coverage of unpaid economic activities, failure of respondents and enumerators to take account of women's multiple activities, some economic and some non-economic, and the tendency to automatically enter women as homemakers, particularly if the women are married. Clear direction needs to be given in the enumerators' manual on the appropriate use of probes, whenever necessary and possible, for example by providing the enumerator with a list[63] of typically misclassified activities and instructing them to use a follow-up question addressed only to (or about) those reported as homemakers. The use of an activity list has been found useful in clarifying the concept of economic activity and could be provided in the enumerators' manual. Examples of specific activities, such as unpaid work that are part of economic activity could also be included in the questionnaire (See para. 2.166).

2.176. The use of probes may lengthen the interview and increase the cost of the census. Accordingly, it will be necessary to balance the gains in terms of minimizing response errors when probes are used against the added costs associated with their use. Given the importance of reliable data on activity status, serious consideration should be given to minimizing classification errors. To this end, in addition to the use of probes, improved training may help to reduce interviewers' bias and change their perceptions of what activities or types of production are economic.

a. Usually active population

2.177. The usually active population comprises all persons above a specified age whose activity status, as determined in terms of the total number of weeks or days during a long specified period (such as the preceding 12 months or the preceding calendar year) was either "employed" or "unemployed" as defined in paragraphs 2.182 and 2.194. In applying the definition of "usually active", either of two procedures may be followed during enumeration to determine the usual activity status of each person. One procedure is to interpret it as the status that prevailed over most of the 52 weeks or most of the 365 days during the specified reference year. Another is to set a specific number of weeks or days as the cut-off point and classify anyone with at least that many weeks or days of economic activity as belonging to the usually active population.[64] The activity status could be substantially different, as pointed out in the following paragraph, depending on whether it is based on weeks or days in the long reference period. In countries where employment is mostly of a regular and continuing nature and where a week of employment means by and large a week of full-time employment or, at any rate, employment for a major part of the working time, the usual activity status may well be based on weeks of employment or unemployment. However, in countries where employment is largely of an irregular nature and where a week of employment does not generally mean a week of full-time employment or even employment for a major part of the working time, usual activity would better be based on days of employment or unemployment.

2.178. The usually active population may be subdivided into employed and unemployed in accordance with the situation that prevailed most of the time, in other words, usually active

[63] See Commission of the European Communities, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations and World Bank, *System of National Accounts 1993* (United Nations publication, Sales No. E.94.XVII.4), paras. 6.24 and 6.25, for an example of such a list and a basic principle to follow when drawing it up.

[64] R. Hussmanns, F. Mehran and V. Verma, *Surveys of the Economically Active Population, Employment, Unemployment and Underemployment: An ILO Manual on Concepts and Methods* (Geneva, International Labour Office, 1990), p. 51.

persons should be classified as usually employed if the number of weeks (or days) of employment is larger than or equal to the number of weeks (or days) of unemployment, and as usually unemployed if the number of weeks (or days) of employment is smaller than the number of weeks (or days) of unemployment. It should be noted that if the subdivision into usually employed and usually unemployed is made among persons already determined to be usually active, the resulting classification by usual activity status may differ from a direct classification by usual activity status (that is to say, making of a direct distinction between usually employed, usually unemployed, and usually not economically active). It is therefore recommended that the questionnaire be constructed in such a way as to lead first to the making of a distinction between usually active and usually inactive persons, before the making of one between usually employed and usually unemployed persons.

2.179. The term main or principal activity should not be used in the formulation of questions, as it can be misleading, and will tend to exclude activities of many among youth, women and the elderly. The questions and instructions to enumerators should reflect international recommendations that give priority to the classification of persons as economically active, no matter how important other activities might be to the individual or his/her household.

b. Currently active population (in other words, the labour force)

2.180. Current activity status is the relationship of a person to economic activity, based on a brief reference period such as one week. The use of current activity is considered most appropriate for countries where the economic activity of people is not greatly influenced by seasonal or other factors causing variations over the year. A time-reference period of one week should be used, which may be either a specified recent fixed week, or the last complete calender week, or the last seven days prior to enumeration.

2.181. The *currently active population*, or the *labour force*, comprises all persons (above the stated minimum age, see para. 2.172) who are either employed or unemployed, as defined in paragraphs 2.182 and 2.194.

i. Employed population

2.182. The *employed* comprise all persons above a specified age who, during a short reference period of either one week or one day, were in one of the following categories:

(*a*) Paid employment:
- (*i*) *At work*: persons who during the reference period performed some work for wage or salary, in cash or in kind;
- (*ii*) *With a job but not at work*: persons who, having already worked in their present job, were temporarily not at work during the reference period and had a formal attachment to their job as evidenced by, for example, a continued receipt of wage/salary, an assurance of return to work following the end of the contingency, an agreement on the date of return following the short duration of absence from the job, and so on; or one day, were in one of the following categories:

(*b*) Self-employment:
- (*i*) *At work*: persons who during the reference period performed some work for profit or family gain, in cash or in kind;
- (*ii*) *With an enterprise but not at work*: persons with an enterprise, which may be a business enterprise, a farm or a service undertaking, who were temporarily not at work during the reference period for some specific reason.

2.183. The census documentation and tabulations should clearly describe the minimum time chosen for the purpose of considering persons to be at work. According to the present international recommendations, the notion of *some work* should be interpreted as work for at least one hour during the reference period. The one-hour criterion is an essential feature of the labour-force framework embedded in the international definitions of employment and unemployment, and a prerequisite of the consistency of employment statistics with national accounts data on production. Countries concerned about the usefulness of the one-hour criterion for other users of census results should also consider collection of information on the time worked variable, following the recommendations of paragraphs 2.209-2.211.

2.184. Special attention should be paid to homemakers, since some of their activities fall within the production boundary of the national accounts system and constitute employment (for example, production of agricultural products, and their subsequent storage; production of other primary products such as mining of salt, cutting of peat, supply of water; processing of agricultural products; and other kinds of processing such as weaving of cloth, dressmaking and tailoring) but may not be perceived as economic activity by those involved.

Treatment of specific groups

2.185. According to the standards adopted by the International Conference of Labour Statisticians in 1982, the following treatment of certain groups of individuals in paid employment or self-employment is recommended.

2.186. *Persons in paid employment temporarily not at work* because of illness or injury, holiday or vacation, strike or lockout, educational or training leave, maternity or parental leave, reduction in economic activity, temporary disorganization

or suspension of work due to such reasons as bad weather, mechanical or electrical breakdown, or shortage of raw materials or fuels, or characterized by other temporary absence with or without leave, should be considered to be in paid employment provided they have a formal job attachment. (A formal job attachment should be determined on the basis of one or more of the following criteria: a continued receipt of wage or salary; an assurance of return to work following the end of the contingency, an agreement as to the date of return; or the elapsed duration of absence from the job which, wherever relevant, may be that duration for which workers can receive compensation benefits without obligations to accept other jobs.)[65]

2.187. *Self-employed persons* should be considered employed, but not at work if during an absence of the type described above, the unit for which they work, or which they may be said to embody, can be said to continue to operate, for example, because orders for work in the future are received.

2.188. *Contributing family workers* should be considered to be at work on the same basis as other self-employed workers, that is to say, irrespective of the number of hours worked during the reference period. Countries that prefer for their national tabulations to set a minimum time criterion higher than one hour for the inclusion of contributing family workers among the employed should identify and separately classify those who worked less than the prescribed time, so as to be able to provide internationally comparable data.

2.189. Persons engaged in economic activities in the form of *own-account production of goods* or services for own final use within the same household should be considered to be in self-employment if such production constitutes an important contribution to the total consumption of the household (see para. 2.166).

2.190. *Apprentices and trainees* who received pay in cash or in kind should be considered in paid employment and classified as at work or not at work on the same basis as other persons in paid employment. Participation in *job training schemes* may be important in some countries and may generate particular forms of employment and intermediate situations on the borderlines of employment, unemployment and economic inactivity.[66]

2.191. *Students, homemakers* and others who were mainly engaged in non-economic activities during the reference period, but were at the same time in paid employment or self-employment as defined in paragraph 2.182 above should be considered employed on the same basis as other categories of employed persons. Such persons should be identified separately where possible, that is, as having been engaged in paid employment, or as having been self-employed for longer than the stated minimum number of hours during the reference period (see para. 2.183).

2.192. All members of the armed forces should be included among persons in paid employment. The "armed forces" should include both regular and the temporary members as specified in the most recent revision of the *International Standard Classification of Occupations* (ISCO).[67]

2.193. Information should be given in the census reports describing how the above-mentioned groups and other relevant groups (for example, retired persons) were treated. Consideration should also be given to the desirability of identifying some of the groups (for example, apprentices and trainees) separately in tabulations.

ii. Unemployed population

2.194. The *unemployed* comprise all persons above a specified age who during the reference period were:

(*a*) *Without work*, in other words, not in paid employment or self-employment, as defined in paragraph 2.182 above;

(*b*) *Currently available for work*, in other words, were available for paid employment or self-employment during the reference period;

c) *Seeking work*, in other words, took specific steps in a specified recent period to seek paid employment or self-employment. The specific steps may have included

[65] For further guidance, see "Recommendations of the Joint ILO/Czech Statistics Office Meeting on the statistical treatment of persons on extended types of leave in respect to the international definitions of employment and unemployment (Prague, 15-17 November 1995)", *Bulletin of Labour Statistics, 1996-1*, pp. XXV-XXVI.

[66] See *Fourteenth International Conference of Labour Statisticians, Geneva, 28 October-6 November 1977. Report of the Conference* (Geneva, International Labour Office, 1988), document ICLS/14/D.14.

[67] "Members of the armed forces are those personnel who are currently serving in the armed forces, including auxiliary services, whether on a voluntary or compulsory basis, and who are not free to accept civilian employment. Included are regular members of the army, navy, air force and other military services, as well as conscripts enrolled for military training or other service for a specified period, depending on national requirements. Excluded are persons in civilian employment of government establishments concerned with defence issues; police (other than military police); customs inspectors and members of border or other armed civilian services; persons who have been temporarily withdrawn from civilian life for a short period of military training or retraining, according to national requirements, and members of military reserves not currently on active service" (see *International Standard Classification of Occupations* (ISCO-88) Geneva, International Labour Office, 1990) p.265.

registration at a public or private employment exchange; application to employers; checking at worksites, farms, factory gates, markets or other places of assembly; placing or answering newspaper advertisements; seeking assistance of friends and relatives; looking for land, building, machinery or equipment to establish one's own enterprise; arranging for financial resources; applying for permits and licences, and so forth. It would be useful to distinguish first-time job-seekers from other job-seekers in the classification of the unemployed.

2.195. In general, to be classified as unemployed, a person must satisfy all three of the above criteria. However, in situations where the conventional means of seeking work are of limited relevance, where the labour market is largely unorganized or of limited scope, where labour absorption is, at the time, inadequate, or where the labour force is largely self-employed, the standard definition of unemployment may be applied by relaxing the criterion of seeking work. Such a relaxation is aimed primarily at those developing countries where the criterion does not capture the extent of unemployment in its totality. With this relaxation of the criterion of seeking work, which permits in extreme cases the criterion's complete suppression, the two basic criteria that remain applicable are "without work" and "currently available for work".

2.196. In the application of the criterion of current availability for work, especially in situations where the seeking-work criterion is relaxed, appropriate tests should be developed to suit national circumstances. These tests may be based on notions such as present desire for work, previous work experience, willingness to take up work for wage or salary on locally prevailing terms, and readiness to undertake self-employment activity, given the necessary resources and facilities. These criteria are expected to ensure objectivity in the expression of current availability.

Treatment of borderline groups

2.197. As seen in paragraph 2.182 above, in respect of *paid employment* or *self-employment*, some persons fall into borderline groups that require careful treatment to determine if their members are properly included in the category of unemployment. The following paragraphs discuss the treatment recommended in respect of such groups.

2.198. Persons without work and currently available for work who made arrangements to take up paid employment or undertake self-employment activity at a date subsequent to the reference period should be considered unemployed.

2.199. Persons temporarily absent from their jobs, with no formal job attachment, who were currently available for work and were seeking work should be regarded as unemployed in accordance with the standard definition of unemployment. Countries may, however, depending on national circumstances and policies, prefer to relax the seeking-work criterion in the case of persons *temporarily laid off*. In such cases, persons temporarily laid off who were not seeking work but were classified as unemployed should be identified within a separate subcategory.

2.200. *Students*, *homemakers* and others who were mainly engaged in non-economic activities during the reference period and who satisfy the criteria for unemployment laid down above should be regarded as unemployed on the same basis as unemployed persons in other categories and identified separately, where possible.

(ii) Population not economically active

2.201. The *population not economically active* comprises all persons, irrespective of age, including those below the age specified for measuring the economically active population, other than those classified as *economically active*, as defined in paragraphs 2.172-2.200.

a. Population not usually active

2.202. The population *not usually active* comprises all persons not classified either as employed or as unemployed (see paras. 2.182-1.200). It is recommended that the not usually active population be classified into the following four groups:

(*a*) *Students*: persons of either sex, not classified as *usually economically active*, who attended any regular educational institution, public or private, for systematic instruction at any level of education, (see para. 2.205 below);

(*b*) *Homemakers*: persons of either sex, not classified as *usually economically active*, who were engaged in household duties in their own home, for example, housewives and other relatives responsible for the care of the home and children (domestic employees, working for pay, however, are classified as *economically active* in line with paras. 2.181-2.182);

(*c*) *Pension or capital income recipients*: persons of either sex, not classified as *usually economically active*, who receive income from property or investments, interests, rents, royalties or pensions from former activities, and who cannot be classified as students or homemakers;

(*d*) *Others:* persons of either sex, not classified as *usually economically active*, who are receiving public aid or private support, and all other persons not falling into any of the above categories.

Separate subcategories may be introduced to identify (*a*) persons engaged in unpaid community and volunteer

services and (*b*) other persons engaged in activities that fall outside the boundary of economic activities.

2.203. Since some individuals may be classifiable in more than one category of the not economically active population (for example, a person may be a student and a homemaker at the same time), the enumeration instructions should indicate the order of preference for recording persons in one or another of the categories. Consideration might also be given to presenting the categories in the census questionnaire in the preferred order because persons tend to answer according to the first category that applies to them.

2.204. It is recommended that the census questionnaire be designed in such a way as to allow for each person enumerated an indication of whether or not the person is engaged in economic activity, full-time studies or household duties in his or her own home (*homemaking*) as his or her main activity, and for each activity an indication of the total length of time in days, weeks or months.

b. Population not currently active(in other words, population not in the labour force)

2.205. The population *not currently active* or, equivalently, persons not in the *labour force*, comprises all persons who were neither *employed* nor *unemployed* during the short reference period used to measure current activity. They may, according to reason for not being *currently active*, be classified in any of the following groups:

(*a*) Attending an educational institution;
(*b*) Performing household duties;
(*c*) Retiring on pension or capital income;
(*d*) Other reasons, including disability or impairment.

2.206. The term "attending an educational institution" refers to attendance at any regular educational institution, public or private, for systematic instruction at any level of education, or temporary absence for relevant reasons corresponding to those specified for persons temporarily not at work (see para. 2.199 above).[68] The term "performing household duties" refers to engagement in household duties in one's own home. Domestic servants working for pay in somebody else's home are to be classified as *economically active*. Information should be given in the census report on the minimum age for data on economic characteristics, the minimum school-leaving age and the typical age for the start of old-age retirement payments.

2.207. It is recommended that the population not in the labour force be classified at least according to the above-mentioned reasons for current inactivity. The classification will thus include the following categories: (*a*) persons in attendance at educational institutions, (*b*) persons engaged in household duties, (*c*) persons in retirement, old age and so forth and (*d*) persons inactive for other reasons, including disability. Some not currently economically active persons may be classifiable to more than one of the above categories. In such situations, priority should be given to the possible categories in the order above. Additional reasons for inactivity that are considered particularly important and included in the regional recommendations should also be taken into account in the classification of population not in the labour force.

2.208. Countries adopting the standard definition of unemployment may identify persons not classified as unemployed who were available for work but not seeking work during the reference period and classify them separately under the population not currently active.

(b) Time worked

2.209. The number of employed persons provides only a very approximate estimate of the volume of work performed. Inclusion in the census of an item on *time worked* helps to ensure a more accurate measurement of the concept by capturing the full contribution of persons who were in and out of the workforce or who worked only for a brief time during the year (for example, women). This item is also particularly useful in regard to the application of the standards concerning the economically active population. Countries concerned with the usefulness for some users of the one-hour criterion in the definition of employment when using current activity can, if time worked has been measured, apply alternative lower limits for the definition of employment when preparing census results for such users. When employing the usual activity approach, information on time worked may be used to screen persons who did not have an at least minimum threshold (for example, one week or one day) of economic activity during the long reference period. If the reference period is the 12 months preceding the census, time worked may be measured in units of months, weeks or, more fully, in days, where feasible.

2.210. *Time worked* is the total time actually spent producing goods and services, within regular working hours and as overtime, during the reference period adopted for *economic activity* in the census. It is recommended that if the reference period is short, for example, the week preceding the census, time worked should be measured in hours. If the reference period is long, for example, the 12 months preceding the census, time worked should be measured in units of weeks, or in days where feasible. Time worked should also include time spent in activities that, while not leading directly to produced goods or services, are still defined as part of the tasks and duties of the job, such as preparing, repairing or maintaining the

[68] See also paragraphs 2.150-2.152 on school attendance.

workplace or work instruments. In practice, it will also include inactive time spent in the course of performing these activities, such as time spent waiting or standing by, and in other short breaks. Longer meal breaks and time spent not working because of vacation, holidays, sickness or conflicts (for example, strikes and lockouts) should be excluded.

2.211. It is recommended that, for persons who have had more than one job during the reference period, the questionnaire should ensure the recording both of *total time worked* and *time worked* in each of the jobs for which *occupation* and so forth is being registered. To minimize response errors, the set of questions used to measure time worked need to ensure that responses exclude all absences, whether paid or unpaid, and that all overtime, whether paid or unpaid, is included. Recall errors can be reduced by using short reference periods or broad time units. If the reference period is the day or week preceding the census, time worked may be measured by requesting separate information for each day of the week entailing a careful and in-depth training of interviewers. If information is also collected on more than one job (see paras 2.212-2.213), it is useful to distinguish between the total amount of time worked during the reference period at the primary job and the total amount of time worked at the secondary ones. If the reference period is long (for example, the 12 months preceding the census), time worked may be measured in terms of time intervals rather than of the actual amount of time worked. To use separate questions to highlight those activities that tend to be erroneously included in or excluded from time worked, and to ask the respondents to account for the nature, duration and location of all (economic and non-economic) activities (in other words, to use time diaries) both tend to give better-quality results. However, such in-depth questions are normally too costly to be envisaged in a census operation.

(c) Occupation

(i) Selection of "job"/activity to be classified

2.212. Individuals can be classified according to the variables *occupation*, *industry*, *status in employment* and *sector* only through their relationship with a job. This means that they must have been identified as being either employed or unemployed through the questions on economic activity (see paras. 2.172-2.200 above). Whether economically active according to the *current activity (labour force)* concept or the usual activity concept, a person may have had more than one job during the reference period. For employed persons it is therefore recommended that the *primary* job held during the reference period first be established and then a possible second most important job. The primary job should be the job at which the person worked most of the time during the reference period,[69] and the second job should be one, among the other jobs held during the same period, at which the person worked during most of the time not devoted to the primary job. For persons who have more than one job, it is recommended when using current activity to define employment, that a job from which the person was temporarily absent during the reference period not be considered the primary job, even if , had the person been active in it during the period in question, that job would have been the primary job. The purpose of this recommendation is to simplify the census questionnaire. An unemployed person should be coded to occupation, industry, status in employment and sector on the basis of the last job.

2.213. It is important to design the census questionnaire in such a way as to ensure that the variables *occupation*, *industry*, *status in employment* and sector are measured for a given job. Countries may want to describe in greater detail the type of secondary work carried out by respondents in more than one job during the reference period, in particular if those countries wish to be able to describe the extent and structure of employment in the informal sector (see para. 2.242). In this case, the questionnaire should allow for the identification of a second, and perhaps even a third job for which information about occupation, industry, status in employment, sector and time worked can be collected and coded.

(ii) Item on occupation

2.214. Occupation refers to the type of work done during the time-reference period by the person employed (or the type of work done previously, if the person is unemployed), irrespective of the industry or the status in employment in which the person should be classified.

2.215. For purposes of international comparisons, it is recommended that countries prepare tabulations involving occupations in accordance with the latest revision available of the *International Standard Classification of Occupations (ISCO)*. At the time the present set of census recommendations was approved, the latest revision available was the one that was developed by the Fourteenth International Conference of Labour Statisticians (ICLS) in 1987 and adopted by the Governing Body of the International Labour Organization (ILO) in 1988.[70] In order to be able to prepare such tabulations, information on

[69] In principle, one can also select as the "main" job the job that generated, or that is expected to generate, the highest income in cash or in kind. However, this is likely to be more difficult to implement (explain) in a census questionnaire.

[70] *International Standard Classification of Occupations* (ISCO-88) (Geneva, International Labour Office, 1990).

occupation needs to be appropriately recorded and coded in the census.[71]

2.216. Countries should code the collected occupational response at the lowest possible level supported by the information given. In order to facilitate detailed and accurate coding, it would be useful for the questionnaire to ask each active person What kind of work does/did .... do in this job? What are/were the main tasks and duties? For most persons this will produce responses that consist of an occupational title, or something similar, and a few words on tasks and duties performed on the job.

2.217. Methods for establishing linkages (mapping) between a national classification and ISCO is described in paragraph 2.220 below. An explanation of the differences between the national classification and ISC0-88 should be given in the census publications in order to facilitate analysis of occupational statistics and international comparison.

2.218. In preparation for the coding of the occupation responses, the organization responsible for the census should prepare a *coding index* reflecting the type of responses that will be given by the respondents. The coding index should be constructed by occupational classification experts on the basis of responses to similar questions in other data collections, such as previous censuses, census tests and labour-force surveys, as well as input from job placement officers of the employment service and the content of newspaper advertisements of vacant jobs. The coding index should clearly distinguish between responses belonging to "not elsewhere classified" categories and responses that do not provide enough information to determine an occupational group.

2.219. To ensure consistent, high-quality coding with a minimum of coding errors, each member of the coding staff should have easy access to the coding index and be given clear instructions to the effect that:

(*a*) The index should always be used to determine the correct code for a response;

(*b*) When searching for the correct index entry, the information given in the response should be used according to specified rules;

(*c*) The coding rules should give clear guidance on when and how use can be made of supplementary information, for example, the response to the "industry" question so as to determine an occupation code when the occupation responses are not sufficient for that purpose, as well as about when problems ("queries") should be referred to supervisors or expert coders for resolution.

The results of the resolution of such queries should be quickly distributed to all coders, so that the coding index may be updated, thus ensuring consistent treatment of similar responses.

2.220. Countries coding *occupation* according to a national standard classification can establish a correspondence with ISCO either through double coding or through *mapping* from the detailed groups of the national classification to ISCO. Double coding can be achieved most easily when the coding index carries references both to the national classification and to ISCO, in which case coding should take the form of entering the line number of the selected index entry on the record for each response. Mapping means that, for each detailed group in the national classification, it is indicated to which ISCO group the (majority of) jobs in that national occupational group would be coded if coded directly to ISCO.

(d) Industry

2.221. Industry refers to the activity of the establishment in which an employed person worked during the time-reference period established for data on economic characteristics (or last worked, if unemployed). For guidance on the selection of the job/activity to be classified, see paragraph 2.212.

2.222. For purposes of international comparisons, it is recommended that countries prepare tabulations involving the industrial characteristics of active persons according to the most recent revision of the International Standard Industrial Classification of All Economic Activities (ISIC)[72] available at the time of the census. In order to be able to prepare such tabulations, information on industry needs to be appropriately recorded and coded in the census.

2.223. Countries should code the collected industry response at the lowest possible level supported by the information given. In order to facilitate detailed and accurate coding, the questionnaire should ask each active person What is the name of your employer and what is the address of your place of work? and What are the main products and services produced at the place of work or what are the main functions? Countries with business registers that are complete and up-to-date can use the response to the first question as a link to the register in order to obtain the industry code given there to the establishment. In preparation for the coding of the industry responses that cannot

[71] In the 1980 round of population and housing censuses, countries compiled the occupational statistics in accordance with *the International Standard Classification of Occupations* (1968). See International Labour Office, *International Standard Classification of Occupations, Revised Edition 1968* (Geneva, 1969).

[72] *International Standard Industrial Classification of All Economic Activities*, Statistical Papers, No. 4, Rev.3 (United Nations publication, Sales No. E.90.XVII.11).

be matched to a precoded register the organization responsible for the census should create a *coding index* that reflects the type of responses that will be given on the census questionnaire. This coding index should be constructed by industry classification experts on the basis of available lists of enterprises, establishments, businesses, and so forth, as well as from responses to similar questions in other data collections, including previous censuses, census tests and labour-force surveys. The coding index should clearly distinguish between responses belonging to "not elsewhere classified" categories and responses that do not provide enough information to allow for the coding of a detailed industry group.

2.224. To ensure consistent, high-quality coding with a minimum of coding errors, each member of the coding staff for the census should have easy access to the coding index and should be given clear instructions that:

(*a*) The index should always be used to determine the correct code for a responses;

(*b*) When searching for the correct index entry, the information given in the response should be used according to specified rules. Where applicable, one should normally try to find an exact match for the employer's name and address in the compiled list of businesses and so forth before using the information on products, function and activities;

(*c*) The coding rules should give clear guidance on when and how use can be made of supplementary information, for example, the response to the Occupation question, to determine a industry code when the industry responses are not sufficient, as well as about when problems ("queries") should be referred to supervisors or expert coders for resolution.

The results of the resolution of such queries should be quickly distributed to all coders, so that the coding index may be updated, thus ensuring consistent treatment of similar responses.

2.225. Countries coding *industry* according to a national standard classification can establish correspondence with ISIC either through double coding or through *mapping* from the detailed groups of the national classification to ISIC. Double coding can be achieved most easily when the coding index carries references both to the national classification and to ISIC, in which case the coding should take the form of entering the line number of the selected index entry on the record for each response. "Mapping" means that, for each detailed group in the national classification, it is indicated to which ISIC group the (majority of) jobs in that national occupational group would be coded if coded directly to ISIC.

(e) Status in employment

2.226. Status in employment refers to the status of an economically active person with respect to his or her employment, that is to say, the type of explicit or implicit contract of employment with other persons or organizations that the person has in his/her job. The basic criteria used to define the groups of the classification are the type of economic risk, an element of which is the strength of the attachment between the person and the job, and the type of authority over establishments and other workers that the person has or will have in the job. Care should be taken to ensure that an *economically active* person is classified by *status in employment* on the basis of the same job(s) as used for classifying the person by *"occupation"*, *"industry"* and "*sector"* (see para. 2.213).

2.227. It is recommended that the economically active population be classified by status in employment as follows:[73]

(*a*) *Employees*, among whom it may be possible to distinguish between *employees with stable contracts* (including *regular employees*) and other employees;
(*b*) *Employers;*
(*c*) *Own-account workers*;
(*d*) *Contributing family workers;*
(*e*) *Members of producers' co-operatives;*
(*f*) *Persons not classifiable by status*.

It is also recommended that owner-managers of incorporated enterprises, who normally will be classified among employees, but which for certain descriptive and analytical purposes one may prefer to group together with employers be identified separately.

2.228. An *employee* is a person who works in a *paid employment* job, that is to say, a job where the explicit or implicit contract of employment gives the incumbent a basic remuneration that is independent of the revenue of the unit for which he or she works (this unit can be a corporation, a non-profit institution, a government unit or a household). Persons in *paid employment* jobs are typically remunerated by wages and salaries, but may be paid by commission from sales, or through piece-rates, bonuses or in-kind payment such as food, housing or training. Some or all of the tools, capital equipment, information systems and/or premises used by the incumbent may be owned by others, and the incumbent may work under the direct supervision of, or according to strict guidelines set by, the owner(s) or persons in the owner's employment. *Employees with stable contracts* are those employees who have had, and who continue to have a contract, or a succession of

[73] For further details see resolution concerning the International Classification of Status in Employment (ICSE) in ILO, *Fifteenth International Conference of Labour Statisticians*, ICLS/15/D.6 (Rev.1), *Report of the Conference 19-28 January 1993.* Geneva, International Labour Office, 1993.

contracts, with the same employer on a continuous basis. *Regular employees* are those employees with stable contracts for whom the employing organization is responsible for payment of relevant taxes and social security contributions and/or where the contractual relationship is subject to national labour legislation. *Owner-managers of incorporated enterprises* are workers who hold a job in an incorporated enterprise in which they (*a*) alone, or together with other members of their families or one or a few partners, hold controlling ownership of the enterprise; and (*b*) have the authority to act on its behalf as regards contracts with other organizations and the hiring and dismissal of employees, subject only to national legislation regulating such matters and the rules established by the board of the enterprise.

2.229. An *employer* is a person who, working on his or her own economic account or with one or a few partners, holds a *self-employment* job and, in this capacity, has engaged on a continuous basis (including the reference period) one or more persons to work for him/her as employees. A *self-employment* job is a job where the remuneration is directly dependent upon the profits (or the potential for profits) derived from the goods and services produced (where own consumption is considered to be part of the profits). The incumbent makes the operational decisions affecting the enterprise, or delegates such decisions while retaining responsibility for the welfare of the enterprise. In this context an *enterprise* includes one-person operations. Some countries may wish to distinguish among employers according to the number of persons they employ.

2.230. An *own-account worker* is a person who, working on his own account or with one or a few partners, holds a *self-employment job*, and has not engaged on a continuous basis any employees. (Note, however, that during the reference period an own-account may have engaged one or more employees on a short-term and non-continuous basis without being thereby classifiable as an employer.)

2.231. A *contributing family worker* is a person who holds a self-employment job in a market-oriented establishment operated by a related person living in the same household, and who cannot be regarded as a partner because the degree of his or her commitment to the operation of the establishment, in terms of working time or other factors to be determined by national circumstances, is not at a level comparable with that of the head of the establishment. Where it is customary for young persons, in particular, to work without pay in an economic enterprise operated by a related person who does not live in the same household, the requirement that the person live in the same household may be relaxed. Members of families belonging to a producers' cooperative whose only activity is the cultivation of privately owned ancillary plots or the care of privately owned livestock should be included in this category.

2.232. A *member of a producers' cooperative* is a person who holds a self-employment job in an establishment organized as a cooperative, in which each member takes part on an equal footing with other members in determining the organization of production, sales and/or other work, investments and the distribution of proceeds among the members. (Note that employees of producers' cooperatives are not to be classified to this group.)

2.233. *Persons not classifiable by status* include those economically active persons for whom insufficient information is available, and/or who cannot be included in any of the preceding categories.

2.234. Countries that include members of the armed forces in the economically active population should show them, as is currently being done, in the category of employees. However, because of the wide range of national practices in the treatment of the armed forces, it is recommended that census tabulations and related notes provide an explicit indication of the *status-in-employment* category in which they are included.

2.235. In most census questionnaires, the information concerning status in employment will be captured through precoded alternatives where only a few words can be used to convey the intended meaning of each category. This may mean that classification of some of the situations on the borderline between two or more categories will be carried out according to the subjective understanding of the respondent rather than according to the intended distinctions. This should be kept in mind when presenting the resulting statistics.

(f) Income

2.236. In light of the conceptual underpinning for the new international standards concerning the economically active population (see para. 2.166 above), income may be defined in terms of (*a*) monthly income in cash and/or in kind from the work performed by each active person or (*b*) the total annual income in cash and/or in kind of households regardless of source. Collection of reliable data on income, especially income from self-employment and property income, is extremely difficult in general field inquiries, particularly population censuses. The inclusion of non-cash income further compounds the difficulties. Collection of income data in a population census, even when confined to cash income, presents special problems in terms of burden of work, response errors, and so forth. Therefore, this topic, including the broader definition of income, is generally considered more suitable for use in a sample survey. Depending on the national r-

equirements, countries may nonetheless wish to obtain limited information on cash income. As thus defined, the information collected can provide some input into statistics on the distribution of income, consumption and accumulation of households,[74] in addition to serving the immediate purposes of the census.

2.237. The income from employment of economically active persons should include wages and salaries of employees, income of members from producers' cooperatives and the entrepreneurial income of employers and own-account workers operating business and unincorporated enterprises.

2.238. In addition to the income from employment of its economically active members, the total income of the household should include, for example, the interest, dividends, rent, social security benefits, pensions and life insurance annuity benefits of all its members. The concepts involved in determining income are not simple to grasp and respondents may be unable or unwilling to provide exact information. For example, income should include social security, pension fund contributions and direct taxes withheld from employees' salaries, but some persons will undoubtedly not include these amounts in reporting their salaries. Significant items of total household income may also be excluded or misstated. Despite instructions given to enumerators, the data collected can therefore be expected to be approximate. Accordingly, in the presentation of results it is usually appropriate to use broad income or earnings size-classes. As an aid to the interpretation of the results, tabulations of the data should be accompanied by a description of the items of income assumed to be included and, if possible, an estimate of the accuracy of the figures.

(g) Institutional sector of employment

2.239. The *Institutional sector of employment* relates to the legal organization and principal functions, behaviour and objectives of the enterprise with which a job is associated. Following the definitions provided in the System of National Accounts (SNA) it is recommended, if the census is to provide information on this topic, that the following institutional sectors be distinguished:

(a) *Corporation*, comprising non-financial and financial corporations (in other words incorporated enterprises, private and public companies, joint-stock companies, limited liability companies, registered cooperatives, limited liability partnerships, and so forth) and quasi-corporations, as well as non-profit institutions, such as hospitals, schools and colleges, that charge fees to cover their current production costs;

(*b*) General government, comprising central, state and local government units together with social security funds imposed or controlled by those units, and non-profit institutions engaged in non-market production controlled and financed by government, or by social security funds;

(*c*) *Non-profit institutions serving households* comprising units engaged in the production of non-market goods and services for households and whose main resources are from voluntary contributions;

(*d*) *Households* (including unincorporated enterprises owned by households) comprising unincorporated enterprises directly owned and controlled by members of private and institutional households (made up of persons staying in hospitals, retirement homes, convents, prisons and so forth, for long periods of time), either individually or in partnership with others. Partners may be members of the same household or from different households.

2.240. Depending on the structure of the national economy, some countries may wish to subdivide the *corporation sector* into financial and non-financial corporations. Also, countries where *informal sector* activities are considered to play an important role in employment creation and income-generation may wish to subclassify the *household sector* into (*a*) those whose productive activities are in the formal sector, (*b*) those whose productive activities are in the informal sector and (*c*) those part neither of the formal nor of the informal sector.

2.241. According to the ILO recommendation adopted by the International Labour Conference in 1993, concerning statistics of employment in the informal sector,[75] the informal sector is to be defined in terms of characteristics of the production units (enterprises) in which the activities take place. It is to be considered a subsector of that institutional sector of employment called the household sector, that is to say, informal sector enterprises are defined as a subset of unincorporated enterprises owned by households. This subset comprises (*a*) informal own-account enterprises and (*b*) enterprises of informal employers. The distinction between the two categories is based on whether or not there is employment by enterprises of employees on a continuous basis (as contrasted with the employment of employees on an occasional basis and of contributing family workers). Depending on national circumstances, either all own-

[74] See *Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households*, Statistical Paper, No. 61 (United Nations publication, Sales No. E.77.XVII.II and corrigendum), currently under revision. See also United Nations Department of Technical Cooperation for Development and Statistical Office, *National Household Survey Capability Programme: Household Income and Expenditure Surveys: A Technical Study* (New York, 1989), DP/UN/INT-88-X01/6E.

[75] ILO, *Fifteenth International Conference of Labour Statisticians. Report of the Conference, Geneva, 19-28 January 1993* (Geneva, International Labour Office, 1993), appendix I, resolution II.

account enterprises should be considered informal, or only those that are not registered under relevant forms of national legislation. Enterprises of informal employers are defined in terms of one or more of the following criteria: (*a*) small size of the establishment(s) in terms of employment, to be specified according to national circumstances, (*b*) non-registration of the enterprise under relevant forms of national legislation and (*c*) non-registration of its employees, defined in accordance with the definition of regular employees in paragraph 2.228 above.

2.242. A separate question will generally be required in a census questionnaire to determine in which of the two sub-sectors an economically active individual may fall. The following points may be noted:

(*a*) The population employed in the *informal sector* comprises all persons who, during a given reference period, were employed (in the sense of para. 2.182 above) in at least one informal sector unit as defined in the resolution concerning statistics of employment in the informal sector adopted by the Fifteenth International Conference of Labour Statisticians,[76] irrespective of their status in employment;

(*b*) The definition of informal sector units is complex and includes criteria such as the legal organization of the units as unincorporated enterprises, the lack of a complete set of accounts for them, the composition of their workforce, and so forth;

(*c*) The scope of the informal sector is restricted to household unincorporated market enterprises, and therefore households producing exclusively for their own final use are to be excluded. An exception can be made, however, in respect of households employing paid domestic workers who may be included in the informal sector depending upon national circumstances and the intended uses of the statistics. Countries may also wish, for practical reasons, to consider keeping agricultural activities produced for the market outside the scope of the informal sector;

(*d*) Given the complexity of the definition described above, it may be difficult to precisely apply some of its criteria in a population census. It should be possible for many countries to derive from the census reasonably good estimates of the population employed in the informal sector by using information collected on the following topics: activity status, institutional sector of employment, occupation and industry (and number of employees employed on a continuous basis or, alternatively, total number of employees or total number of persons including the enterprise owner(s) and contributing family workers employed in the enterprise during the reference period (this topic is not covered in these recommendations));

(*e*) It should be noted that, although countries may wish to use the population census in order to try to collect information that will make it possible to estimate the number and characteristics of the jobs in such activities and of the persons employed in them, the census may yield unreliable estimates for several reasons. Informal sector activities are characteristically difficult to enumerate and such enumeration could only be carried out through the presentation of a series of carefully formulated questions, for which special surveys are better suited. Furthermore, some of the information needed to determine whether or not an individual is in the informal sector may be reliably provided only by the owner of the informal unit rather than by its other workers. Another issue to be considered is that, although classification by institutional sector in the population census is to be applied to the primary job, in many countries where the informal sector is an important component of the labour market, a significant number of these activities are undertaken as secondary activities of persons with a primary job outside the informal sector. One prerequisite of obtaining a reasonably accurate estimate of informal sector employment from a population census is the collection by the census of data on the characteristics of the secondary jobs of persons as well as on the characteristics of their primary job.

2.243. In order to increase the number of *informal sector* and *household sector* activities actually captured by the census, it will usually be necessary to make special effort to capture activities that might otherwise go unreported, such as unpaid work in small family enterprises, activities undertaken by women on their own account at or from home, undeclared self-employment activities of persons registered as unemployed, pensioners or other persons, and informal sector businesses conducted as secondary jobs by government officials, employees of state-owned enterprises, craftsmen, and so forth.

2.244. In most census questionnaires, the information concerning *institutional sector of employment* will be captured through precoded alternatives where only a few words can be used to convey the intended meaning of each category. This may mean that classification of some units on the borderline between two or more categories will be carried out according to the subjective understanding of the respondent rather than according to the intended distinctions. This should be kept in mind when presenting the resulting statistics.

[76] The "Resolution concerning statistics of employment in the informal sector", adopted by the Fifteenth International Conference of Labour Statisticians, *Bulletin of Labour Statistics 1993-2*, provides a precise definition of "informal sector" which has been tested in surveys in many countries. That resolution covers a variety of issues relating to the definition of the informal sector and the design, content and conduct of informal sector surveys. The relevance of the resolution goes beyond employment statistics, and its definitional parts were included in the 1993 SNA.

(h) Place of work

2.245. *Place of work* is the location in which a currently employed person performed his or her job, and where a usually employed person performed the primary job used to determine his/her other economic characteristics such as occupation, industry, and status in employment (see paras. 2.214-2.235). While the information on place of work can be used to develop area profiles in terms of the employed labour force (as opposed to demographic profiles by place of residence), the primary objective is to link place-of-work information to place of residence.

2.246. The following response categories, or a variation thereof necessitated by national circumstances, are recommended:

(*a*) *Work at home*: in addition to those whose economic activities are conducted from units or offices within the home, this category includes farmers who work and live on their farms, persons working and living at work camps, and those engaged in own-account production of goods (see para. 2.166);

(*b*) *No fixed place of work:* this category should be restricted to persons whose work involves travel in different areas and who do not report daily in person to a fixed address, for example, itinerant traders or hawkers, travelling salesmen and long-distance lorry drivers;

(*c*) *With a fixed place of work outside the home*: this category will include the remaining employed population. To this group should also be classified persons who do not have a fixed place of work but who report to a fixed address at the beginning of their work period (for example, bus drivers, airline pilots and stewards), including individuals who travel to work, on a regular basis, across the border to a neighbouring country. Persons working at changing sites, for example, in construction, should give the location of their current worksite rather than the address of their employer's place of business, if appearance at this site will be required for at least one week.

2.247. It is likely that for some activities or jobs, performance is at more than one location (for example, at home some of the time/season and in a fixed location outside the home at other times) or category cannot be clearly distinguished. One approach, in the case of the former, would be to select the place where the individual spends/spent a major part of his or her working time. Where the distinction between categories is blurred, as is the case for work done, for example, on a rented plot of land adjacent to one's home, it would be useful to identify borderline cases, according to national circumstances. Specific instructions should be given to the enumerators on how to select between two or three possible responses or to classify borderline cases.

7. International migration characteristics

2.248. International migration, as a census topic, was first dealt with separately in the United Nations census recommendations contained in the *Supplementary Principles and Recommendations for Population and Housing Censuses*.[77] Previously, it had been subsumed under the topic "geographical and migration characteristics", where migration is principally concerned with the movement of people within the country, in other words, with internal migration. Interest in the movement of people across national boundaries, namely, international migration, has steadily grown among countries and therefore, a new version of the *Recommendations on Statistics of International Migration*[78] was adopted by the Statistical Commission in 1997.[79] This new version is entitled *Recommendations on Statistics of International Migration, Revision 1* (ST/ESA/STAT/SER. M/58/Rev.1). The present section, concerned with the application of those recommendations in population censuses, is intended to supplement and expand the topic "geographical and internal migration characteristics," which is covered in paragraphs 2.18-2.59 above. Definitions of international migration and specific ways of applying them in population censuses are presented in this section.

2.249. The United Nations *Recommendations on Statistics of International Migration, Revision 1* deal on the one hand with migrant flows and on the other with immigrant stock. Population censuses are underscored as being the best source for collecting data on the immigrant stock and its characteristics and therefore this section is concerned chiefly with the topic of immigrant stock. Two items will be used to identify the immigrant stock: country of birth and country of citizenship.

2.250. Given the general definition of "international migrant" presented in the revised *Recommendations on Statistics of International Migration* (para.32), the logical definition of the stock of international migrants present in a country would refer to the set of persons who have ever changed their country of usual residence. However, data useful for studying the issues related to international migrants are citizenship-specific. It is therefore common to find that the need for information relates not to the generality of international migrants as characterized above, but rather to those who do not have the citizenship of the country where they live and possibly to those who, despite

[77] Statistical Papers, No. 67/Add.1, (United Nations publication, Sales No. E.90.XVII.9).

[78] Statistical Papers, No. 58 (United Nations publication, Sales No. E.79.XVII.18).

[79] See *Official Records of the Economic and Social Council, 1997, Supplement No. 4* (E/1997/24), para. 61.

having acquired citizenship in that country, were not part of its citizenry from the beginning of their lives.

2.251. Consequently, for the study of the impact of international migration using the population census, two sub-groups of the population are the focus of interest. The first group consists of foreigners living in the country and the second comprises persons born in a country other than the one in which they live at the time of the census (the foreign-born). Consequently, two items must be recorded in the census: (*a*) country of birth, and (*b*) country of citizenship. In addition, it is also important to record year of arrival so as to establish length of stay in the country of international migrants.

(a) Country of birth

2.252. The country of birth is, in the first instance, the country in which the person was born. It should be noted that the country of birth of a person is not necessarily the same as his or her country of citizenship, which is a separate census topic dealt with in paragraphs 2.104-2.108 above. The collection of information distinguishing between persons born in the country where the census is taken (natives) and those born elsewhere (foreign-born) is necessary even in countries where the proportion of the foreign-born population is small. It is therefore recommended that place of birth be asked of all persons first to distinguish the native-born from the foreign-born population. The collection of additional information on the specific country of birth is recommended so as to permit the classification of the foreign-born population by country of birth. For respondents who are born outside of the country of enumeration and cannot name their country of birth, at least the continent or region where that country is located should be ascertained.

2.253. For purposes of both internal consistency and international comparability, it is preferable that information on the country of birth be available according to national boundaries existing at the time of the census. In addition to collecting detailed information on the actual country of birth, it is essential that the coding of information on the country of birth be done in sufficient detail to allow for the individual identification of all countries of birth that are represented in the population of the country. For purposes of coding, it is recommended that countries use the numerical coding system presented in *Standard Country or Area Codes for Statistical Use*. The use of standard codes for classification of the foreign-born population according to the country of birth will enhance the usefulness of such data, including an international exchange of foreign-born population statistics among countries. If countries decide to combine countries into broad groups, it is recommended that the standard regional and subregional classifications identified in the above-mentioned publication be adopted.

(b) Citizenship

2.254. Citizenship is the legal nationality of each person. A citizen is a legal national of the country of the census; a foreigner or alien is a non-national of the country. Because the country of citizenship is not necessarily identical to the country of birth, both items should be collected in a census. Data on citizenship are needed because of their policy relevance. For further information on citizenship, see paragraphs 2.104-2.108.

(c) Year or period of arrival

2.255. Recording the calendar year and month of arrival of a foreign-born person to the country of enumeration permits the calculation of the number of completed years between the time of arrival in the country and the time of inquiry, usually the census date. Information on the month and year of arrival also provides the flexibility of classifying foreign-born persons by period of arrival in terms of any pre-specified period, such as 1975-1979, 1980-1984 and so forth. It is thus recommended that the period of arrival be shown in any tabulations in which the variable appears, in terms of the actual year of arrival.

2.256. Note that information on the year and month of arrival is requested only of persons born outside of the country of enumeration, that is to say, persons who must have arrived in that country at some time after their birth. Persons born in the country of enumeration would not be asked the question at all.

2.257. Information on time since arrival can also be collected by asking how many years have elapsed since the time of arrival, instead of in what calendar year the person arrived. However, use of such a question is not recommended because it is likely to yield less accurate information.

8. Disability characteristics

2.258. The census can provide valuable information on disability. In many countries, it is the only available source of information on the frequency and distribution of disability in the population, at national, regional and local levels. Census results can provide baseline data and may be useful for investigating small-area variations in the prevalence of disability. These data can be utilized for the monitoring and evaluation of national programmes and services concerning the equalization of opportunity,[80] rehabilitation and the prevention of disabilities.

2.259. In 1980, the World Health Organization (WHO) issued the *International Classification of Impairments, Disabilities,*

[80] See the Standard Rules on the Equalization of opportunities for Persons with Disabilities, as contained in the annex to United Nations General Assembly resolution 48/96, adopted on 20 December 1993.

and Handicaps (ICIDH)[81] which promotes a common framework and definitions of disability-related issues. Though the ICIDH is a "young" classification and is undergoing a revision, it replaces the body of unstandardized and often pejorative terms used to refer to people with disability with a more precise, objective and internationally recognized terminology.

2.260. The ICIDH distinguishes three dimensions that can be studied to monitor the situation of people with disability: impairment, disability and handicap. Impairment concerns any loss or deviation of physiological, neurological or anatomical structure or function of an organ or body part (organ and body dimension). Disability reflects any limitation or lack of ability that a person experiences in performing an activity in the manner or within the range considered normal for a person, in other words, a limitation in learning, speaking, walking or some other activity (individual dimension). Handicap concerns constraints on the relationship between the person with a disability and the social and physical environment, for example, in the areas of education, occupation, information or communication (social dimension).

2.261. Owing to the limited space available in a census, the focus should be on only one of the three ICIDH dimensions with the other dimensions left to a household survey. The use of a disability-oriented question is recommended for the following reasons:[82]

(*a*) In an impairment approach, interest is focused at the organ or body level and often requires knowledge of specific medical details. Since respondents may be aware only of their severe impairments, this approach tends to underestimate the population with disabilities;

(*b*) Disability questions cast a wider net. Persons recognize mild and moderate limitations in their activities as well as those that are more severe. In addition, the disability approach focuses on a person's experiences in participating in daily life activities. This approach is more relevant for determining policy and programmes concerning the rehabilitation needs of, and the equalization of opportunities for, persons with disabilities;

(*c*) Handicap examines the relationship between a person with a disability and the social and physical environment within which she or he lives. Measurement of some aspects of handicap can be derived by using the responses to the disability question to compare persons who report a disability with those who do not, with respect to other social and economic characteristics such as educational attainment, school attendance, marital status and employment.

Additional information on concepts, classifications and methods for the development of statistics on people with disability is contained in the Manual for the Development of Statistical Information for Disability Programmes and Policies.[83] In addition, a publication on guidelines and principles for development of impairment, disability and handicap statistics is in preparation.

(a) Disability

2.262. In order to measure the disability dimension, a person with disability should be defined as a person who is limited in the kind or amount of activities that he or she can do because of ongoing difficulties due to a long-term physical condition, mental condition or health problem. Short-term disabilities due to temporary conditions such as broken legs and illness are excluded. Only disabilities lasting for more than six months should be included.

2.263. The approach taken in the design of the census question on disability recognizes that while many countries include a question on disability in their census, few countries have surveys on disability. The census is generally the only source of data for estimating prevalence of disability in a country and the prevalence of various types of disability. As today very few countries have a disability survey, these recommendations do not cover the use of the census for a broad screening question for use in establishing a sampling frame for a more detailed survey. If a country plans to carry out a specialized disability survey, the census may be used to establish a more efficient sampling frame for the survey. In this case, a generic question may be introduced in the census questionnaire and the yes/no responses could be used to categorize the strata of the sample.

2.264. The question used to identify persons with disability should list broad categories of disabilities so that each person can check the presence or absence of each type of disability. It is recommended that the following list of broad categories of disabilities based on the ICIDH[84] be used: Seeing difficulties (even with glasses, if worn); hearing difficulties (even with hearing aid, if used); speaking difficulties (talking); moving/mobility difficulties (walking, climbing stairs, standing);

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[81] Geneva, World Health Organization, 1980.

[82] For further discussion of these topics see *Disability Statistics Compendium*, Statistics on Special Population Groups, No. 4 (United Nations publication Sales No. (90.XVII.17), chap. II, sect. A.3 (b) and (c)); and Mary Chamie, "Survey design strategies for the study of disability, *World Health Statistics Quarterly*, vol. 42, No. 3 (1989).

[83] Statistics on Special Population Groups, No. 8 (United Nations publication, Sales No. E.96.XVII.4 and Corr.1).

[84] The disabilities listed may be linked to the ICIDH codes as follows: difficulties in seeing, 25-27; difficulties in hearing, 23-24; difficulties in talking, 21; difficulties in moving, 40-42, difficulties in body movements, 5; difficulties in gripping, 6; difficulties in learning, 15; behavioural difficulties, 10; personal care difficulties, 3.

body movement difficulties (reaching, crouching, kneeling); gripping/holding difficulties (using fingers to grip or handle objects); learning difficulties (intellectual difficulties, retardation); behavioural difficulties (psychological, emotional problems); personal care difficulties (bathing, dressing, feeding); others (specify).[85] If a person indicates having one or more of the disabilities reported in the list, he or she is then identified as having a disability.

2.265. If a country wishes to modify this list, it is important that the resulting list cover all of the main aspects of functional limitations in daily life, if the total population with disability is to be identified. It is also important that the list be adapted to the experience of children and the elderly in order to identify disability among these categories of the population. For example among children, problems with learning are of special importance. In past experience, many countries measuring disability through censuses covered only those with severe impairments, for example, persons who were blind, deaf or mute. The approach suggested here covers a broader set of people with disability.

2.266. To provide the basis for estimates of a general crude prevalence rate, the category "others" should always be included. In order to distinguish people without disabilities from people who do not answer the question, the category "no difficulties" should be included.

2.267. The data obtained by the census are sensitive to the type of question and the wording used to assess the disability status of the population. The question should be worded in language that is clear and simple. The question and words used by the interviewer should be appropriate so that people are not embarrassed or insulted by them.

2.268. A generic question does not (without specifying types of disabilities) reliably identify the population with disability. It tends to exclude persons with mild and moderate disabilities, persons with disability related to psychological status, the aged and children. Listing different types of disability in the question, as recommended, will help respondents understand whether they should identify themselves as having a disability or not. For this reason, a generic question or a generic screening question followed, when a person has been identified as having disability, by a specific question on the type of disability is not recommended. Some countries may find it necessary to ask only a single question. In these cases it would be particularly important to undertake more detailed disability studies.

2.269. The question related to disability should be asked for each person who lives in the household or institution. It is not sufficient to derive disability data only from questions on the reasons for being economically inactive or not attending school. Special attention should be given to the disability status of persons living in institutional settings since in many countries a significant number of persons with disability reside in such settings, for example, in chronic care hospitals and psychiatric institutions.

2.270. If the question related to disability cannot be included in the complete enumeration, countries may wish to include it in a questionnaire administered on a sample basis.

2.271. The limited number of questions in a census cannot provide a precise measure of the number of people with disability, especially among children and other special subgroups. Data obtained in the census should be considered an indicative or provisional estimate of the number of people with disability. These data may then be utilized for the development of surveys or studies where more detailed information can be collected on people with disability.

2.272. It is recommended that organizations of people with disability be consulted at the stage of identifying priorities and country needs in respect of data on disability and at a later stage in respect of the presentation and dissemination of the results. The publicity campaign of the census could also benefit from collaboration with disability organizations for better coverage of the population with disability.

(b) Impairment and handicap

2.273. If a country places high priority on obtaining information, additional questions may be asked on impairments, on handicaps or on causes of disability. Although severity and duration of disability are of great relevance in the study of the situation of people with disability, a census questionnaire cannot collect good-quality data on these topics.

2.274. For those people who have been identified as having a disability, specific loss or dysfunction of a body part can be analysed through the use of a carefully selected impairment question. This will give information related not only to the fact of a person's being unable, say, to climb stairs but also to the reason why -- for example, is he or she paralysed or does he or she have poor vision. Information related to impairments is relevant to prevention and to planning and implementing programmes oriented to early intervention and rehabilitation.

[85] A list of disabilities that may be included in a census question is also discussed in *Health Interview Surveys*, World Health Organization Regional Publications, European Series, No. 58, A. de Bruin, H.S.J. Picavet and A. Nossikov, eds. (Geneva, WHO, 1996).

2.275. In the past experience of many countries, measuring disability rates through censuses produced data only on severe impairments, for example on the blind, the deaf and the mute. The approach suggested here covers broader sets of persons with disability, for example, people with difficulties seeing (of whom people who are blind are a subset), people with difficulties hearing (of whom people who are deaf are a subset). If a country would like to maintain comparability among new and old censuses, then within any of the broad suggested categories of disability, some subset of impairments can be investigated. In this case, only a few disability categories can be included in the question in order not to overburden the census questionnaire.

2.276. Levels of handicap may be estimated through comparative analysis with respect to persons who report disability and those who do not according to other characteristics such as education and employment. Countries may also be interested in collecting data on particular conditions under which people with disability experience a handicap, for example, when using public transportation, at work or during social events. This kind of information may be aimed at the reduction of specific factors that isolate persons with disability (physical barriers, lack of services, negative community attitudes, prejudice towards persons with disabilities). A question on handicap should identify the kinds of difficulties that prevent the person with disability from participating on equal terms in the activities of the society. In order to provide some understanding of the environment where the person with disability lives, both physical and social aspects should be considered.

(c) Causes of disability

2.277. Information on causes of disability is important for the planning and evaluation of prevention programmes. Owing to the limited space in a census questionnaire, information on causes may be obtained by asking broad questions concerning the conditions under which the disability arose, rather than by asking detailed ones concerning specific illnesses or specific injuries. It is recommended that five main categories be used in the collection of data on causes of disability: (*a*) congenital/prenatal, (*b*) diseases/illness, for example, poliomyelitis, leprosy, cataract; (*c*) injury/accidents/trauma, for example, road and transportation accidents, injury resulting from accidental falls, fire, operations of war, and accidental poisoning;[86] (*d*) other; (*e*) unknown.[87]

[86] This category includes exposure to medicines, alcohol, narcotics, gases, pesticides and other unspecified chemical substances.

[87] United Nations Statistics Division and World Health Organization, "International statistics on causes of disability", *1990 World Health Statistics Annual* (Geneva,WHO, 1990) pp. 39-69; and Mary Chamie, "What does morbidity have to do with disability?", *Disability and Rehabilitation*, 1995, vol. 17, No. 7, pp. 323-337.

VI. Topics to be investigated in housing censuses

A. Factors determining the selection of topics

2.278. With reference to the selection of topics to be included in a housing census, attention is drawn to the importance of limiting statistical inquiries to the collection of data that can be processed and published within a reasonable period of time. Such admonitions are especially applicable in connection with a housing census, since it is customary to conduct a housing and a population census as simultaneous or consecutive operations and there is more than the usual possibility that the amount of data included may be beyond the capacity of enumerators and data-processing facilities. It may be sufficient in some developing countries, for example, to ascertain only the number of housing units and other sets of living quarters of various types, the number and characteristics of the occupants thereof and the availability of a water supply system. Indeed, it might be neither feasible nor desirable in some cases to do more -- if more were attempted, the success of the census could be jeopardized.

2.279. In this context, it is false economy to collect housing data that are so incomplete that they fail to serve the principal purposes for which they are required. In this connection, it is important for census-takers to consult closely with the principal users at an early stage in the preparations for a housing census in order to concentrate on providing the data most urgently required and supplying them in their most useful form.

2.280. The topics to be covered in the questionnaire (that is to say, the subjects regarding which information is to be collected for living quarters, households and buildings) should be determined upon balanced consideration of (*a*) the needs of the country (national as well as local) to be served by the census data; (*b*) the achievement of the maximum degree of international comparability, both within regions and on a worldwide basis; (*c*) the probable willingness and ability of the public to give adequate information on the topics; (*d*) the technical competence of the enumerators in regard to obtaining information on the topics by direct observation; and (*e*) the total national resources available for conducting the census.

2.281. Such a balanced consideration will need to take into account the advantages and limitations of alternative methods of obtaining data on a given topic within the context of an integrated national programme for gathering housing statistics (see paras. 1.24 - 1.45 in part one above).

2.282. In making the selection of topics, due regard should be paid to the usefulness of historical continuity in providing the opportunity for a comparison of changes over time. Census-takers should avoid, however, collecting information no longer required simply because it was traditionally collected in the past. It becomes necessary, therefore, to review periodically the topics traditionally investigated and to re-evaluate the need for the series to which they contribute.

1. Priority of national needs

2.283. Prime importance must be given to the fact that housing censuses should be designed to meet national needs. Should any discrepancy exist among national needs, regional recommendations and global recommendations, national needs should take precedence followed by regional recommendations and finally by global recommendations. The first consideration is that the census should provide information on the topics of greatest value to the country, with questions framed in such a way as to elicit data of maximum use to that country. Experience has shown that national needs will best be served if the census includes topics generally recognized as being of basic value and defined in accordance with regional and global standards.

2.284. It is recognized that many countries will find it necessary to include in the census topics of national or local interest in addition to the topics included in the recommendations, and that the census data may need to be supplemented by housing surveys in order to obtain information on topics that cannot be included in the census either because they would overburden the enumerator or because they require specially trained interviewers. It is also possible that some countries may omit from the census certain recommended topics because it may be assumed with a high degree of confidence that a particular facility, such as electricity, for example, is available in virtually all sets of living quarters in the country. Conversely, some topics may not be investigated because of the almost total absence of certain facilities, particularly in the rural areas of some developing countries.

2. Importance of international comparability

2.285. The desirability of achieving regional and worldwide comparability should be another major consideration in the selection and formulation of topics for the census schedule. National and international objectives are usually compatible, however, since international recommendations, being based on a broad study of country experience and practice, are recommendations of definitions and methods that have met general national needs successfully.

2.286. If the particular circumstances within a country necessitate departures from international standards, every effort should be made to explain these departures in the census publications and to indicate how the national presentation can be adapted to the international standards.

3. Suitability of topics

2.287. The topics investigated should be such that the respondents will be willing and able to provide adequate information on them. Those for which information is to be obtained through direct observation by the enumerator should be within his or her technical competence. Thus, it may be necessary to avoid topics that are likely to arouse fear, local prejudice or superstition, and questions that are too complicated and difficult for the average respondent or enumerator to answer easily. The exact phrasing for each question that is needed in order to obtain the most reliable responses will of necessity depend on national circumstances and, as described in paragraphs 1.114-1.121 above, such formulations should be well tested prior to the census. It is to be stressed that no country should attempt to include all the topics (para. 2.293). Rather, countries will need to make their selection of topics in light of the considerations discussed in paragraphs 2.278-2.287, bearing in mind current regional recommendations pertaining to housing topics.

4. Resources available for the census

2.288. The selection of topics should be carefully considered in relation to the total resources available for the census. An accurate and efficient collection of data for a limited number of topics, followed by prompt tabulation and publication, is more useful than the collection of data for an overambitious list of topics that cannot be properly investigated, tabulated or stored in the database. In balancing the need for data against resources available, the extent to which questions can be precoded should be considered. This may be an important factor in determining whether or not it is economically feasible to investigate certain topics in the census.

B. List of topics

2.289. The units of enumeration for housing censuses are buildings, living quarters, and occupants of households. As mentioned in paragraphs 1.334-1.336, the building is regarded as an indirect but important unit of enumeration for housing censuses since the information concerning the building (building type, material of construction of external walls and certain other characteristics) is required to describe properly the living quarters located within the building and for the formulation of housing programmes. In a housing census, the questions on building characteristics are normally framed in terms of the building in which sets of living quarters being enumerated are located, and the information is recorded for each of the housing units or other sets of living quarters located within it.

2.290. The principal units of enumeration in a housing census are the sets of living quarters, as defined in paragraphs 1.332-1.333. Only by recognizing them as such can data be obtained that will provide a meaningful description of the housing situation and a suitable basis for the formulation of housing programmes.

2.291. The third units of enumeration are households/occupants of living quarters (as defined in paras. 1.324-1.329), their number, characteristics of the head or reference person, tenure in the housing unit and housing costs.

2.292. The list presented below is based on the global and regional census experience of the last several decades, with the addition of *solid waste disposal*, *sewage disposal* combined with toilet facilities, *electricity* as an alternative to type of lighting, and *floor space*. The topics included in the list are those on which there is considerable agreement in regard to their importance and feasibility in respect of measuring and evaluating housing conditions and formulating housing programmes: a study of housing census experiences indicates the feasibility of collecting information on those topics by means of a housing census. Those that are likely to present difficulties and require time-consuming questioning can probably best be investigated in a sample of sets of living quarters.

2.293. Basic topics are those of general interest and value to countries or areas and also of importance in enabling comprehensive comparison of statistics at the international level. The basic list consists of the following 20 topics, listed according to the unit of enumeration.

Unit of enumeration: building

1. Building - type of (para. 2.296)
2. Construction material of outer walls (para. 2.304)
3. Year or period of construction (para. 2.307)

Unit of enumeration: living quarters

4. Location of living quarters (para. 2.312)
5. Living quarters - type of (para. 2.320)
6. Occupancy status (para. 2.366)
7. Ownership - type of (para. 2.370)
8. Rooms - number of (para. 2.375)
9. Floor space - useful and/or living (para. 2.378)
10. Water supply system (para. 2.381)
11. Toilet and sewerage facilities (para. 2.384)
12. Bathing facilities (para. 2.390)
13. Cooking facilities (para. 2.392)
14. Lighting - type of and/or electricity (para. 2.398)
15. Solid waste disposal - type of (para. 2.400)
16. Occupancy by one or more households (para. 2.402)
17. Occupants - number of (para. 2.407)

Unit of enumeration: Households/occupants of living quarters

18. Demographic and economic characteristics of the head of household (para. 2.67)
    Age (para. 2.87)
    Sex (para. 2.86)
    Activity status (para. 2.168)
    Occupation (para. 2.212)
19. Tenure (para. 2.410)
20. Rental and owner-occupied housing costs (para. 2.413)

2.294. In addition to this list, paragraph 2.416 presents a list of 15 topics, defined as additional, which are represented in a number of national housing censuses and/or regional recommendations. The purpose of discussing these additional topics is to provide guidelines to national statistical authorities and an illustration to assist in the designing of housing censuses.

C. Definitions and specifications of topics

2.295. Paragraphs 2.296-2.415 below contain the recommended the recommended definitions. It is important that census data be accompanied by the definitions used in carrying out the census. It is also important that any changes in definitions that might have been made since the previous census be indicated and, if possible, accompanied by estimates of the effect of such changes on the relevant data. In this way, users will not confuse valid changes over time with increases or decreases that have occurred as the result of changed definitions.

1. Building - type of

(a) Definition of building

2.296. A building is any independent free-standing structure comprising one or more rooms[88] or other spaces, covered by a roof and usually enclosed within external walls or dividing walls[89] that extend from the foundations to the roof. However, in tropical areas, a building may consist of a roof with supports only, that is to say, without constructed walls; in some cases, a roofless structure consisting of a space enclosed by walls may be considered a "building" (see also "compound", para. 2.303).

2.297. A building may be used or intended for residential, commercial or industrial purposes or for the provision of services. It may therefore be a factory, shop, detached dwelling, apartment building, warehouse, garage, barn and so forth. In some exceptional cases, facilities usually provided by a set of living quarters are located in two or more separate detached structures, as when a kitchen is in a separate structure. In the case of living quarters with detached rooms, these rooms should be considered separate buildings. A building may therefore contain several sets of living quarters, as is the case for an apartment building or duplex; it may be coextensive with a single detached set of living quarters; or it may be only part of a set of living quarters, as is the case, for example, for living quarters with detached rooms, which are clearly intended to be used as part of the living quarters.

2.298. The concept of a building should be clearly defined and the instructions for the housing census should indicate whether all buildings are to be listed and enumerated or only those used in whole or in part for residential purposes. Instructions should also indicate whether buildings under construction are to be recorded and, if so, at what stage of completion they are to be considered eligible for inclusion. Buildings being demolished or awaiting demolition should normally be excluded.

(b) Classification of buildings by type

2.299. The following classification by type is recommended for buildings in which some space is used for residential purposes.

1. Buildings coextensive with a single housing unit
   1.1 Detached
   1.2 Attached
2. Buildings containing more than one housing unit
   2.1 Up to two floors
   2.2 From three to ten floors
   2.3 Eleven floors or more
3. Buildings for persons living in institutions
4. All others

2.300. It should be noted that, for the purpose of the housing census, the above classification refers to the building in which the sets of living quarters enumerated are located and that sets of living quarters, not buildings, will be tabulated according to the classification, since information concerning the building is required to describe the sets of living quarters within it (see para 1.334).

2.301. Category 1 provides separate sub-groupings for "detached" and "attached" buildings because, although most single-unit buildings (suburban houses, villas, and so forth) are detached, in some countries a substantial number may be attached (row houses, for example) and in such cases it may be useful to identify these as a separate group. Buildings containing more than one housing unit (category 2) will usually be apartment buildings, but they may also be other types of buildings -- buildings that are structurally subdivided so as to contain more than one housing unit. Buildings under the latter

[88] For the definition of "room", see paragraph 2.375.

[89] The term "dividing walls" refers to the walls of adjoining buildings that have been so constructed as to be contiguous, for example, the dividing walls of "row" houses.

category should be subdivided into the following: up to two floors, from 3 to 10 floors and 11 floors or more. Category 3, "Buildings for persons living in institutions", includes hospital buildings, prisons, military establishments, and so on. On the other hand, a structurally separate housing unit (a house or apartment intended for the occupancy of staff of the institution) or one that is either within a building of the institution or detached but within the grounds, belongs in category 1; if the housing unit is coextensive with a building, it belongs in category 2.

2.302. In addition to the above, and for subsequent analysis of housing conditions, each country will find it useful to provide for separate identification of the special types of buildings that are characteristic of the country concerned. These can be classified as category 4. For example, categories such as "shop/dwelling" may be included if required, and information may be sought on whether the building is wholly residential, partly residential, residential and commercial, mainly commercial, and so forth.

(c) Compound

2.303. In some countries, it may be appropriate to use the "compound" as a unit of enumeration. In some areas of the world, living quarters are traditionally located within compounds and the grouping of sets of living quarters in this way may have certain economic and social implications that it would be useful to study. In such cases, it may be appropriate, during the census, to identify compounds and to record information suitable for linking them to the sets of living quarters located within them.

2. Construction material of outer walls

2.304. This topic refers to the construction material of external (outer) walls of the building in which the sets of living quarters are located. If the walls are constructed of more than one type of material, the predominant type of material should be reported. The types distinguished (brick, concrete, wood, adobe and so on) will depend upon the materials most frequently used in the country concerned and on their significance from the point of view of permanency of construction or assessment of durability.

2.305. In some countries, the material used for the construction of roofs or of floors may be of special significance for the assessment of durability and, in such cases, it may be necessary to collect information on this as well as on the material of the walls.[90] Durability refers to the period of time for which the structure remains habitable, subject to regular maintenance. A durable structure is one expected to remain sound for a considerable period of time. Countries may wish to define the length of the period, for example, 15 or 20 years. Durability does not depend solely on the materials used in construction, since it is also affected by the way the building was erected, that is to say, the consideration whether it was built according to construction standards and regulations. Recently, technological developments in treating traditional building materials, such as bamboo, have extended the durability of those materials for several decades. Construction material of outer walls may be considered an indicator of the building's durability. Therefore, in order to assess quality of the national housing stock, durability may be measured in terms of material used together with adherence to construction standards. Specific instructions for enumerators at the national level should be developed on the basis of national building construction practice.

2.306. While the material of construction is a useful addition to data collected on the type of living quarters, it should not be considered a substitute for the latter type of information. Wood, for example, may be the material of a poorly constructed squatter's hut or of a durable and well-constructed dwelling. In these cases, information on the type of unit adds significantly to the possibility of quality appraisal.

3. Year or period of construction

2.307. This topic refers to the age of the building in which the sets of living quarters are located. It is recommended that the exact year of construction be sought for buildings constructed during the intercensal period immediately preceding if it does not exceed 10 years. Where the intercensal period exceeds 10 years or where no previous census has been carried out, the exact year of construction should be sought for buildings constructed during the preceding 10 years. For buildings constructed before that time, the information should be collected in terms of periods that will provide a useful means of assessing the age of the housing stock. Difficulty may be experienced in collecting data on this topic because in some cases the occupants may not know the date of construction.

2.308. The collection of data for single years during the intercensal period is seen as a method of checking construction statistics for deficient coverage and of integrating more closely integrating the housing census with current housing statistics.

2.309. The periods should be defined in terms of events that have some special significance in the country concerned; examples would be the period since the Second World War, the period between the First World War and the Second World War; the period before the earthquake, flood and so forth. Three age groups may be regarded as constituting a minimum classification. The total period covered by the age groups and the number of groups distinguished will depend upon the

[90] For further discussion on the materials with which specific parts of building are constructed, see paragraph 2.421.

materials and methods of construction used in the country concerned and the number of years that buildings normally last.

2.310. Where parts of buildings have been constructed at different time, the year or period of construction should refer to the major part. Where living quarters comprise more than one building (living quarters with detached rooms, for example), the age of the building that contains the major part of the living quarters should be recorded.

2.311. In countries where a significant number of households construct their own living quarters (countries with large non-monetary sectors, for example), it may be useful to include an additional question that will distinguish the living quarters according to whether or not they were constructed by the household(s) occupying them. The information should refer only to living quarters constructed during the preceding intercensal or 10-year period, and it should be made clear in formulating the question that it refers to living quarters constructed mainly by households (with or without the help of other households in the community) and not to construction executed by enterprises on behalf of households.

4. Location of living quarters

2.312. A great deal of information relevant to the location of living quarters is contained under the definition of "locality" and "urban and rural" (see paras. 2.49-2.59). It is important for those concerned with carrying out housing censuses to study this information, because the geographical concepts used in carrying out a housing census to describe the location of living quarters are extremely important both for the execution of the census and for the subsequent tabulation of the census results. When the housing census is combined with, or closely related to, a population census, these concepts need to be carefully considered and coordinated so that the geographical areas recognized in carrying out the two censuses are of optimum value for both operations.

2.313. Information on location should be collected in sufficient detail to enable tabulations to be made for the smallest geographical subdivisions required by the tabulation plan. To satisfy the requirements of the geographical classifications recommended in the tabulations in annex II to this publication, information is needed on whether the living quarters are located in an urban or rural area, the major civil division, the minor civil division and, for living quarters located in principal localities, the name of the locality.

2.314. Where a permanent system of house or building numbers does not already exist, it is essential for the census to establish a numbering system so that the location of each set of living quarters can be adequately described. Similarly, in cases where streets do not have names or numbers properly displayed, such identification should be provided as one of the pre-census operations. Adequate identification provides the basis for the preparation of census control lists (see also "living quarters and household listing", paras. 1.107-1.110); it is required in order to monitor and control the enumeration, and to identify living quarters for possible call-backs and post-enumeration evaluation surveys as well as for other post-censal inquiries that use the census as a sampling frame or other point of departure. Ideally, each building or other inhabited structure should be provided with a number, as should each set of living quarters within buildings or structures. In preparing a census control listing, it is the practice to identify further each household within the living quarters.

2.315. Living quarters that are not located in areas with a conventional pattern of streets, such as those in squatter areas or in some places not intended for habitation, may require special identification. Since it may not be possible to describe the location of these units in terms of a formal address, it may be necessary to describe them in terms of their proximity to natural or created landmarks of various kinds or in relation to buildings that are located in areas where a formal address is possible.

2.316. The various geographical designations that together define the location of living quarters are discussed below.

(a) Address

2.317. Information that describes the place where the living quarters are to be found and distinguishes them from other living quarters in the same locality falls within this category. As a rule, the information includes the name or number of the street and the number of the living quarters; in the case of apartments, the building number and the apartment number are required.

(b) Locality

2.318. For the definition of "locality", see paragraphs 2.49-2.51.

(c) Urban and rural

2.319. For the definition of "urban and rural", see paragraphs 2.52-2.59.

5. Living quarters - type of

(a) Definition of living quarters

2.320. Living quarters are structurally separate and independent places of abode. They may (*a*) have been constructed, built, converted or arranged for human habitation, provided that they are not at the time of the census used wholly for other purposes and that, in the case of improvised housing units and collective living quarters, they are occupied at the time of the census or

(*b*) although not intended for habitation, actually be in use for such a purpose at the time of the census.

(i) Separateness and independence

2.321. The essential features of living quarters are separateness and independence. An enclosure may be considered separate if surrounded by walls, fences, and so forth, and covered by a roof so that a person or group of persons can isolate themselves from other persons in the community for the purposes of sleeping, preparing and taking their meals, and protecting themselves from the hazards of climate and environment. Such an enclosure may be considered independent when it has direct access from the street or from a public or communal staircase, passage, gallery or grounds, in other words, when the occupants can come in and go out of their living quarters without passing through anybody else's premises.

2.322. Attached rooms having an independent entrance, or detached rooms for habitation that clearly have been built, say, or rebuilt or converted for use as part of living quarters should be counted as part of the living quarters. Thus, living quarters may comprise rooms or groups of rooms with independent entrances, or separate buildings.

(ii) Permanence

2.323. Living quarters may be permanent or semi-permanent buildings or structures, or parts of buildings, intended for habitation, or natural shelters not intended for habitation but actually used as a place of abode on the day or night established as the time reference of the census.

(iii) Habitation

2.324. Living quarters originally intended for habitation and used wholly for other purposes at the time of the census should normally be excluded from the census coverage, while shelters not intended for habitation but occupied at the time of the census should be included. In some circumstances, it may be convenient to make a separate count for national purposes of the sets of living quarters originally intended for habitation but used wholly for other purposes at the time of the census and vice versa. In such cases, specific instruction for the enumeration of these sets of living quarters must be supplied.

(iv) Living quarters under construction, newly constructed, being demolished or awaiting demolition

2.325. Instructions should be issued so that it is clearly understood at what stage of completion sets of living quarters should be included in the housing census. They may be included in the housing census as soon as construction has begun, at various stages of construction or when construction has been completed. Living quarters being demolished or awaiting demolition should normally be excluded. The system used should be consistent with that employed for the system of current housing statistics and should avoid double counting where construction statistics are used to bring the census data up to date.

2.326. Special instructions will need to be issued concerning "core dwellings" in countries where these are provided within a preliminary phase of dwelling construction (for a discussion of core dwellings, see para. 2.341-2.343).

(b) Classification of living quarters

2.327. The living quarters defined in paragraph 2.320 are either housing units or collective living quarters. Normally, the collection of information concerning housing units will be considered of first importance in a housing census, since it is in housing units that the bulk of the population permanently lives. Furthermore, housing units are intended for occupancy, or are occupied, by households, and it is with the provision of accommodation for households that housing programmes and policies are mainly concerned. However, certain types of "collective living quarters" are also of significance with respect to the housing conditions of households; these include hotels, rooming houses and other lodging houses and camps occupied by households. Housing units should be classified so as to distinguish at least conventional dwellings from other types of housing units. It should be emphasized that without an adequate classification of living quarters, no meaningful analysis of housing conditions based on housing census data is possible.

2.328. The classification outlined below and described more fully in paragraphs 2.330-2.365 and a system of three-digit codes have been designed to group in broad classes housing units and collective living quarters with similar structural characteristics. The distribution of occupants (population) among the various groups supplies valuable information about the housing accommodation available at the time of the census. The classification also affords a useful basis of stratification for sample surveys. The living quarters may be divided into the following categories:

1 Housing units (para. 2.331)
- 1.1 Conventional dwellings (para. 2.333)
- 1.2 Basic dwellings (para. 2.336)
- 1.3 Temporary housing units (para. 2.339)
- 1.4 Mobile housing units (para. 2.345)
- 1.5 Marginal housing units (para. 2.349)
  - 1.5.1 Improvised housing units (para. 2.349)
  - 1.5.2 Housing units in permanent buildings not intended for human habitation (para. 2.351)
  - 1.5.3 Other premises not intended for human habitation (para. 2.354)

2 Collective living quarters (para. 2.355)
- 2.1 Hotels, rooming houses and other lodging houses (para. 2.358)

2.2 Institutions (para. 2.359)
2.3 Camps (para. 2.361)
2.4 Other (para. 2.362)

2.329. Not all the categories in the above classification are of importance under all circumstances. For example, in some countries certain of the groups may not need to be considered separately, while in others it will be convenient to subdivide them. However, some of the categories are of special significance for assessing the housing situation and should be distinguished even where a simplified classification is employed. The distinction between conventional and marginal housing units is referred to especially.

(c) Definitions of each type of living quarters

2.330. A description of the categories listed in paragraph 2.328 is given below.

1. Housing units

2.331. A housing unit is a separate and independent place of abode intended for habitation by a single household,[91] [92] or one not intended for habitation but occupied as living quarters by a household at the time of the census. Thus it may be an occupied or vacant dwelling, an occupied mobile or improvised housing unit or any other place occupied as living quarters by a household at the time of the census. This category includes housing of various levels of permanency and acceptability and therefore requires further classification in order to provide for a meaningful assessment of housing conditions.

2.332. It should be noted that housing units on the grounds or within the buildings housing an institution, camp, and so forth should be separately identified and counted as housing units. For example, if, in the grounds of a hospital, there is a separate and independent house intended for the habitation of the director and his or her family, the house should be counted as a housing unit. In the same way, self-contained apartments located in hotel buildings should be counted as housing units if they have direct access to the street or to a common space within the building. Similar cases will need to be identified and described in the instructions for the enumeration.

1.1 Conventional dwellings

2.333. A conventional dwelling is a room or suite of rooms and its accessories in a permanent building or structurally separated part thereof which, by the way it has been built, rebuilt or converted, is intended for habitation by one household and is not, at the time of the census, used wholly for other purposes. It should have a separate access to a street (direct or via a garden or grounds) or to a common space within the building (staircase, passage, gallery and so on). Examples of dwellings are houses, flats, suites of rooms, apartments and so forth.

2.334. A permanent building is understood to be a structure that may be expected to maintain its stability for 15 years or more, depending on the way countries define durability (para. 2.305). It is recognized that the criterion of permanency or durability is difficult for the census enumerators to apply and that its adaptation to local conditions would require considerable study and experimentation by the national offices with respect to the significance of materials and methods of construction. In some cases, it may be of greater significance nationally to apply the criteria of construction materials and methods of construction directly in order to establish whether or not the building containing the housing unit is of permanent construction rather than translate these criteria into a time period.

2.335. It may be noted that the terms dwelling, dwelling unit, dwelling house, residential dwelling unit, family dwelling, house, *logement*, *vivienda*, *unidad de vivienda* and so forth have been used indiscriminately to refer to living quarters of any type. The referent of the term "dwelling" is here limited to a housing unit located in a permanent building and designed for occupancy by one household. Although a conventional dwelling is a housing unit intended - that is to say, constructed or converted - for habitation by one household, it may, at the time of the census, be vacant or occupied by one or more households. Therefore, the essential elements of a conventional dwelling are:

A room or suit of rooms
Located in a permanent building
Separate access to a street or to a common space
Intended to be occupied by one household
Kitchen or other space for cooking within dwelling
Fixed bath or shower within dwelling
Toilet within dwelling
Piped water within dwelling

1.2 Basic dwellings

2.336. A basic dwelling is a housing unit that has some but not all of the essential facilities of a conventional dwelling. It is a permanent structure or a part of a permanent structure, hence it may be a room or a suite of rooms in a permanent building but it is without some of the conventional dwelling facilities such as kitchen, fixed bath or shower, piped water or toilet. In a number of countries or areas, a certain proportion of the housing inventory comprises such housing units which possess some but not all the characteristics of conventional dwellings.

2.337. With increased urbanization, the need for building low-cost housing units within the city limit has been developed. This

[91] Although intended for habitation by one household, a housing unit may, at the time of the census, be occupied by one or more households or by a part of a household.

[92] For the definition of "household", see paragraphs 2.60-2.66.

housing most frequently consists of buildings containing a number of separate rooms whose occupants share some or all facilities (bathing, toilet or cooking facilities). Those units do not meet all the criteria of a conventional dwelling, especially from the point of view of maintaining health standards and privacy. Such a unit is known as a *casa de palomar* in Latin America.

2.338. Therefore, basic dwellings are more or less conventional from the point of view of permanency of structure but lack some of the housing facilities identified as essential (the four types being cooking facilities, bathing facilities, piped water and toilet).

1.3 Temporary housing unit

2.339. The term "temporary housing unit" refers to a structure that, by the way it has been built, is not expected to maintain its durability for as long a period of time as, but has some of the facilities of, a conventional dwelling. As discussed earlier (paras. 2.305 and 2.334), durability needs to be specifically defined on the basis of national standards and practices. The number of these units in some countries and areas may be substantial.

2.340. For example, in some countries "core" or "nuclear" dwellings around which a dwelling will eventually be constructed are provided as part of the housing programmes. In others, a significant proportion of the housing inventory is composed of dwellings that are constructed of locally available raw materials and may be less durable than conventional or basic dwellings.

Core dwellings

2.341. Many countries with insufficient resources to meet their housing needs have attempted to alleviate the housing conditions of the population living in squatter areas by pro- viding core or nuclear dwellings. Under these programmes, the households move their improvised shacks from the squatter area to a new location, the idea being that gradually, and generally with government assistance of one kind or another, the households with core or nuclear dwellings will keep adding to the nucleus until they can abandon their shacks entirely.

2.342. A core dwelling is sometimes only a sanitary unit containing bathing and toilet facilities, to which may be added, in subsequent phases, the other elements that will finally make up the completed dwelling. Such units do not fall within the definition of a conventional or basic dwelling as set forth in paragraphs 2.333-2.338. However, although the household obviously continues to occupy its original shelter (which would probably be classified as an "improvised housing unit"), its housing situation is a vast improvement over that of households remaining in the squatter areas and the provision of the cores is a significant step towards the alleviation of housing shortages.

2.343. The problem is thus one of reflecting in the statistics the improvements brought about by programmes such as those described above without distorting the data that refer to fully constructed conventional dwellings. It is recommended, therefore, that core dwellings should be counted as dwellings in the census if at least one room[93] in addition to the sanitary facilities, is completed, and also that those dwellings that have not reached this stage of completion should be recorded as cores. Arrangements should be made so that the facilities available in the core can be related during data processing to the households for whose use they have been provided.

Semi-permanent dwellings

2.344. In still other countries and areas, the population has developed, over time, a traditional and typical type of housing unit that does not have all the characteristics of conventional or basic dwellings but is considered somewhat suitable from the point of view of climate and tradition. This is especially the case in many tropical and subtropical rural areas where housing units have been constructed or built with locally available raw materials such as bamboo, palm, straw or any similar materials. Such units often have mud walls, thatched roofs and so forth, and may be expected to last only for a limited time (from a few months to 10 years), although occasionally they may last for longer periods. This category is intended to cover housing units that are typical and traditional in many tropical rural areas. Such units may be known, for example, as cabins, *ranchos* or *bohíos* (Latin America), *barastis* (Bahrain), or *barong barong* (the Philippines).

1.4 Mobile housing units

2.345. A mobile housing unit is any type of living accommodation that has been produced to be transported (such as a tent) or is a moving unit (such as a ship, boat, barge, vessel, railroad car, caravan, trailer, yacht and so on) occupied as living quarters at the time of the census. Trailers and tents used as permanent living quarters are of special interest.

2.346. Although mobile housing units are significantly different from other housing units in that they can be readily moved or transported, mobility in itself is not necessarily a measure of quality. For the assessment of housing conditions in countries with a substantial number of mobile units, it may be useful to classify them further, as tents, wagons, boats, trailers, and so forth.

1.5 Marginal housing units

2.347. The term "marginal housing unit" refers to those units that do not have many of the features of a conventional dwelling and are generally characterized as unfit for human habitation,

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[93] For the definition of "room", see paragraph 2.375.

but that are used for that purpose at the time of the census. Therefore, it is neither a permanent structure nor one equipped with any of the essential facilities. Depending on national circumstances, countries should develop detailed instructions to distinguish between marginal and temporary housing units (para. 2.339).

2.348. Marginal housing units comprise three sub-groups, namely, "improvised housing units", "housing units in permanent buildings not intended for human habitation" and "other premises not intended for human habitation". These units are characterized by the fact that they are either makeshift shelters constructed of waste materials and generally considered unfit for habitation (squatters' huts, for example) or places that are not intended for human habitation although in use for that purpose at the time of the census (barns, warehouses, natural shelters and so on). Under almost all circumstances, such places of abode represent unacceptable housing and they may be usefully grouped together in order to analyse the housing conditions of the population and to estimate housing needs. Each sub-group is defined below.

1.5.1 Improvised housing units

2.349. An improvised housing unit is an independent, makeshift shelter or structure, built of waste materials and without a predetermined plan for the purpose of habitation by one household, which is being used as living quarters at the time of the census. Included in this category are squatters' huts, *poblaciones callampas* (Chile), *hongos* (Peru), *favelas* (Brazil), *sarifas* (Iraq), *jhuggis* (India and Pakistan), *gubuks* (Indonesia), *gecekondula* (Turkey) and any similar premises arranged and used as living quarters, though they may not comply with generally accepted standards for habitation, and not having many of the characteristics of conventional dwellings. This type of housing unit is usually found in urban and suburban areas, particularly at the peripheries of the principal cities.

2.350. There is a wide variation in the procedures and criteria used in classifying these units. There are many borderline cases, and countries will need to make decisions and issue detailed instruction on how to enumerate and classify improvised housing units.

1.5.2 Housing units in permanent buildings not intended for human habitation

2.351. Included in this category are housing units (in permanent buildings) that have not been built, constructed, converted or arranged for human habitation but that are actually in use as living quarters at the time of the census. These include housing units in stables, barns, mills, garages, warehouses, offices, booths and so forth.

2.352. This category also may cover units and their occupants in buildings initially built for human habitation, but later abandoned with all services cut because of deterioration. These dilapidated buildings can be found, especially in large cities, still standing, although marked for demolition. They should be included in this category if inhabited.

2.353. Premises that have been converted for human habitation, although not initially designed or constructed for this purpose, should not be included in this category.

1.5.3 Other premises not intended for human habitation

2.354. This category refers to living quarters that are not intended for human habitation or located in permanent buildings but that are nevertheless being used as living quarters at the time of the census. Caves and other natural shelters fall within this category.

2.2 Collective living quarters

2.355. Collective living quarters include structurally separate and independent places of abode intended for habitation by large groups of individuals or several households and occupied at the time of the census. Such quarters usually have certain common facilities, such as cooking and toilet installations, baths, lounge rooms or dormitories, which are shared by the occupants. As indicated in paragraph 2.328, they may be further classified into hotels, rooming houses and other lodging houses, institutions and camps.

2.356. As noted in paragraph 2.332, housing units on the grounds or within the building housing an institution, camp, hotel and so forth should be separately identified and counted as housing units.

2.357. The criteria established for the identification of collective living quarters are not always easy to apply and it is sometimes difficult for an enumerator to decide whether living quarters should be classified as a housing unit or not. This is particularly true in the case of a building occupied by a number of households. Enumerators should be given clear instructions as to when the premises occupied by a group of people living together are to be considered a housing unit and when collective living quarters.

2.1 Hotels, rooming houses and other lodging houses

2.358. This group comprises permanent structures that provide lodging on a fee basis and in which the number of borders or lodgers exceed five. Hotels, motels, inns, boarding houses, pensions, lodging houses and so forth fall within this category.

2.2 Institutions

2.359. This group covers any set of premises in a permanent structure or structures designed to house (usually large) groups

of persons who are bound by either a common public objective or a common personal interest. Such sets of living quarters usually have certain common facilities shared by the occupants (baths, lounges, dormitories and so forth). Hospitals, military barracks, boarding schools, convents, prisons and so forth fall within this category.

2.360. It may be useful, depending on national needs, to require that an institution be used as the principle usual residence of at least one person at the time of the census.

2.3 Camps

2.361. Camps are sets of premises originally intended for the temporary accommodation of persons with common activities or interests. Included in this category are military camps, refugee camps and camps established for the housing of workers in mining, agriculture, public works or other types of enterprises.

2.4 Other

2.362. This is a residual category for living quarters which may not conform to the definitions of those included in groups 2.1 through 2.3. It should be used only when the number of units in question is small. Where the number is substantial, additional groups of living quarters having characteristics that are similar and of significance for an appraisal of housing conditions should be established.

2.363. In some countries, it seems that certain types of multi-household living quarters have emerged in response to the particular needs of the population and that the characteristics of these quarters enable them to be readily identified by an enumerator. It may be useful in these countries to provide a separate sub-group for any such special types. An example of such a sub-group - multi-household living quarters (living quarters intended for habitation by more than one household) - includes buildings and enclosures intended for communal habitation by several households.

2.364. In this example, structurally separate and independent sets of living quarters for occupancy by individual households are not provided. This category would include housing arrangements peculiar to certain countries, such as the long house (Sarawak of Malaysia) and the kibbutz (Israel).

2.365. It should be noted that the types of living quarters to be included in this category are those intended for communal habitation by several households, that is to say, constructed or converted for this purpose. Housing units intended for occupancy by one household, but that at the time of the census are occupied by several households, are not to be included because this obscures the identification of households doubling up in dwellings (an important element in estimating housing needs). It is suggested that, in carrying out the census, a strict distinction be maintained between a housing unit occupied by more than one household and living quarters constructed or converted for communal habitation by several households.

6. Occupancy status

2.366. Information should be obtained for each conventional dwelling and each basic dwelling to show whether the dwelling is occupied or vacant at the time of the census. For vacant units intended for year-round occupancy, the type of vacancy (for rent, for sale, and so forth) should be reported. Occupancy status applies only to conventional and basic dwellings, since all other types of living quarters are required by definition to be occupied in order to fall within the scope of the census.

2.367. The enumeration of vacant units is likely to pose difficult problems, but at least a total count should be made for purposes of controlling the enumeration and for the reasons stated under the uses of tabulation H8 (see annex II). The type of vacancy is frequently indicated by "for sale" or "for rent" signs posted on the dwelling. Although it may not be feasible to investigate all of the topics included in the census for vacant units, as much information as possible should be collected, including information on whether the living quarters are vacant seasonally or non-seasonally.

2.368. Vacant units intended for seasonal occupancy may represent a substantial proportion of the housing inventory in resort areas and in areas where large numbers of seasonal workers are employed. The separate identification of such a category may be necessary for the correct interpretation of the overall vacancy rate as well as for an evaluation of the housing situation in the area concerned. Vacant units may be further distinguished according to the type of occupancy for which they are intended, for example, as holiday home, seasonal workers' quarters and so forth.

2.369. Whether living quarters whose occupants are temporarily absent or temporarily present should be recorded as occupied or vacant will need to be considered in relation to whether a *de jure* or de facto population census is being carried out. In either case, it would seem useful to distinguish as far as possible living quarters that are used as a second residence. This is particularly important if the second residence has markedly different characteristics from the primary residence, as is the case, for example, when agricultural households move during certain seasons of the year from their permanent living quarters in a village to rudimentary structures located on agricultural holdings. The recommended classification for conventional and basic dwellings is as follows:

1 Occupied
2 Vacant
  2.1 Seasonally vacant
  2.2 Non-seasonally vacant

2.2.1 For rent
2.2.2 For sale
2.2.3 For demolition
2.2.4 Other

7. Ownership - type of

2.370.This topic refers to the type of ownership of the living quarters themselves and not of that of the land on which the living quarters stand. Type of ownership should not be confused with tenure, which is discussed in paragraphs 2.410-2.412. Information should be obtained to show:

(*a*) Whether the living quarters are owned by the public sector (central government, local government, public corporations);

(*b*) Whether the living quarters are privately owned (by households, private corporations, cooperatives, housing associations and so on). The question is sometimes expanded to show whether the living quarters are fully paid for, being purchased in instalments or mortgaged. The classification of living quarters by type of ownership is as follows:

1 Owner-occupied
2 Non owner-occupied
  2.1 Publicly owned
  2.2 Privately owned
  2.3 Other

2.371. Living quarters are defined as owner-occupied if used wholly or partly for own occupation by the owner. Special instructions should be issued regarding living quarters being purchased in instalments or mortgaged according to national legal systems and practice. Instructions should also cover other arrangements, such as living quarters in cooperatives, housing associations and so forth.

2.372. The information on ownership may be classified, as a minimum, into two main groups, namely public ownership and private ownership. Depending upon the prevalence of various types of ownership and their significance with respect to housing conditions and the formulation of housing programmes, it may be useful to introduce some of the sub-groups shown. The categories used should be consistent with those employed in the system of national accounts of the country concerned and in accordance with the recommendations contained in the *System of National Accounts, 1993*.[94]

2.373. It has been observed that the collection of information on type of ownership in a general census may be hampered by the fact that the occupants might not know who is the owner of the property and that the owners or their representatives may be situated outside the enumeration zone. Furthermore, there are numerous cases of borderline and mixed ownership, which make the topic difficult for nationwide enumeration. This is one of the topics for which more accurate information might be obtained through a housing survey.

2.374. In countries where there is a substantial amount of employer-issued housing, it would be useful to include the subcategories "issued by the employer" and "not issued by the employer" under the category "privately owned". It is important that such information be known from the point of view of assessing the impact of job loss, in order to gauge the magnitude of the population whose loss of a job would include loss of housing as well.

8. Rooms - number of

2.375. A room is defined as a space in a housing unit or other living quarters enclosed by walls reaching from the floor to the ceiling or roof covering, or to a height of at least two metres, of an area large enough to hold a bed for an adult, that is, at least four square metres. The total number of types of rooms therefore includes bedrooms, dining rooms, living rooms, studies, habitable attics, servants' rooms, kitchens, rooms used for professional or business purposes, and other separate spaces used or intended for dwelling purposes, so long as they meet the criteria concerning walls and floor space. Passageways, verandas, lobbies, bathrooms and toilet rooms should not be counted as rooms, even if they meet the criteria. Separate information may be collected for national purposes on spaces of less than four square metres that conform in other respects to the definition of “room” if it is considered that their number warrants such a procedure.

2.376. Rooms used exclusively for business or professional purposes should be counted separately, as it is desirable to include them when calculating the number of rooms in a dwelling but to exclude them when calculating the number of persons per room. This procedure allows density levels to be studied according to the number of rooms available for living purposes in relation to the number of occupants. In any event, each country should indicate the procedure that has been followed.

2.377. It is recommended in paragraph 2.375 that kitchens be included in the count of rooms provided they meet the criteria concerning walls and floor space. Kitchens or kitchenettes that have an area smaller than four square metres or that have other characteristics that disqualify them should be excluded. For national purposes, countries may wish to identify and count kitchens within a separate group that may be analysed with

[94] United Nations publication, Sales No. E.94.XVII.4.

respect to size and utilization, and to consider separately those used exclusively for cooking.

9. Floor space - useful and/or living

2.378. This topic refers to the useful floor space in housing units, that is to say, the floor space measured inside the outer walls of housing units, excluding non-habitable cellars and attics. In multiple-dwelling buildings, all common spaces should be excluded. The approach for housing units and collective living quarters should differ.

2.379. For collective living quarters, it would be more useful to collect information on the useful floor space per occupant of the set of collective living quarters. Data should be derived by dividing the total useful floor space by the number of occupants who are living in the space.

2.380. Collecting information on the floor space available to occupants of housing units may prove to be difficult; occupants often may not know the exact or even the approximate area of the housing unit they occupy; training enumerators to calculate the floor space would be complicated and costly, and would result in inaccuracies. In this context, and taking into account the importance of the information concerned, countries should take into consideration developing detailed instructions on proper procedures for assessing these data (for example, a request for information on floor space from the official documents available to the occupants, such as the rental agreement and the title, that are supposed to include such information).

10. Water supply system

2.381. The basic information to be obtained in the census is whether housing units have or do not have a piped water installation, in other words, whether or not water is provided to the living quarters by pipes from a community-wide system or an individual installation, such as a pressure tank, pump and so forth. The unit of enumeration for this topic is a housing unit. It is also necessary to indicate whether the unit has a tap inside or, if not, whether it is within a certain distance from the door. The recommended distance is 200 metres, assuming that access to piped water within that distance allows occupants of the housing unit to provide water for household needs without being subjected to extreme efforts. Beside the location of a tap, the source of water available is also of special interest. Therefore, the recommended classification of housing unit by water supply system is as follows:

1 Piped water inside the unit
  1.1 From the community scheme
  1.2 From a private source
2 Piped water outside the unit but within 200 metres
  2.1 From the community scheme
    2.1.1 For exclusive use
    2.1.2 Shared
  2.2 From a private source
    2.2.1 For exclusive use
    2.2.2 Shared
3 No piped water available (including piped water from a source beyond a distance of 200 metres from the living quarters)

A community scheme is one that is subject to inspection and control by public authorities. Such schemes are generally operated by a public body but in some cases they are generated by a cooperative or private enterprise.

2.382. For collective living quarters, it may be useful to collect information on the availability of piped water for the use of occupants. Such living quarters are usually equipped with multi-facilities for the use of large groups, and information on the water supply system in relation to the number of occupants would be significant in respect of analysing housing conditions. The water supply system in collective living quarters constitutes an additional topic.

2.383. The most significant information from a health point of view is whether the living quarters have piped water within the premises. However, a category may be added to distinguish cases where the piped water supply is not within the living quarters but rather within the building in which the living quarters are situated. It may also be useful to collect information that would show whether the water supply is for the sole use of the occupants of the living quarters being enumerated or whether it is for the use of the occupants of several sets of living quarters, as indicated in the above classification at the three-digit level. Additional information may be sought on the availability of hot as well as cold water and on the kind of equipment used for heating water.

11. Toilet and sewerage facilities

2.384. A toilet may be defined as an installation for the disposal of human excreta. A flush toilet is an installation provided with piped water that permits humans to discharge their wastes and from which the wastes are flushed by water. The unit of enumeration for this topic is a housing unit.

2.385. For living quarters reported as having a toilet, additional information may be sought to determine whether the toilet is used exclusively by the occupants of the living quarters being enumerated or whether it is shared with the occupants of other living quarters. For living quarters reported as having no toilet, it would be useful to know whether the occupants have the use of a communal facility and the type of facility, whether they have the use of the toilet of other living quarters and the type, or whether there is no toilet of any kind available for the use of the occupants.

2.386. Some countries have found it useful to expand the classification for non-flush toilets so as to distinguish certain types that are widely used and indicate a certain level of sanitation. The recommended classification of housing unit by toilet facilities is as follows:

1 With toilet within housing unit
- 1.1 Flush toilet
- 1.2 Non-flush toilet

2 With toilet outside housing unit
- 2.1 Flush toilet
  - 2.1.1 For exclusive use
  - 2.1.2 Shared
- 2.2 Non-flush toilet
  - 2.2.1 For exclusive use
  - 2.2.2 Shared

3 No toilet available

2.387. For housing units occupied by more than a certain number of households (more than two, for example) and for collective living quarters, particularly those of the multi-household and hotel/boarding-house type, it may be useful to gather information on the number and type of toilets available to the occupants. Living quarters of this type are usually equipped with multi-facilities for the use of large groups, and information on the number and type of toilets in relation to the number of occupants would be significant in terms of analysing housing conditions.

2.388. Information should also be collected to show the sewerage system used for disposal of human excreta. The information on housing units by type of sewage disposal system may be classified as follows: (*a*) empties into a piped system connected to a public sewage disposal plant, (*b*) empties into a piped system connected to a private sewage disposal system, (*c*) other, for example, toilet empties into an open ditch, a pit, a cesspool, a river, the sea, and so forth and (*d*) no disposal system.

2.389. As for collective living quarters, it would be useful to collect information on the type of sewage disposal available therein; this would represent an additional topic.

12. Bathing facilities

2.390. Information should be obtained on whether or not there is a fixed bath or shower installation within the premises of each set of living quarters. The unit of enumeration for this topic is a housing unit. Additional information may be collected to show whether or not the facilities are for the exclusive use of the occupants of the living quarters and where there is a supply of hot water for bathing purposes or cold water only. In some areas of the world the distinction proposed above may not be the most appropriate for national needs. It may be important, for example, to distinguish in terms of availability among a separate room for bathing in the living quarters, a separate room for bathing in the building, an open cubicle for bathing in the building and a public bathhouse. The recommended classification of housing units by availability and type of bathing facilities is as follows:

1 With fixed bath or shower within housing unit
2 Without fixed bath or shower within housing unit
- 2.1 Fixed bath or shower available outside housing unit
  - 2.1.1 For exclusive use
  - 2.1.2 Shared
- 2.2 No fixed bath or shower available

2.391. For housing units occupied by more than a certain number of households (more than two, for example) and for collective living quarters, particularly those of the multi-household and hotel/boarding-house type, it may be useful to gather information on the number of fixed baths or showers available to the occupants. Living quarters of this type are usually equipped with multi-facilities for the use of large groups, and information on the number of fixed baths or showers in relation to the number of occupants would be significant in terms of analysing housing conditions. The number of fixed baths or showers in collective living quarters would represent an additional topic.

13. Cooking facilities

2.392. Information should be obtained on whether the living quarters have a kitchen, whether some other space is set aside for cooking such as a kitchenette, or whether there is no special place set aside for cooking. The unit of enumeration for this topic is a housing unit.

2.393. A kitchen is defined as a space that conforms in all respects to the criteria for a room, as defined in paragraph 2.375, and is equipped for the preparation of the principal meals of the day and intended primarily for that purpose.

2.394. Any other space reserved for cooking, such as a kitchenette, will fall short in respect of possessing the attributes of a room as defined in paragraph 2.375, although it may be equipped for the preparation of the principal meals of the day and is intended primarily for that purpose.

2.395. The collection of data on the availability of a kitchen may provide a convenient opportunity to gather information on the kind of equipment that is used for cooking, for example, a stove, hotplate, or open fire, and on the availability of a kitchen sink and a space for food storage so as to prevent spoilage. The

recommended classification of housing units by availability of a kitchen or other space reserved for cooking is as follows:

1 With kitchen within housing unit
2 With other space for cooking within housing unit
3 Without kitchen or other space for cooking within housing unit
  3.1 Kitchen or other space for cooking available outside housing unit
    3.1.1 For exclusive use
    3.1.2 Shared
  3.2 No kitchen or other space for cooking available

2.396. In the context, it would be useful to investigate the kind of fuel used for cooking. The data collected may refer to electricity, gas, oil, coal, wood, animal waste and so forth, depending upon the country; they may refer to the fuel most frequently used and to the fuel used for preparing the principal meals. Fuel used for cooking is listed as an additional topic (para. 2.424). It may be noted that the question on the number of rooms (para. 2.375) may provide a convenient opportunity to collect information on kitchen and kitchenette where such information is desired. Additional information may be collected to show whether the facilities are for the exclusive use of the occupants of the living quarters.

2.397. For housing units occupied by more than a certain number of households (more than two, for example) and for collective living quarters, particularly those of the multi-household and hotel/boarding-house type, it may be useful to gather information on the number of kitchens available for the occupants. Living quarters of this type are usually equipped with multi-facilities for the use of large groups, and information on the number of kitchens or kitchenettes in relation to the number of occupants would be significant in terms of analysing housing conditions. It represents an additional topic.

14. Lighting - type of and/or electricity

2.398. Information should be collected on the type of lighting in the living quarters, such as electricity, gas, oil lamp and so forth. If the lighting is by electricity, some countries may wish to collect information showing whether the electricity comes from a community supply, generating plant or some other source (industrial plant, mine and so on). In addition to the type of lighting, countries should assess the information on the availability of electricity for purposes other than lighting (such as cooking, heating water, heating the premises and so forth). If housing conditions in the country allow this information to be derived from the type of lighting, there would be no need for additional inquiry.

2.399. For collective living quarters, it may be useful to collect information on availability of electricity to the occupants. Such living quarters are usually equipped with multi-facilities for the use of large groups, and information on electricity would be significant in terms of analysing housing conditions. The availability of electricity in collective living quarters is defined as an additional topic.

15. Solid waste disposal - type of

2.400. Securing sustainable development and, in this context, the treatment of solid waste prompted the incorporation of this topic in a number of national housing censuses. It does not seem to be debatable that household surveys represent a more suitable way of collecting data on solid waste disposal; however, in order to establish reliable and sound information that could be used as a benchmark for future data collection, countries should consider incorporating this topic in the forthcoming round of population and housing censuses (the 2000 round), as a "temporary" basic topic.

2.401. This topic refers to the collection and disposal of solid waste generated by occupants of the housing unit. The unit of enumeration is a housing unit. The classification of housing units by type of solid waste disposal is according to the following guidelines:

1 Solid waste collected on a regular basis by authorized collectors
2 Solid waste collected on an irregular basis by authorized collectors
3 Solid waste collected by self-appointed collectors
4 Occupants dispose of solid waste in a local dump supervised by authorities
5 Occupants dispose of solid waste in a local dump not supervised by authorities
6 Other arrangements (including incineration of solid waste by occupants)

16. Occupancy by one or more households

2.402. For the definitions of “household,” “household head” and “persons living in institutions”, see paragraphs 2.60-2.76 and 1.330-1.331.

2.403. For the purpose of a housing census, each household must be identified separately. With respect to housing programmes, the use of the separate concepts of household and living quarters in carrying out housing censuses permits the identification of the persons or groups of persons in need of their own dwellings. If the household is defined as a group of persons occupying a set of living quarters, the number of households in the living quarters and the number of sets of occupied living quarters will always be equal and there will be no apparent housing need as reflected by doubled-up households requiring separate sets of living quarters. If living quarters are defined as the space occupied by a household, the number of households in living quarters will again be equal to

the number of sets of living quarters, with the added disadvantage that there will be no record of the number of structurally separate living quarters.

2.404. Occupancy by more than one household is a useful topic for assessing the current housing situation and measuring the need for housing. For countries relying on the housekeeping concept, the number of households will yield this information. For countries relying on the dwelling unit concept of households, information on the type of households occupying a housing unit is needed to supplement this since the household is equivalent to the dwelling unit. The classification of households occupying the housing unit is presented in paragraph 2.84.

2.405. In countries where it is traditional to count families, the family in the broad sense of the term may be adopted as an additional unit of enumeration; in the great majority of cases the composition of this unit will coincide with that of the household.

2.406. A household should be defined in the same way for housing census purposes as for population censuses.

17. Occupants - number of

2.407. Each person usually resident in a housing unit or set of collective living quarters should be counted as an occupant. Therefore, the units of enumeration for this topic are living quarters. However, since housing censuses are usually carried out simultaneously with population censuses, the applicability of this definition depends upon whether the information collected and recorded for each person in the population census indicates where he or she was on the day of the census or whether it refers to the usual residence (see paras. 2.20-2.24). Care should be exercised in distinguishing persons occupying mobile units, such as boats, caravans and trailers, as living quarters from persons using these units as a means of transportation.

18. Demographic and economic characteristics of the head of the household

2.408. From among the topics recommended for inclusion in the population census, those in paragraph 2.293 have been selected as being of most significance in relation to housing conditions; they are defined and fully described in paragraphs 2.86-2.95 and 2.168-2.220. For the housing census, the data usually relate only to the head of the household, although in some cases (for a detailed study of overcrowding, for example), it may be necessary to tabulate information (age and sex, in this instance) for the other members of the household.

2.409. In some cases, the characteristics of the person identified as the head of the household might not be of significance in connection with the housing conditions of the household. To provide a basis for valid assumptions concerning this relationship, the circumstances likely to affect it should be carefully considered and provided for in carrying out census tests and in analysing the results of those tests. Post-enumeration evaluation surveys will provide a further opportunity to examine the relationship between the characteristics (see directly below) of those identified as heads of the household and the housing conditions of the household in question.

(*a*) Age: for the definition of age, see paragraphs 2.87-2.95;
(*b*) Sex: for the definition of sex, see paragraph 2.86;
(*c*) Activity status: for the definition of activity status, see paragraphs 2.168-2.208;
(*d*) Occupation: for the definition of occupation, see paragraphs 2.212-2.220.

19. Tenure

2.410. Tenure refers to the arrangements under which the household occupies all or part of a housing unit. The unit of enumeration is a household occupying a housing unit. The classification of households by tenure is as follows:

1 Member of household owns a housing unit
2 Member of household rents all or a part of housing unit
  2.1 Member of household rents all or a part of housing unit as a main tenant
  2.2 Member of household rents a part of housing unit as a subtenant
3 Other arrangement

Particular attention needs to be given to persons who occupy premises free of cash rent, with or without the permission of the owner, especially where this is prevalent.

2.411. The question of tenure needs to be clearly distinguished in the questionnaire as one to be asked of all households; otherwise there is a danger that it may be omitted in cases where more than one household occupies a single housing unit. Tenure information collected for living quarters shows very clearly the distinction between rented units and units that are owner-occupied, but it fails to distinguish the various forms of subtenancy that exist in many areas, information regarding which could be obtained from a question directed at households,[95] nor does it allow for an investigation of the

[95] Some indication of the number of households occupying their living quarters as subtenants could be obtained from a comparison of the number of sets of living quarters of various types with the number of occupant households.

relationship between tenure and socio-economic characteristics of heads of the household. Under some circumstances, it may be useful to indicate separately households that, although not subtenants in the sense that they rent from another occupant who is a main tenant or owner-occupant, rent part of a housing unit from a landlord who lives elsewhere. These households and subtenant households may be of special significance in formulating housing programmes. On the contrary, in countries where subtenancy is not usual, information on subtenants may not be collected in the census or, if collected, may be tabulated only for selected areas.

2.412. In countries where the land and the living quarters are frequently occupied under separate tenure, the topic may be expanded to show separate information for the tenure under which the household or households occupy the living quarters and for the tenure of the land upon which those living quarters are located.

20. Rental and owner-occupant housing costs

2.413. Rent is the amount paid periodically (weekly, monthly, and so forth) for the space occupied by a household. Information may be obtained on the basis of a scale of rents rather than on that of the exact amount paid. The data may be considered in relation either to household characteristics or to the characteristics of the living quarters. In the latter case, where more than one household occupies a single set of living quarters, the rents paid by all the households will need to be summed in order to obtain the total rent for the living quarters. In the case of living quarters that are partly rented and partly owner-occupied, it may be necessary to impute the rent for the owner-occupied portion.

2.414. Provision must be made for indicating whether the living quarters covered by the rent are furnished or unfurnished and whether utilities such as gas, electricity, heat, water and so forth are included. Provision also needs to be made for recording households that occupy their premises rent-free or pay only part of the economic rent. In countries where rent for the living quarters is paid separately from rent for the land upon which they stand, separate information may need to be collected reflecting the amount of ground rent paid.

2.415. In addition to the amount of rent paid by renting households, it may be useful to collect information on the housing costs of the owner-occupants. Such costs could include information on monthly mortgage payments, taxes, cost of utilities and so forth.

D. Additional topics

2.416. As noted in paragraph 2.294, several additional topics have also been identified as being useful in regard to collection of information through national housing censuses or surveys. The following is a list of additional topics by the unit of enumeration (within each unit, the topics are given it in alphabetical order):

Unit of enumeration: Building

1. Dwellings in the building - number of (para. 2.418)
2. Elevator - availability of (para. 2.419)
3. Farm building or not (para. 2.420)
4. Materials of which specific parts of building are constructed (para. 2.421)
5. State of repair (para. 2.422)

Unit of enumeration: Living quarters

6. Bedrooms - number of (para. 2.423)
7. Fuel used for cooking (para. 2.424)
8. Heating - type and energy used for (para. 2.425)
9. Hot water - availability of (para. 2.426)
10. Piped gas - availability of (para. 2.427)
11. Telephone - availability of (para. 2.428)
12. Use of housing unit (para. 2.429)

Unit of enumeration: Occupants

13. Cars available to the household - number of (para. 2.430)
14. Durable consumer appliances available to the household (para. 2.431)
15. Outdoor space available for household use (para. 2.432)

2.417. The following paragraphs present brief descriptions of each of the additional topics. The purpose is to offer a number of illustrations that may be useful to national authorities in designing their national censuses.

2.418. Dwellings in the building - number of. This topic refers to the number of conventional and basic dwellings (paras. 2.333-2.338) in the building. The unit of enumeration is a building (para. 2.296) and information is collected on the number of conventional and basic dwellings in it.

2.419. Elevator - availability of. This topic refers to the availability of an elevator (an enclosed platform raised and lowered to transport people and freight) in a multi-storey building (categories 2.2 and 2.3 of the classification of buildings as presented in para. 2.299). The information is collected on the availability of an elevator for most of the time, in other words one that is operational for most of the time, subject to regular maintenance.

2.420. Farm building or not. A number of national censuses found it necessary to specify whether the enumerated building was a farm building or not. A farm building is one that is part of an agricultural holding and used for agricultural and/or housing purposes.

2.421. Materials of which specific parts of the building are constructed. As discussed in paragraph 2.305, in some cases the material used for the construction of roofs and floors may be of special interest and can be used to further assess the quality of dwellings in the building. The unit of enumeration is a building (para 2.296) and this topic refers to the material used for roof and/or floor (although, depending on the specific needs of a country, it may refer to other parts of the building as well, such as the frame or the foundation). Only the predominant material is enumerated and, in the case of a roof, it may be tile, concrete, metal sheets, palm, straw, bamboo or similar vegetation material, mud, plastic sheets and so forth.

2.422. State of repair. This topic refers to whether the building is in need of repair and to the kind of repair needed. The unit of enumeration is a building (para. 2.296). The classification of buildings according to the state of repair may include: repair not needed, in need of minor, moderate or serious repair and irreparable. Minor repairs refer mostly to the regular maintenance of the building and its components, such as repair of a cracked window. Moderate repairs refer to the correcting of moderate defects such as missing gutters on the roof, large areas of broken plaster, stairways with no secure handrails and so forth. Serious repairs are needed in the case of serious structural defects of the building, such as missing shingles or tiles on the roof, cracks and holes in the exterior walls, missing stairways and so forth. The term “irreparable” refers to buildings that are beyond repair, that is to say, with so many serious structural defects that it is deemed more appropriate to tear the buildings down than to undertake repairs; most usually this term is used for buildings with only the frame left standing, without complete external walls and/or roof and so forth.

2.423. Bedrooms - number of. In addition to enumerating the number of rooms (para. 2.375), a number of national censuses collect information on the number of bedrooms in a housing unit, which is the unit of enumeration for this topic. A bedroom is defined as a room (para. 2.375) equipped with a bed and used for night rest.

2.424. Fuel used for cooking. As discussed in paragraph 2.396, and in the context of the need to monitor closely the use of natural resources, a number of national housing censuses include this topic. The unit of enumeration is a housing unit; fuel used for cooking refers to the fuel used predominantly for preparation of principal meals. If two fuels (for example, electricity and gas) are used, the one used most often should be enumerated. The classification of fuels used for cooking depends on national circumstances and may include electricity, gas, oil, coal, wood, animal waste and so forth. It would also be useful to collect this information for collective living quarters as well, especially if the number of sets of collective living quarters in the country is significant.

2.425. Heating - type and energy used for. This topic refers to the type of heating of living quarters and the energy used for that purpose. The units of enumeration are all living quarters. This topic is irrelevant for a number of countries where, owing to their geographical position and climate, there is no need to provide heating in living quarters. Type of heating refers to the kind of system used to provide heating for most of the majority space: it may be central heating serving all the sets of living quarters or serving a set of living quarters, or it may not be central in which case the heating will be provided separately within the living quarters by a stove, fireplace or some other heating body. As for the energy used for heating, it is closely related to the type of heating and refers to the predominant source of energy, such as solid fuels (coal, lignite and products of coal and lignite, wood), oils, gaseous fuels (natural or liquefied gas), electricity and so forth.

2.426. Hot water - availability of. This topic refers to the availability of hot water in living quarters. Hot water denotes water heated to a certain temperature and conducted through pipes and tap to occupants. The information collected may indicate whether there is hot water available within the living quarters, or outside the living quarters for exclusive or shared use, or not at all.

2.427. Piped gas - availability of. This topic refers to whether piped gas is available in the living quarters or not. Piped gas is usually defined as natural or manufactured gas that is distributed by pipeline and whose consumption is recorded. This topic may be irrelevant for a number of countries where there is either a lack of sources of natural gas or no developed pipeline system.

2.428. Telephone - availability of. This topic refers to the availability of a telephone within the housing unit. A telephone denotes a telephone line rather than a telephone set, since more than one telephone set can be connected to a single telephone line.

2.429. Use of housing unit. Use of a housing unit refers to whether the housing unit is being used wholly for habitation (residential) purposes or not. The housing unit can be used for habitation and for commercial, manufacturing or some other purposes.

2.430. Cars available to the household - number of. This topic refers to the number of cars and vans normally available for use by occupants of the housing unit. The term “normally available” refers to cars and vans that are either owned by occupants or under some other more or less permanent agreement, such as a lease and so forth.

2.431. Durable consumer appliances available to the household. The unit of enumeration is a household occupying a housing unit and information is collected on the availability of durable appliances such as laundry washing machines, dishwashing machines, refrigerators, deep freezes, television sets, personal computers and so forth, depending on national circumstances.

2.432. Outdoor space available for household use. This topic refers to the availability of outdoor space intended for the recreational activities of the members of a household occupying a housing unit. The classification can refer to the outdoor space available as part of a housing unit (for example, the backyard in the case of a detached house), the outdoor space available adjacent to the building (for example, backyards and playgrounds placed next to the apartment building), the outdoor space available as part of common recreational areas within a 10-minute walk from the housing unit (for example, parks, sports centres and similar sites) or outdoor space not available within a 10-minute walk.

Part Three

Census Products and Data Utilization

VII. Promotion of user-producer dialogue

A. Value of censuses of population and housing

3.1. Population and housing censuses serve many needs by providing statistical information on demographic, human settlements, social and economic issues for local, national, regional and international purposes. For example, population censuses provide basic information for the preparation of population estimates and detailed demographic and socio-economic analysis of the population. In addition, population censuses constitute the principal source of records for use as a sampling frame for surveys, during the intercensal years, on such topics as the labour force, fertility, migration histories and the situation of disabled persons. The census also provides data for the calculation of social indicators,[96] particularly those that may be observed infrequently because they measure phenomena that change slowly over time and those that are needed for small populations or small geographical areas.

3.2. The housing census produces benchmark statistics on the current housing situation and is vital for developing national housing and human settlements programmes. The housing census is also valuable for providing the sampling frame for special housing and related surveys during the intercensal years. When population and housing censuses are carried out as a single operation or independently but in a well-coordinated fashion, the combined information provided is of much higher value since the essential features of both censuses are interrelated. The information on housing censuses may be analysed in association with the demographic and socio-economic condition of the occupants and, similarly, the demographic characteristics of the population may be analysed in association with the data on housing conditions.

3.3. The value of census data, as indicated in part one, is enhanced when it is part of an integrated programme that encompasses a strategy in the compilation and dissemination of statistics from a variety of data sources. In these circumstances, the planning of population and housing censuses presents an ideal opportunity to thoroughly evaluate data needs for as broad a range of users as possible in the public and private sectors.

3.4. Part three of the present Principles and Recommendations, which focuses on improving the value of census results for a wide range of users, consists of three chapters. Chapter VII stresses the importance of continued dialogue between data users and the census staff (see paras. 3.6-3.11), to ensure that the census is in a position to take into account, as fully as possible, the broad range of user needs. Chapter VIII considers the manner in which the census organization determines the types of products and services to be produced to meet the users' needs. Chapter IX discusses the use of population and housing census data for some of the cross-cutting social policy and development issues, specifically gender, youth, the elderly and the disabled population. There is new interest in sound social data to assist in confronting a range of such policy and development issues and to aid in related national and international efforts to monitor progress in achieving goals set at recent United Nations global conferences. Population and housing censuses provide an essential source of data on various social issues. That chapter also considers the use of the population and housing census to generate social indicators.

B. User needs

3.5. Census organizations are concerned with meeting the needs of diverse users. Topics that users can request are varied, as are the formats, subject-matter-detail and geographical scope and detail that users require. For example, some users need data at the national level; others need small-area data to evaluate programmes or undertake analysis of selected issues such as the environment, housing and transportation patterns. Data may be required on cross-cutting social issues including gender studies, and the living arrangements of children, youth or elderly persons together with their socio-economic situation. International migration may have an impact at national or subnational levels, leading to a need for statistics comparing the native and foreign-born, or the foreign population and those who are citizens, on various characteristics obtained from population and housing censuses. It is important for data users to recognize that many competing demands and limited resources impose great constraints on the census organization in respect of meeting users' needs.

C. Dialogue between users and producers

3.6. At all stages of the census operation, the needs of users and the constraints faced by producers must be balanced. Users who enter into a constructive dialogue with census authorities will often find that many, if not all, of their initial data needs can be met. They may also learn of other possible ways of obtaining the data they seek as well as other possible uses of existing data.

[96] *Handbook on Social Indicators*, Studies in Methods, No. 49 (United Nations publication, Sales No. E.89.XVII.6).

At the same time, a census organization that can obtain user input in the census planning process will gain significantly in terms of developing more useful products.

3.7. User groups need to learn how to provide input in the most effective ways and to state their requests clearly. In order to participate effectively and to play a constructive role in census preparation and planning, users need to understand the census-taking process and become more familiar with census operations. Administrative reports prepared from previous censuses are valuable records for this purpose. Users must recognize that continuity is very important in the census even though new items may be needed. Questions that were formerly included in the census may no longer be considered important. New surveys or administrative reporting systems may now exist for obtaining information that formerly could be obtained only through a census. Regarding dissemination, users should be familiar with various statistical publications and other statistical outputs in order to work with other users and the census organization in designing products and services that can most effectively meet their needs.

3.8. User conferences are often held during the planning stages of population and housing censuses. Such conferences, whether organized by the census office itself or by user organizations, require the cooperation of both the census organization and the users. Such conferences provide a forum where users and census planners can exchange views, understand each other's priorities and constraints and develop a process to reach consensus on data requirements. Furthermore, user conferences may provide ideas for obtaining additional resources to meet increased demands as well as help to mobilize public support for and interest in the census.

3.9. User conferences are now held in many countries, beginning at the time when topics are chosen for the population and housing censuses and continuing through planning for the census operations and dissemination. In these conferences, consultations take place with government ministries as well as non-governmental users in the private and public sectors.

3.10. There are two major messages that are important in the context of requesting that particular topics be included in a census. First, users should be aware that in the final analysis a decision on census content inevitably involves a careful balancing of the perceived needs of many users in light of the resources available to carry out the census and a range of technical and policy constraints inherent in a census. For reasons elaborated in part one (see paras. 1.17-1.48), if too many items, overly complex items or very sensitive topics are included in the census, the census may fail either for lack of public support or because a complex questionnaire can delay the processing and release of data beyond a reasonable time period.

3.11. A census is an undertaking that cannot include experimental items. Thus, each item proposed for inclusion in the census must be tested in terms of suitability, cost and practicality. Such testing is a complex process that requires that clear concepts and definitions be developed, that enumerator manuals be carefully prepared, that enumerators be able to master fully and implement the instructions without undue difficulty, and that only items be included that the public can generally be expected to understand without too much effort. In some instances, information may also be collected in other data sources such as sample surveys or administrative records. In these cases, the comparative advantage of data from each source should be considered.

VIII. Census products and services

3.12. With the rapid development of technology, census data users have an increasing interest in a broad range of products and services from the census organization. The types of output that census offices may produce and disseminate have been covered in part one (see paras. 1.236-1.256). With the availability of microcomputers, some data users may prefer to obtain census products in computer media rather than in printed form. However, there are still many users who would prefer to receive census results in printed form. Since the cost of producing census products in various formats, for example, printed, in computer media or on-line, can be high, it is recommended that countries consider very carefully the forms in which the census results are disseminated. If a cost-recovery scheme is being planned from the dissemination programme, early study and analysis of the potential data users and their requirements are particularly important.

3.13. Some data users will need specialized products that the census organization is not planning to produce as part of the general census programme. In such cases, it is recommended that the census organization establish a service to meet such specialized requests, usually on a cost reimbursement basis. Consultation with data users is recommended prior to deciding the type of services that may be required by the data users (see also paras. 1.74 and 3.6-3.11). Consultation will also assist the census organization in determining the cost that the users are prepared to pay for the services required. For example, if the third level of administrative area is the lowest unit of aggregation for the dissemination of certain characteristics, users who require more detailed disaggregation may be charged for the services required to produce these tabulations. Sometimes a major user or user group may contract prior to the census for a specific census product. Such an advance contracting will greatly facilitate census planning and may mean, as a result, that the census organization can provide the product at reduced cost. However, it is important for the creditability of the census organization that the authorities continue to give priority to general census products funded by general government funding over such specially funded outputs.

3.14. Not all of the processed material need be published. Tabulations required by only a few users, such as certain government offices or specialized research organizations, can be supplied in unpublished form (that is to say, unpublished hard-copy tables or tabulations in machine-readable format). Some data may not be tabulated until they are required. Computers provide the opportunity to produce a greater number and a wider variety of tabulations than was the case with previous tabulation procedures. The data stored in the census database represent a rich source of information, which allows fast and relatively inexpensive production of additional tables as they are requested. On-line access or dissemination of such micro- and/or macro-databases on computer media can greatly contribute to an enlarging of the user base and thus to the demand for census data. Two cautionary notes are important to keep in mind, however. First, certain cross-tabulations may be of questionable value from a substantive viewpoint because of response, sampling or processing errors or because of processing or imputation procedures. The census authorities will have to establish procedures for warning potential users about such problems to help safeguard the credibility of the entire census. Some census organizations refuse to permit the release of certain cross-tabulations for reasons related to substantive quality, although such a policy may alienate users. Other organizations will release such cross-tabulations only to "sophisticated users", but this type of policy of differentiating among users may not be permissible in some countries. Even where it is permissible, it may cause more problems than it solves. In any case, the census organization should have a clear policy that takes into account both substantive and technical considerations. Second, some detailed cross-tabulations and all files with individual records potentially pose problems in respect of disclosing information about identifiable individual respondents in violation of the rules on census confidentiality. This issue is more fully discussed in part one (see paras. 1.254-1.255). Both the substantive quality and confidentiality issues need to be addressed and appropriate safeguards established. On the other hand, neither issue should pose any problem with respect to the dissemination of a wide range of census products.

3.15. An increasing number of statistical organizations make a clear distinction between delivering basic information to the public and delivering information to specific users. In the case where cost recovery is applied, census product users requiring customized information or a copy of a product are charged. The prices of the products and services are generally established to cover all expenses related to production costs, marketing costs and standard agency overhead, including support. Production costs do not include costs of collecting and processing the data since these activities are performed in the conduct of surveys and censuses driven primarily by public policy needs.

A. Publication of census results

1. Descriptive reports

3.16. It is important that users of census products be provided on a timely basis with as much relevant information regarding the census as possible. A publication that contains information on all types of products that will be available following the census is very useful to users. A brief description of each

product should be provided including the estimated timing of release, the level of geographical detail that each product carries and, for products released periodically, the frequency of release. In the case of large census operations, several such documents tailored to the needs of different sets of users (for example, users in education, health or local government) may be useful.

3.17. Many countries publish a *census dictionary* which contains comprehensive definitions of terms and concepts and detailed classifications used to present census outputs. Some countries also publish geographical classifications and codes and the definitions of areas used in the census and their relationships with the administrative areas. Explanations of user-defined areas for specific census tabulations and the type of format available (printed or electronic) may be provided. Other published reports may include the *census methodology*, encompassing, if applicable, sampling design and methodology and *a census evaluation report*, which may include estimates of census coverage and the methodology used for their preparation.

2. Basic statistical reports

3.18. Every effort should be made to publish the principal results of a population census (such as those on age, sex and geographical distribution of the population) and of a housing census (such as a geographical distribution of sets of living quarters, households and population by type of living quarters) as soon as possible after the date of the enumeration, otherwise their usefulness and the extent of their interest to the public will be diminished. With the almost universal use of modern computer equipment for the processing of census data, the time required for processing has been greatly reduced in comparison with that for older forms of processing and the processing cost of each tabulation and the relative cost of processing additional tabulations represent a much smaller fraction of the total census cost than in the past. As a result, collection restrictions, in terms of cost and accuracy of the data, have a greater relative weight in determining the number and complexity of the tabulations that can be produced and disseminated.

3.19. The population census tabulations shown below and illustrated in annex I are intended to provide, in published form, the most important census information needed as a basis for programmes of economic and social development and to be used for research purposes. They do not in any way represent all of the tabulations that a given country may publish and certainly not all of the tabulations that may eventually be prepared for special purposes. The tabulations do not take into account the form in which information may be entered into a database, which may be more detailed than that required for these illustrative census tabulations.

List of tabulations for population censuses

Group 1. Tabulations dealing with geographical and internal migration characteristics

P1.1 Total population and population of major and minor civil divisions, by urban/rural distribution and sex
P1.2 Population in localities, by size-class of locality and sex
P1.3 Population of principal localities and of their urban agglomerations, by sex
P1.4 Native and foreign-born population, by age and sex
P1.5 Native population, by major civil division of birth, age and sex
P1.6 Population, by duration of residence in locality and major civil division, age and sex
P1.7 Population ... years of age and over, by place of usual residence, place of residence at a specified date in the past, age and sex
P1.8 Population, by place of usual residence, duration of residence, place of previous residence and sex

Group 2. Tabulations dealing with household characteristics

P2.1 Population in households, by relationship to head or other reference member of household, marital status and sex, and size of institutional population
P2.2 Population in households, by household status, age and sex, and institutional population by age and sex
P2.3 Head or other reference members of households, by age and sex; and other household members, by age and relationship to head or other reference member
P2.4 Households, population in households and number of family nuclei, by size of household
P2.5 Households and population in households, by size and type of household
P2.6 Multi-person households and population in such households, by type and size of household
P2.7 Households and population in households, by size of household and number of members under ... years of age
P2.8 Household population under 18 years of age, by age and sex and by whether living with both parents, mother alone, father alone or neither parent
P2.9 Population in households, by sex, by size and type of household and number of persons 60 years of age and over

Group 3. Tabulations dealing with demographic and social characteristics

P3.1 Population, by single years of age and sex
P3.2 Population, by marital status, age and sex
P3.3 Population, by religion, age and sex

P3.4 Population, by language (mother tongue, usual language or ability to speak one or more languages), age and sex
P3.5 Population, by national and/or ethnic group, age and sex

Group 4. Tabulations dealing with fertility and mortality

P4.1 Female population 15 years of age and over, by age and number of children ever born alive by sex
P4.2 Female population 15 years of age and over in their first marriage/union or married only once, by five-year duration of marriage/union group and number of children ever born alive by sex
P4.3 Female population 15 years of age and over, by age and number of children living (or dead) by sex
P4.4 Female population, by age at first birth, by current age and residence
P4.5 Median age at first birth, by current age of women, place of residence and educational attainment
P4.6 Mothers 15 years of age and over with at least one child under 15 years of age living in the same household, by age of mother and by sex and age of children
P4.7 Female population ... to 49 years of age, by age, number of live births, by sex within the 12 months preceding the census, and deaths among these live births, by sex
P4.8 Female population ... to 49 years of age, by age, number of live births by sex within the 12 months preceding the census and educational attainment
P4.9 Deaths, by sex and age within the 12 months preceding the census; and total population, by age and sex
P4.10 Population with mother alive (or dead), by age

Group 5. Tabulations dealing with educational characteristics

P5.1 Population ... years of age and over not attending school, by educational attainment, age and sex
P5.2 Population 5 to 29 years of age attending school, by educational attainment, age and sex
P5.3 Population 5 to 29 years of age, by school attendance, single years of age and sex
P5.4 Population 10 years of age and over, by literacy, age-group and sex
P5.5 Population that has successfully completed a course of study at the third level of education, by educational qualifications, age and sex
P5.6 Population 15 years of age and over, by field of education, age and sex

Group 6. Tabulations dealing with economic characteristics

P6.1 Population ... years of age and over, by usual (or current) activity status, marital status, age and sex
P6.2 Usually (or currently) active population, by main occupation, age and sex
P6.3 Usually (or currently) active population, by main industry, age and sex
P6.4 Usually (or currently) active population, by main status in employment, age and sex
P6.5 Usually (or currently) active population, by main status in employment, main industry and sex
P6.6 Usually (or currently) active population, by main status in employment, main occupation and sex
P6.7 Usually (or currently) active population, by main industry, main occupation and sex
P6.8 Usually (or currently) active population, by main status in employment, place of work, main occupation and sex
P6.9 Usually (or currently) active population, by institutional sector of employment, main industry and sex
P6.10 Usually (or currently) active population, by main occupation, educational attainment, age and sex
P6.11 Usually (or currently) active population, by main industry, educational attainment, age and sex
P6.12 Usually active population, by sex, main status in employment and number of weeks worked in all occupations during the last year
P6.13 Currently active population, by sex, main status in employment and number of hours worked in all occupations during the last week
P6.14 Usually (or currently) active population, by main occupation, marital status and age
P6.15 Usually (or currently) active population, by main status in employment, marital status and age
P6.16 Usually (or currently) active population in the household sector, by main status in employment, place of work, main occupation and sex
P6.17 Usually active population, by monthly or annual income, occupation and sex
P6.18 Households and population in households, by annual income and size of household
P6.19 Population not usually active, by functional categories, age and sex
P6.20 Population not currently active (in other words, not in the labour force) by primary reason for inactivity, age and sex
P6.21 Heads or other reference members of households ... years of age and over, by economic activity status, age and sex
P6.22 Households and population in households, by size of household and number of usually (or currently) active members
P6.23 Households, by size, number of usually (or currently) unemployed members and dependent children under 15 years of age in household

P6.24 Usually (or currently) active heads or other reference members of households ... years of age and over, by main status in employment, main industry and sex

Group 7. Tabulations dealing with international migration on immigrant stock

P7.1 Foreign-born population, by country of birth, age and sex
P7.2 Foreign-born population, by period of arrival, country of birth, age and sex
P7.3 Population, by country of birth and citizenship, age and sex
P7.4 Foreign-born population, by marital status, age and sex
P7.5 Foreign-born population ... years of age and over, by usual (or current) activity status, age and sex
P7.6 Economically active foreign-born population ... years of age and over, by period of arrival, occupation and sex
P7.7 Foreign-born population ... years of age and over, by educational attainment, age and sex

Group 8. Tabulations dealing with disability characteristics

P8.1 Total population, by type of disability, geographical division, urban/rural residence, whether living in household or institution, age and sex
P8.2 Households with one or more persons with disability, by type, size of household, urban/rural area
P8.3 Total population 15 years of age and over, by type of disability, marital status, urban/rural area, age and sex
P8.4 Population with disability, by cause and type of disability, urban/rural area, age and sex
P8.5 Population of usual age for entering the first level of school to 29 years of age, by school attendance, type of disability, urban/rural area, age and sex
P8.6 Population 5 years of age and over, by educational attainment, type of disability, urban/rural area, age and sex
P8.7 Population 15 years of age and over, by activity status, type of disability, urban/rural area, age and sex

3.20 The housing census tabulations are shown below and illustrated in annex II to provide comparable guidance to that provided in paragraph 3.19 for population census tabulations.

List of tabulations for housing censuses

H1. Households, by broad types of living quarters and number of homeless households
H2. Households in occupied housing units, by type of housing unit
H3. Households in occupied housing units, by type of housing unit, cross-classified by type of household
H4. Households in collective living quarters, by type of living quarters
H5. Households, by type of living quarters, cross-classified by sex and age of head of household
H6. Households, by type of living quarters, cross-classified by type of activity, occupation and sex of head of household
H7. Homeless households, by age and sex of head of household
H8. Vacant conventional and basic dwellings, by type of vacancy
H9. Conventional and basic dwellings, by year (or period) of construction of building (in which dwelling is located), cross-classified by type of building and construction material of outer walls
H10. Conventional and basic dwellings, by number of dwellings in the building
H11. Housing units, by number of rooms, cross-classified by type of housing unit and number of occupants per housing unit
H12. Households in housing units, by type of housing unit occupied, cross-classified by number of households and number of rooms per housing unit
H13. Housing units, by type of housing unit occupied, cross-classified by water supply system
H14. Housing units, by type of housing unit occupied, cross-classified by water supply system and source of water supply
H15. Housing units, by type of housing unit occupied, cross-classified by type of toilet facilities
H16. Housing units, by type of housing unit occupied, cross-classified by type of toilet and type of sewage disposal
H17. Housing units, by type of housing unit occupied, cross-classified by type of solid waste disposal
H18. Occupied housing units, by type, cross-classified by type of lighting
H19. Occupied housing units, by type, cross-classified by availability and type of cooking facilities
H20. Occupied housing units, by type, cross-classified by availability of bathing facilities
H21. Households in housing units, by type of housing unit, cross-classified by tenure of household and, for tenant households, ownership of housing unit occupied
H22. Households in housing units, by type of housing unit,

cross-classified by type of owner of the housing unit, availability of piped water and availability of toilet facilities

H23. Renting households in housing units, by rent paid, cross-classified by type of owner of the housing unit, whether space occupied is furnished or unfurnished, and tenure of the household head

H24. Renting households, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly by the household, cross-classified by type of housing unit and the number of households in the housing unit

H25. Rented housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit and the number of rooms

H26. Rented housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit, water supply system and toilet facilities

H27. Occupied housing units, by type, cross-classified by available floor area and number of occupants

3.21. In order to avoid producing housing census tabulations that are overly voluminous or that contain a large number of empty cells, some countries may find it necessary to employ a more restricted geographical classification than that suggested in the illustrations. For example, even basic facilities such as piped water or electricity may be almost completely lacking for large areas of some countries. Under these circumstances, tabulation of the relevant data for small geographical areas would not be appropriate. The geographical classification to be utilized needs to be carefully considered, taking into account the type of information being tabulated, its probable frequency distribution and the uses to which the data are likely to be put. Consultations with user groups both at the national and at the local levels may be helpful in determining the most suitable tabulation plan and method of dissemination.

3. Thematic statistical or analytical reports

3.22. Many countries prepare different types of thematic or analytical reports. These may range from volumes presenting extensive and detailed statistical tabulations, particularly cross-tabulations, to more analytical reports that combine tabular materials with some interpretative or analytical text. This latter group of reports might include, for example, *volumes of regional analysis* on such subjects as population or housing conditions of urban areas, major metropolitan areas or big cities, and regional distributions; and comparisons of key social indicators such as education, living arrangements, housing conditions, sanitation and economic activities. Other such reports might include *community profile analysis*, of, for example, the indigenous population, and so forth and *profiles of specific population groups*, such as families, children, youth and the elderly population. Reports on *population growth and distribution* that examine changes in the demographic characteristics of the country's population with breakdowns by two or three levels of administrative areas would be very useful. Such reports might focus on the growth, location and mobility of the population at the national and regional levels, and administrative areas. Partnership and external cooperation with academic institutions and other specialists in subject matter, which can facilitate such work and strengthen collaborations, should be sought whenever possible.

3.23. One of the most important reports in the publication programme is the *administrative report*, which is a record of the entire census undertaking, including problems encountered and their solutions. The report may include the following topics: a brief history of the census in the country, legal basis for conducting the census, budget requirements and control, census committees and their activities, census organization and personnel structure, quality control procedures, census calendar, census cartographic work, development and design of the questionnaires, enumeration methodology of each census, field organization, manual editing and coding, data-processing development and organization, data capture, computer editing and imputation procedure, computer hardware and software used, census evaluation, publication and data dissemination programme. The census administrative report is very useful both for the users and for the census organization itself. Given the long lapse of time between censuses and the likelihood of changes in personnel, particularly in the upper echelon, the administrative report is an essential product for the planning of future censuses (see also paras. 1.283-1.284).

B. Mapping products

3.24. Published maps are tools that make the census results more understandable and easier to use. The provision of maps serves two purposes: first, census area identification maps locate and show the boundaries of all administrative areas for which data are reported in census publications and, second, statistical or thematic maps present the significant results of the census, thus allowing the general user to visualize the geographical distributions and patterns inherent in the data. Well-designed and attractive maps will interest the users of census reports, and may raise questions that send them to the statistical tables for further details.

3.25. A comprehensive map publication programme should be developed as part of the overall population and housing census publication programme in order that the needed resources may be provided with in the budget at the initial planning stages. In addition to preparing maps for the census

tables and reports, many countries have also found it useful to produce a population atlas as a census output. Collaboration of other departments and interested agencies should be sought to facilitate the production of an atlas volume. The atlas would include maps depicting population and housing characteristics as well as other data influencing the growth, composition and distribution pattern of population and housing (see paras. 1.231-1.235).

3.26. There are three major types of area identification maps that are commonly used in most census publications: (*a*) national maps showing the boundaries of the first- and second-order geographical divisions and of the major cities or metropolitan areas; (*b*) maps of each first-order division showing the boundaries of the second- and third-order divisions for which statistical tables will be prepared; and (*c*) urban or metropolitan maps showing small sub-area boundaries as well as general streets, roads and rivers.

3.27. The purpose of statistical maps is to present the results in term of their geographical distribution. There is special interest in the current pattern of the distribution and also in changes in the patterns that have occurred over time, particularly since the last census.

3.28. As regards *thematic maps*, priority indicators for a population and housing census are total population and its distribution by sub-areas, population density, urban and rural population or metropolitan and non-metropolitan population, and changes in the population totals since the last census. Other important indicators include age, sex, fertility, mortality, migration, educational attainment, employment, household size, type of housing, ownership, number of rooms, and sanitary facilities. The producing of maps using the same set of indicators enables countries to meaningfully compare their results over time periods and with international or regional norms.

3.29. Maps are an invaluable aid in meaningfully comparing subnational results with national values or with other international and regional norms. Desktop mapping and desktop publishing software provides great flexibility in composing informative and visually appealing maps. Often several maps can be combined on a single page to show one indicator, for example, for the urban and the rural population. Also, combining maps and statistical charts are an effective means of presenting census information. On the other hand, some care should be exercised in respect of producing complex printed maps involving several variables, as such maps are often difficult to reproduce clearly and the general user may find them difficult to understand.

3.30. The following list presents some suggested topics for census maps. The list is not exhaustive: most topics that appear in the questionnaire as well as derived topics covered in part two can be presented in cartographic form. In some countries, special topics such as population distribution by ethnic or language group may be appropriate. Conversely, some of the listed maps present information on the same topic in somewhat different form, so that a census bureau may wish to select the most suitable indicator for the needs of the country.

Illustrative list of thematic census maps

Population dynamics and distribution

- Percentage population change during intercensal period(s)
- Average annual growth rate
- Population density (persons per square kilometre)
- Urban population as percentage of total population
- Distribution and size of major cities and towns
- In-migration, out-migration and net migration rates
- Born in country and foreign-born
- Born in another division of the country

Demographic characteristics

- Sex ratio (males per 100 females), possibly by age groups
- Percentage of population age 0-14
- Percentage of population age 15-64
- Percentage of population age 65 and over
- Percentage female population in childbearing ages 15-49
- Total dependency ratio (population age 0-14, and 65 and over, as percentage of population age 15-64)
- Marital status
- Birth rate
- Total fertility rate
- Mean age at first marriage
- Death rate
- Infant mortality rate
- Life expectancy at birth
- Percentage of people with disabilities

Socio-economic characteristics

- Percentage of children not in primary school
- Adult literacy rate (age 15 and over)
- Mean years of schooling (age 25 and over)
- Illiteracy rate of population age 15 and over
- Illiterate population age 15 and over (total number)
- Educational level of population age 10 and over
- Labour force as percentage of total population
- Women's share of adult labour force
- Percentage of labour force by economic sector, type of occupation and status in employment

Households and housing

- Average number of persons per household
- Percentage of households headed by women

Average number of dwelling rooms per household
Tenure status (owned, rented, and so forth)
Type of construction material
Percentage of population with access to adequate shelter
Percentage of population with access to safe water
Percentage of population with access to electricity
Percentage of population with access to sanitation
Percentage of population with access to health services

3.31. Where appropriate, the indicators can be presented disaggregated by gender as well as by urban/rural areas (for example, where the rural population is greater than about 25 per cent of the total population). If information about an indicator is also available from a previous census, it is often very informative to produce change maps or to present maps for both time periods.

3.32. The development of village population size maps by regions is of particular value. These maps combine two types of information: village population statistics and village locations in each region or subnational area. More information can be presented on, for example, the village location within the district and the region, habitable and non-habitable areas, densely populated villages, areas with no villages, and the proximity of villages. Village population size maps can also be used as base maps for additional information on village services and activities, and on location and distribution of villages without specific services, such as primary schools, dispensaries, piped water, and so forth.

C. Computer media products

3.33. Statistical tables, maps or census records may be disseminated on computer media products, such as floppy disks or compact disks. Currently available computer media such as compact disks, which can contain a large volume of data, are ideal for use in disseminating population and housing census results. Census tables with detailed breakdowns for geographical areas and a wide range of community profiles data may be contained in one electronic media product. It is necessary for the product to include easy-to-use software that enables the users to retrieve and display the data as well as manipulate them for their own needs. Similar data can also be disseminated through on-line computer media such as the Internet and the bulletin board system.

3.34. Digital census maps, and atlases can also be conveniently disseminated through such computer media. To attain the capability of dynamic mapping with an integrated database of indicators and base maps that allow users to establish maps, on the fly, for any area of any reasonable breakdown, for any suitable indicators, including those from external sources, and with any type of presentation is the ultimate goal of a census mapping exercise. Microcomputers and appropriate software today can deliver this capability, thereby allowing census organization to develop user-friendly integrated databases. Of particular interest to census applications are databases having associated graphing and mapping capabilities (see paras 1.228-1.230). This greatly increases the accessibility of information to a larger audience of users. The packaging of census data and base maps as an electronic census atlas of computer-readable files is of great value for census data dissemination.

D. Customized products and services

3.35. The increasing activity in the field of economic and social planning and the attention of such planning to subnational areas are placing new demands on statistical information in general and on population and housing censuses in particular. There is an increasing need for tabulations and mapping not only by major and minor civil divisions and by other units of analysis such as metropolitan areas but even, beyond these, by small local areas.

3.36. Therefore, it is useful to establish an *"on request"* service for users who require aggregates not available through other means. This will be especially relevant in situations where outsiders cannot obtain census micro-databases. In essence, the service would require that users provide the census office with the details of the tables or other aggregates requested so that the census office could fulfil the request, normally against payment of a certain compensation fee. Offering and promoting this service would place the statistical service in a more desirable proactive position, rather than a static one, and could be a strong catalyst for closer cooperation with census product users.

3.37. The cost of such special-purpose tabulations, which require computer programming, could be high, especially for academic institutions and other users who do not have access to a large budget. Some statistical organizations allow the users to do the necessary work using a user-friendly kind of software. A clearly written manual is required to guide the users in using the software including the contents of the census data dictionary, and other relevant information. The resulting tables are checked for any possible breach of confidentiality, in particular table cells with very small values. Checks for breaches in confidentiality could also be made automatically by computer.

3.38. Many census organizations provide services for special requests for census products, such as thematic databases, tables, and graphic and mapping outputs that can be designed for small, medium, and large businesses, communities or special interest groups. These services are normally provided to meet the increasing demand of data users for a wide range of applications such as monitoring trends, analysing unmet needs, identifying market potentials, segmenting markets, identifying service areas and priority zones, determining optimum site locations, designing and advertising new products and services, and so forth. Each category of products should also be made

available on various media (namely, paper, disk or on-line) for dissemination according to the users' requirements (see paras. 1.236-1.253).

3.39. Once the databases are created and have served the policy needs, they can serve other data users if they have market value. Since the national statistical organization is normally the only source of many geographical databases related to census data applications, market demand for these products is increasing, particularly in the geographical and population-related areas. In such cases, census products could be governed by a licence. The licence permits the users to use the product without a transferring of the ownership, since the ownership remains with the government agency. Either of two different licensing arrangements may be applied. The first is offered to organizations that use the data for their own needs and the other is offered to organizations that redistribute data or provide analytical services using census data to other persons or organizations for a fee.

3.40. Customized services of data on computer media are differentiated in terms of the forms of the data. Census products may be distributed in their original form, with or without other related information, or they can be distributed after making certain value-added modifications to meet the need of the users. Examples of such value-added activities include converting the data into another format (for use by other software packages), making the data more useful by correcting errors, adding missing information, creating subsets of the original data sets, merging the data from other sources, and bundling with software. In cases where copyright laws protect census data ownership, some royalty fees and data usage fees may be charged to the distributors to ensure a minimum return. However, if prices are too high such charges can also be a barrier to the use of the census data.

IX. Census data utilization

A. General uses of population and housing censuses

3.41. Population censuses are traditionally used for public and private sector policy-making, planning, administrative and research purposes. One of the most basic of the administrative uses of census data is in the demarcation of constituencies and the allocation of representation on governing bodies. Certain aspects of the legal or administrative status of territorial divisions may also depend on the size of their populations. Housing censuses are used to develop benchmark housing statistics and to formulate housing policy and programmes, and in the private sector to assist in site selection for industrial, retail and service facilities, as well as for the commercial development of residential housing.

3.42. Information on the size, distribution and characteristics of a country's population is essential to describing and assessing its economic, social and demographic circumstances and to developing sound policies and programmes aimed at fostering the welfare of a country and its population. The population and housing census, by providing comparable basic statistics for a country as a whole and for each administrative unit and locality therein, can make an important contribution to the over all planning process and the management of national development. The availability of information at the lowest levels of administrative units is valuable for the management and evaluation of such programmes as education and literacy, employment and human resources, reproductive health and family planning, housing and environment, maternal and child health, rural development, transportation and highway planning, urbanization and welfare. Population and housing censuses are also unique sources of data for producing relevant social indicators to monitor the impact of these government policies and programmes (see paras. 3.84-3.91).

1. Uses of population censuses

3.43. The uses of population census results and the associated tabulations described in this volume are listed according to eight groups presented in paragraph 2.16. Detailed general descriptions of the uses of tabulations in all eight subject groups may be obtained in the following United Nations publications: *General Principles for National Programmes of Population Projections as Aids to Development Planning*;[97] manuals on methods of estimating population: *Manual I: Methods of Estimating Total Population for Current Dates*;[98] and *Manual X: Indirect Techniques for Demographic Estimation*;[99] *Projection Methods for Integrating Population Variables into Development Planning*, vol. I: *Methods for Comprehensive Planning, Module One: Conceptual issues and methods for preparing demographic properties*, and *Module Two: Methods for preparing school enrolment, labour force and employment projections*;[100] *Indicators of Sustainable Development Framework and Methodologies*;[101] and *Principles and Recommendations for a Vital Statistics System*.[102]

3.44. The total population, as defined in paragraph 2.42 and its distribution among major and minor territorial divisions, and localities, are frequently a legal requirement of the census because these results are used for determining the apportionment of representation in legislative bodies, for administrative purposes and for planning the location of economic and social facilities. Internal migration, one of the major sources of population change, frequently affects the trends in population distribution. Data on internal migration, together with fertility and mortality, are needed to prepare population estimates for planning purposes and for determining policies on migration and for assessing their effectiveness. For more detailed descriptions, see the following United Nations publications: *Handbook of Population and Housing Censuses, Part II: Demographic and Social Characteristics*;[103] *Manual VI: Methods of Measuring Internal Migration*[104] (manuals on methods of estimating population); *Internal Migration of Women in Developing Countries*;[105] and *Recommendations on Statistics of International Migration, Revision 1* (ST/ESA/STAT/SER.M/58/Rev.1).

3.45. The household, a basic socio-economic unit in all countries, is often central to the study of social and economic development. The number, size and structure of households and changes in the rate of household formation are useful for planning and for developing special policies formulated for selected groups of the population, such as children, the elderly and disabled persons. Therefore, the distribution of individuals within

97 United Nations publication, Sales No. E.65.XIII.2.

98 United Nations publication, Sales No. E.52.XIII.5.

99 Population Studies, No. 81 (United Nations publication, Sales No. E.83.XIII.2).

100 United Nations publications (ST/ESA/SER.R/90 and Add.1).

101 United Nations publication, Sales No. E.96.II.A.16.

102 Statistical Papers, No. 19, Rev.1 (United Nations publication, Sales No. E.73.XVII.9).

103 Studies in Methods, No. 54 (United Nations publication, Sales No. E.91.XVII.9).

104 United Nations publication, Sales No. E.70.XIII.3.

105 United Nations publication, Sales No. E.94.XIII.3.

households is used to determine the living arrangements of families, the patterns of family structure observed, the time when new families are formed and changes in family structure due to death, divorce, migration or the departure of children to form their own households. The relationship among household members can be used to determine family structure and the existence of households composed, partially or completely, of unrelated persons, as indicated in the following manuals on methods of estimating population: *Manual VII: Methods of Projecting Households and Families*;[106] and *Handbook of Population and Housing Censuses, Part II : Demographic and Social Characteristics*.[103]

3.46. Traditionally defined demographic and social characteristics collected from the population census include sex, age, marital status, religion, language, national and/or ethnic group and citizenship. Sex and age are fundamental to the majority of the characteristics collected in the census. Census data provide more data than any other single source on gender differences, as indicated in the following United Nations publications: *Compiling Social Indicators on the Situation of Women*[107] (manuals on the situation of women and men); *Manual II: Methods of Appraisal of Quality of Basic Data for Population Estimates*;[108] (manuals on methods of estimating population); and *Handbook on Social Indicators.*[109]

3.47. Depending on national circumstances, cultural diversity may be measured by language spoken in the home or community, religion and national and/or ethnic group. For countries that are not homogeneous in terms of one or more of these variables, linguistic, religious and national and/or ethnic groups provide the basic information for a quantitative assessment of the relative size and age-sex distribution of this diversity. For more detailed descriptions of the uses of the data in the tabulations, see the following United Nations publications: *Handbook of Population and Housing Censuses, Part II: Demographic and Social Characteristics;*[103] *Manual III: Methods for Population Projections by Sex and Age* [110] (manuals on methods of estimating population); and *First Marriage: Patterns and Determinants, 1988*.[111]

3.48. Although census data on fertility and mortality cannot serve as a substitute for reliable birth and death statistics from registers, they are particularly valuable for countries where birth or death registration is lacking or incomplete and vital statistics are therefore unavailable. Even in countries with complete registration of these events, the population census is useful as a supplement to satisfactory registration data because the fertility questions provide data for calculating lifetime fertility of the female population or cohort fertility. For more detailed descriptions of the uses of the data in tabulations dealing with fertility and mortality, see the following United Nations publications: *Step-by-Step Guide to the Estimation of Child Mortality*;[112] "Assessing the effects of mortality reduction of population ageing";[113] and *Socio-economic Differentials in Child Mortality in Developing Countries*.[114]

3.49. Education has historically been one of the key factors determining the quality of life, and interest in education continues today in most of the countries of the world, where the emphasis is on improving access to and the quality of education, and broadening the scope of basic education.[115] Education is also considered a major tool in closing the gap between women and men in respect of socio-economic opportunities. Benchmark data obtained from national population censuses will therefore be of considerable importance towards fulfilling this objective. Census data reveal the disparity in educational opportunities between the sexes, age cohorts or generations, urban/rural populations and so forth, and provide important indications of the capacity of the nation for economic and social development. They furnish material for the comparison of the present educational equipment of the adult population with the present and anticipated requirements of educated human resources for various types of economic activities. Such a comparison may serve as a guide both for national policy in terms of the development of the educational system and for the planning of the economic development programmes that it will be feasible to undertake in view of human resource requirements. For more details, see the following United Nations publications: *Human Development Report, 1995*;[116] *Report on the World Social Situation, 1997;*[117] and *World Education Report, 1995*.[118]

3.50. Census information on the economic characteristics of the population focuses on enumerating the economically active

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106 United Nations publication, Sales No. E.73.XIII.2.

107 Studies in Methods, No. 32 (United Nations publication, Sales No. E.84.XVII.2).

108 United Nations publication, Sales No. E.56.XIII.2.

109 Studies in Methods, No. 49 (United Nations publication, Sales No. E.89.XVII.6).

110 United Nations publication, Sales No. E.56.XIII.3.

111 United Nations publication (ST/ESA/SER.R/76).

112 United Nations publication, Sales No. E.89.XIII.9.

113 Article by Shiro Horiuchi in *Population Bulletin of the United Nations* (New York), Nos. 31/32 (1991). Sales No. E.91.XIII.18.

114 United Nations publication, Sales No. E.85.XIII.7.

115 *Education for All Summit of Nine High-Population Countries, New Delhi, 12-16 December 1993: Final Report* (Paris, UNESCO, 1994).

116 New York, Oxford University Press, 1995.

117 United Nations publication, Sales No. E.97.IV.1.

118 Paris, Oxford University Press for UNESCO, 1995.

population so as to provide benchmark data for current studies of employment, unemployment and underemployment. It provides information on the growth, composition and distribution of the economically active population for use in policy formulation and the appraisal of human resource utilization. Economic data from censuses can also provide some input into statistics on the distribution of income, consumption and accumulation of households, on participation in agriculture and non-agricultural activities, and on participation in the informal sector. Furthermore, the data on the economically active population may give an approximate indication of the number of workers who are responsible for the support of dependants.

3.51. Statistics obtained from different sources (for example, labour-force surveys, establishment surveys and administrative records) rely on the census for sampling frames, and the use of common concepts in the different sources helps in securing comparability when multiple sources for changing patterns of economic activity are being relied upon. See the following United Nations publications: *Methods of Analysing Census Data on Economic Activities of the Population*;[119] *Handbook of Household Surveys (Revised Edition)*;[120] and *Handbook of Population and Housing Censuses, Part IV: Economic Activity Status*.[121]

3.52. As interest in the movement of people across national boundaries, in other words, international migration, has grown steadily among countries, census items and tabulations relative to international migration have grown in importance. Such tabulations are designed to assess the impact of migration on receiving countries, to understand patterns of diversity and develop programmes for the adaptation of migrants to new countries, and to serve as a source of information on emigration from sending countries. For further details, see the following United Nations publications: *National Migration Surveys,* Manuals I-IX[122] and *Recommendations on Statistics of International Migration, Revision 1* (ST/ESA/STAT/ SER. M/58/Rev.1).

3.53. The census is also an important source of data on the disabled population. Census data help to monitor the social and living conditions of persons with disability in terms of school attendance, educational attainment, employment, marital status and living arrangements. The data also provide a basis for developing policies to meet the needs of disabled persons and for evaluating the effectiveness of these policies, as demonstrated in the following United Nations publication: *Manual for the Development of Statistical Information for Disability Programmes and Policies*.[123]

2. Uses of housing censuses

3.54. The primary uses of information from housing censuses include development of a basis for planning housing and human settlement programmes and policies, public and private sector studies of urban and other non-agricultural land use, evaluation of the adequacy of housing stock and assessment of the need and market for new housing, and studies of the living conditions of the homeless and those living in temporary or substandard housing. Information collected on the number of sets, type and characteristics of living quarters and their occupants is crucial from the point of view of monitoring housing conditions and needs of the population. Combined with the information collected by regular annual statistical programmes on housing construction, data from the housing census provide a basis for identifying national, regional and local housing patterns which are needed for the development of a rational housing market aimed at stimulating various types of housing construction. The type and quality of shelter in which people are housed - the space, degree of crowding, facilities, surroundings, available transport - affect their economic activity, health, social intercourse and general outlook. The supply, characteristics and costs of housing are therefore subjects for which the housing census is an important source of information.

B. Uses of local area data

3.55. While census data may be used to study large regions or entire nations, they are also aggregations of data for many individual local areas. Data for local areas enable the user to obtain statistical information about individual areas of interest, in addition to showing variations among local areas in individual parts of the country. Modern computer technology greatly facilitates the utilization of census results for analysing the information for local areas. For example, the analysis of whether population programmes have affected the level of fertility at a regional level may be carried out by analysing data from the smallest administrative units so as to observe local variation and produce more accurate assessments of cause and effect.

3.56. Implementation of various national social and economic development programmes is a function of the state, province or

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[119] United Nations publication, Sales No. E.69.XIII.2.

[120] Studies in Methods, No. 31 (United Nations publication, Sales No. E.83.XVII.13).

[121] Studies in Methods, No. 564 (Part IV) (United Nations publications, Sales No. E.96.XVII.13).

[122] Economic and Social Commission for Asia and the Pacific, *Comparative Study on Migration, Urbanization and Development in ESCAP Region. National Migration Surveys*, Manuals I-IX (Bangkok, 1984).

[123] Statistics on Special Population Groups, No. 8 (United Nations publication, Sales No. E.96.XVII.4 and Corr.1).

lower levels of government in many countries. Results of population and housing censuses are useful for planning and monitoring development at the local area and small town level. Local area data are also important for private businesses in developing their distribution and marketing strategies. For example, information on housing demand from the population and housing census may be used by local authorities, local real estate companies, building and housing development contractors, and manufacturers of construction materials, among others.

3.57. Census data have been traditionally aggregated by various types of administrative units (for example, towns, villages, provinces, electoral units and so forth). In addition, other types of local areas are sometimes used in the census that are essentially statistical in nature (for example, census tracts and grid squares which do not change from census to census, and very small units such as city blocks or block faces). There have also been increasing demands for local area data that cut across the local administrative boundaries. Population and housing censuses provide a powerful tool for assessing the impact of population on the environment, for example, on drainage basins and on water resource management systems. The spatial units for such a study may combine a group of local administrative areas. In this situation the availability of census databases with mapping capability (see paras. 1.228-1.230) is of great importance.

3.58. Tabulations for local areas may be prepared on the basis of the resident population of each area or on the basis of the population present in each area at the time of the census. Tabulations relating to the resident population are produced for the apportionment of representation in legislative bodies, the measurement of internal migration, the computation of measures of fertility and mortality by place of residence, and the planning and administration of such services as schools and housing, which have relevance only to the resident population. Tabulations based on the population present in the area at the time of the census are useful where this population is considerably larger than the resident population and thus raises the demand for products and services above the level required by the resident population alone. The combined population and housing census may also be used to make comparisons of resident and daytime populations in specific localities, if an item on place of work is included in the population census. As indicated in part one (see paras. 1.11-1.16), users need to express their needs for particular data disseminated in a given format, based on the usual residence or place of enumeration, at an early stage of census preparations.

C. Cross-cutting social issues

3.59. Reflecting the concerns and priorities among countries around the world, the United Nations convened, between 1990 and 1996, a series of global conferences -- on children, education, environment, human rights, population, social development, women and human settlements. Each of these conferences recognized the importance of adequate information in formulating policy and monitoring progress in the achievement of conference goals, and called on countries and international organizations to develop and improve the requisite statistics and indicators. These recommendations are reflected for example in the Vienna Declaration and Programme of Action of the World Conference on Human Rights;[124] the Programme of Action of the International Conference on Population and Development;[125] the Copenhagen Declaration on Social Development and the Programme of Action of the World Summit for Social Development;[126] and the Platform for Action[127] adopted by the Fourth World Conference on Women. The programmes of action adopted by these international conferences targeted many interrelated areas of concern, and called for improved statistics to monitor progress. In deciding which social groups merit monitoring in regard to measuring the disadvantages suffered by particular groups of people, each country should determine which groups within it need special attention. Some of the common factors leading to social disadvantage are gender, age, physical or mental impairment, race, creed, and so forth. The disadvantaged are not necessarily small in number -- they may constitute the majority of the population.[128]

3.60. To meet the need for statistics on gender, many activities have been undertaken during the last two decades at the national and international levels to improve concepts, definitions and classifications for collection of statistics related to women and men. In this publication, the importance of the population and housing census as a data source has often been stressed. The population and housing census is also the principal or sometimes the only comprehensive national data source with respect to meeting the need for statistics on children, youth, the elderly and the disabled in the development of policies and programmes at

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124 A/CONF.157/24 (Part I), chap. III.

125 *Report of the International Conference on Population and Development, Cairo, 5-13 September 1994* (United Nations publication, Sales No. E.95.XIII.18), chap. I, resolution 1, annex.

126 *Report of the World Summit for Social Development, Copenhagen, 6-12 March 1995* (United Nations publication, Sales No. E.96.IV.8), chap. I, resolution 1, annexes I and II.

127 *Report of the Fourth World Conference on Women, Beijing, 4-15 September 1995* (United Nations publication, Sales No. E.96.IV.13), chap. I, resolution I, annex II.

128 Note by the Secretary-General transmitting the report of the Expert Group on the Statistical Implications of Recent Major United Nations Conferences (E/CN.3/AC.1/1996/R.4), annex, paras. 68-69. Presented to the Working Group on International Statistical Programmes and Coordination at its eighteenth session, New York, 16-19 April 1996.

the national as well as the international level. Therefore, it is important that countries identify data requirements concerning various population groups of particular interest when planning their censuses and ensure that the definitions and classification to be followed in censuses are appropriate and also consistent with those in use for the entire population.

3.61. Furthermore, the census tabulation plan should ensure in advance the inclusion of all relevant details about special population groups and a range of cross-classifications for each group, with a view to analysing its social and economic conditions. Concepts and methods for the census and the tabulation plan should be reviewed with users concerned with statistics for each special population group. In the case of some groups, for example, people with disability, a special set of questions is required to identify members of the group. In the case of others, standard questions such as age, are sufficient to identify groups such as children, youth and the elderly. In both cases, most variables needed for cross-tabulations are already provided for in the international recommendations and many national censuses. However, in the census operations, attention will often need to be given to improvement of coverage, quality-of-data issues and avoidance of stereotypic treatment. The present section deals with gender, a few special population categories such as children, youth and the elderly, and people with disability so as to assist in the preparing of detailed tabulations and databases according to international standards.

1. Statistics on gender

3.62. The global conferences on women have contributed to an increased awareness of the importance of statistics not only on women but, more broadly, on gender issues. For example, in developing census plans in a number of countries, efforts have been made to review and assess the adequacy of statistics for understanding the diversity of both women's and men's lives. It is now recognized that biases in statistics extend, in the case of women, to their economic roles and in the case of men, to their roles in the family as husband and father and their roles in the household. Improvement of statistics and statistical methods related to gender should be an important priority at all stages of work on the census -- in planning, data collection, analysis and dissemination -- and in all topics.

3.63. In addition to the more general problems of the quality of census data, two other types of problem, which apply particularly to women and stem from sex-based stereotypes and sex biases, have been noted. The first type is based, for example, on the idea that women are simply homemakers and therefore not part of the economically active population. Similarly, the notion that only men can be heads of the household affects the way questions have been designed and asked in censuses. Such stereotypes also affect the way respondents reply to the questions. If, for example, the gardening and poultry-raising done by many rural women are not perceived as work, such women may not be reported as economically active even though those activities may be the main source of family livelihood.

3.64. The second type of problem relates to biases in the collection, processing, compilation and presentation of data. For example, when census tabulations are prepared for the employed by occupation, they may be prepared either for males only or for both sexes, but only on the assumption that information on the occupational pattern of women is not of much use.

3.65. During the past decade, considerable effort has been devoted, on the one hand, to reviewing such bias and its impact on statistics concerning the situation of women and, on the other hand, to improving the concepts and methods involved in the collection of data in censuses and surveys. Related improvements in the revised System of National Accounts (SNA) and the International Labour Organization (IL0) recommendations concerning statistics of the economically active population are also of importance to the population census. They are intended to overcome the above mentioned conceptual deficiencies and to identify all women active in agriculture and in the informal sector. Similarly, efforts at the national level have been focused, for example, on eliminating biases in concepts, classifications and definitions of head of the household. For more information on these developments and their application in censuses for the improvement of statistics on women, see *Improving Concepts and Methods for Statistics and Indicators on the Situation of Women*[129] and *Methods of Measuring Women's Economic Activity: Technical Report.*[130]

3.66. Important statistical series and measures on the status of women can be readily obtained based on the above-mentioned topics and recommended tabulations for preparation from censuses. Furthermore, in the case of most topics mentioned above, the primary unit of classification is the individual and therefore a vast array of indicators may be obtained by devising appropriate additional cross-classifications for the female and male populations separately. For an illustration of census topics and tabulations that are useful for developing comprehensive statistics on women, see *Wistat: Women's Indicators and Statistics: Spreadsheet Database for Computers (Version 3)* [131] and *Handbook for National Statistical Data Bases on Women*

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[129] Studies in Methods, No. 33 (United Nations publication, Sales No. E.84.XVII.3).

[130] Studies in Methods, No. 59 (United Nations publication, Sales No. E.93.XVII.6).

[131] *Wistat: Women's Indicators and Statistics Database, Version 3, CD-ROM* (United Nations publication, Sales No. E.95.XVII.6).

and Development.[132] The household and family status classifications presented in paragraph 2.84 are appropriate for analysing the living situation of women and men, with specific reference to single mothers and fathers and elderly women and men living alone.

3.67. It should be emphasized that while all data collected at the individual level can be presented by sex, this is not always done. Cross-classifications by sex tend to be suppressed when cross-tabulations become complex with multiple-variable tables. In order to satisfy one basic condition for gender statistics, which is that all statistics on individuals should be presented by sex, sex should be considered the overriding variable in all tables, irrespective of the medium of storage or dissemination. This disaggregation by gender should be provided in all publications, databases and computer printouts of census tables on individuals.

3.68. Another important consideration is to broaden the target of dissemination and use of census data by popularizing the statistics that are published. One approach to achieving this wide outreach is to present statistics in the form of charts and simplified tables, with a simple and clear interpretation of the data. Countries planning to issue an analytical report might wish to consider using such innovative techniques and formats as those presented in *The World's Women,*[133] in order to highlight the census findings and to make the statistics more readily accessible to a wide group of users. The analytical publication could cover the main census topics or alternatively a few areas that are especially important to understanding the relative position of women and men in the country. Another set of topics to consider may be those in the minimum national social data set (MNSDS) proposed by the Expert Group on the Statistical Implications of Recent Major United Nations Conferences.[134] Guidelines on preparing such a publication are provided in *Handbook for Producing National Statistical Reports on Women and Men.*[135]

2. Statistics on children and youth

3.69. Extensive data on children and youth are available in censuses but may need improvements in terms of coverage and quality of information on specific characteristics, and on their presentation.

3.70. For statistical purposes, "children" are defined as persons under 15 years of age and "youth" are defined as those aged 15-24. However, it is useful to further divide these special groups by five-year age groups (or nationally, by groups of specific school ages) because of the rapid changes in characteristics in this age range, such as in school attendance, marital status and activity status. Also, because of differences by sex in the age at marriage, family or household status and entry into the labour market, data should be classified not only by age but also by sex. To this end, the distribution by single years of age and sex is useful. If single-year age distribution is not feasible for young children under age 5, it would be desirable to distinguish between those under one year of age (infants) and those aged 1-4. For youth aged 15-19, it would be desirable to distinguish between those 15-17 years of age and those 18-19 years of age, or to have a distinction corresponding to the age below which the country considers an individual to be a minor.

3.71. For the purpose of developing statistics on children, the principal topics in census recommendations include, *inter alia*, (*a*) sex, (*b*) age, (*c*) school attendance (for school-age children) and (*d*) relationship to head or other reference member of the household.

3.72. Children under five years of age are generally under-enumerated in censuses and all efforts should be made to achieve complete coverage of this group. Further improvement of age data should be striven for in censuses, including an in-depth evaluation of the accuracy of age data.

3.73. Given the priority on the girl child, highlighted by the World Summit for Children (1990), the International Conference on Population and Development (1994) and the Fourth World Conference on Women (1995), special attention needs to be given to improving and disseminating statistics on children. Of particular concern is the situation of the girl child with respect to school attendance, mortality, early marriage and so forth A basic problem with statistics on the girl child is that data on children ever born and children surviving tend not to be disaggregated by sex at either the questionnaire design or the tabulation stage. These data are used for indirect estimates of child mortality.

3.74. The principal topics of investigation identified for children apply also to youth, with the following additions: (*a*) marital status, (*b*) literacy, (*c*) educational attainment, (*d*) economic activity status, (*e*) number of children born alive and (*f*) age at marriage.

3.75. Some of the useful statistics and measures can be readily compiled based on the above-mentioned topics, while any additional indicators can also be obtained based on more detailed

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[132] Social Statistics and Indicators, No. 6 (United Nations publication, Sales No. E.89.XVII.9).

[133] The World's Women, 1970-1990: Trends and Statistics, Social Statistics and Indicators, No. 8 (United Nations publication, Sales No. E.90.XVII.3); and *The World's Women, 1995: Trends and Statistics, Social Statistics and Indicators, No. 12* (United Nations publication, Sales No. E.95.XVII.2 and Corrigenda).

[134] See note by the Secretary-General transmitting the report of the Expert Group on the Statistical Implications of Recent Major United Nations Conferences (E/CN.3/AC.1/1996/R.4) annex.

[135] Social Statistics and Indicators, No. 13 (United Nations publication, Sales No. E.97.XVII.10).

cross-classifications using the existing recommended census topics and/or tabulations. For an illustrative set of indicators on youth, see *Statistical Indicators on Youth*. [136]

3. Statistics on the elderly

3.76. For the elderly also, extensive data are available in population and housing censuses but may need detailed age-sex classification, as described below.

3.77. The elderly are defined as all persons aged 60 years and over. For purposes of classification, depending on the national situation, it is useful to tabulate data by five-year age groups up to age 84, instead of including them in the single broad age category 60 and over. Furthermore, countries that use a 10-year group, covering ages 55-64, may consider dividing this group into ages 55-59 and 60-64 in order to compile comparable statistics and indicators on the elderly.

3.78. For the purpose of developing statistics and indicators on the elderly, the principal topics in census recommendations include, *inter alia*, (*a*) sex, (*b*) age, (*c*) marital status, (*d*) economic activity status, (*e*) income, (*f*) household (or family) composition, (*g*) type of living quarters and (*h*) institutional population.

3.79. The statistics needed for studies of the elderly are disparate, depending as they do on national policies and circumstances. Internationally, no illustrative list of indicators is available to ensure appropriate tabulations from the censuses. For some guidance in this area, see *Handbook on Social Indicators*[137] and consult regional recommendations, where available.

4. Statistics on people with disability

3.80. The census can provide a valuable source of information on the frequency and distribution of disability in the population, at national, regional and local levels. Experience shows that although an increasing number of countries ask questions about disability in their censuses, the presentation of disability data has often been limited to tabulations showing the number of specific severe disabilities present in the population. Unfortunately, cross tabulations with other characteristics are not usually made.

3.81. A great deal of work on concepts, classifications and development of statistics on disabled persons has been undertaken in recent years and increasing numbers of countries are including disability as a topic in their censuses. For the first time, recommendations on including disability questions in a population census, are included in the (see paras. 2.258-2.277). A brief treatment of this topic is given to highlight issues involved in preparing detailed census tabulations on people with disability.

3.82. For the purpose of developing statistics on the situation of people with disability the principal topics in census recommendations include, *inter alia* (*a*) sex, (*b*) age, (*c*) place of residence, (*d*) type of household, (*e*) marital status, (*f*) type of disability (including multiple disabilities), (*g*) cause of disability, (*h*) educational attainment and attendance, (*i*) activity status, (*j*) status of employment, (*k*) industry and (*l*) occupation.

3.83. Not only should the tabulation plan for the disability data include prevalence rates by sex and age and type of disability, but it is also very important that tabulations comparing persons with and without disability on key social and economic characteristics be presented. Tabulations based on the topics listed above provide information on prevalence of disability and on the situation of people with disability. In addition, tabulations should be presented in a way that facilitates comparisons of persons with disability with those without. For further discussion on the development and use of concepts, definitions and indicators related to disability statistics, see *Manual for the Development of Statistical Information for Disability Programmes and Policies*[138] and the guidelines and principles for development of impairment, disability and handicap statistics (in preparation).

D. Social indicators

3.84. The Statistical Commission, at its twenty-eighth session (held in New York, 1995), responding to the demands of the global conferences of this decade, as indicated in paragraph 3.59, established an Expert Group on the Statistical Implications of Recent Major United Nations Conferences.[139] Among the main objectives of the Expert Group were to:

(a) Consider the programmes of action adopted by the International Conference on Population and Development, Cairo, 1994; the World Summit for Social Development, Copenhagen, 1995; and the Fourth World Conference on Women, Beijing, 1995;

(*b*) Agree on a number of critical policy domains;

(*c*) Identify relevant statistical indicators arising from such policy domains.

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[136] Statistics on Special Population Groups, No. 1 (United Nations publication, Sales No. E.85.XVII.12).

[137] Studies in Methods, No. 49 (United Nations publication, Sales No. E.89.XVII.6).

[138] Statistics on Special Population Groups, No. 8 (United Nations publication, Sales No. E.96.XVII.4 and Corr.1).

[139] See *Official Records of the Economic and Social Council, 1995, Supplement No. 8* (E/1995/28), chap. XI.

3.85. On the basis of its review of recommendations adopted by these conferences, the Expert Group identified broad policy themes and main areas of social concern as a subject-matter framework for further work in statistics to monitor achievement of the goals of the conferences. The themes are (*a*) population and development; (*b*) eradication of poverty; (*c*) expansion of productive employment and reduction of unemployment; (*d*) social integration; and (*e*) status of women and men. The areas of concern arising from the first three themes --for example, crime and criminal justice, economic resources, training, health, expenditure, material well-being and working environment -- are not all covered in censuses. On the other hand, the population groups implied in the last two themes, social integration and the status of women and men, cut across almost all topics dealt with in censuses. It is therefore important that censuses place priority on the collection of data on these groups, particularly with a view towards informing policies on social integration, giving particular attention to such groups as children, youth, the elderly and disabled persons, as well as on women and men. The concerns of these groups have been systematically expressed in the international conferences.

3.86. Suggestions for improving data on these and other population groups have been discussed in the relevant sections of this publication. In addition, some specific issues on classifications and tabulations have been highlighted in this chapter. The relevance of population and housing censuses for the development of the indicators proposed by the Expert Group as constituting the MNSDS has also been noted.

3.87. The Expert Group identified a number of indicators that may be used to monitor or assess progress towards development, and recommended a basic list of 15 indicators that would make up a minimum national social data set. The Expert Group emphasized the need for national statistics offices and funding agencies to support the development of national social statistics capabilities, within the context of the recommendations of the World Summit for Social Development.

3.88. The Statistical Commission, at its twenty-ninth session, endorsed the MNSDS with the substitution of an indicator on the contraceptive prevalence rate for the indicator on birth weight. The Commission stressed that the indicators in the MNSDS should be regarded as constituting a minimum not a maximum list, and invited users to build upon it to meet national needs and circumstances, and requirements in specific fields.[140]

3.89. For a large number of countries, population censuses are a major source of social statistics and in particular of benchmark data for the proposed social data set. It is therefore important that the revised Principles and Recommendations for Population and Housing Censuses take into account the emerging needs for social statistics implied in the global conferences. While it may not be possible to include additional topics in the census, there may be other avenues for meeting the data requirements of these international recommendations which need to be considered. For example, many of the data items required are best obtained from surveys. Therefore, in countries where surveys (and use of long forms) are planned as part of the census exercise, some of the required topics might be investigated through these surveys.

3.90. As a first step towards ensuring the availability of relevant data on the suggested indicators, in particular the MNSDS, special effort needs to be made to produce the required tabulations for early release or for dissemination in the final set of tables.

3.91. The table below relates the data required for the MNSDS with (*a*) the data items recommended for censuses and (*b*) the tabulations proposed in the annexes. For further discussion on the development of indicators, see *Handbook on Social Indicators*[137] and *Handbook for Producing National Statistical Reports on Women and Men*.[135] The latter handbook illustrates how indicators are prepared from basic data using a step-by-step approach. Policy relevance, likely problems and suggested presentations are some of the issues discussed for sample indicators in specific subject-matter fields.

[140] Ibid., *1997, Supplement No. 4* (E/1997/24), para. 67.

Census tabulations relevant to the Minimum National Social Data Set (MNSDS)

Recommended indicators in the MNSDS	Required data items/variables	Corresponding tabulations in census recommendations
1. Population estimates, by sex, age and ethnic group	Total population; Sex; Age; National and/or ethnic group	P3.1 Population, by single years of age and sex P3.5 Population, by national and/or ethnic group, age and sex
2. Life expectancy at birth, by sex	Deaths in the past 12 months, by age and sex; Population, by age and sex	P4.9 Deaths, by sex and age within the 12 months preceding the census; and total population, by age and sex
3. Infant mortality, by sex	Live births within the 12 months preceding the census; Deaths of infants born within the 12 months preceding the census (See also indirect estimates for indicator 4)	P4.7 Female population ... to 49 years of age, by age, number of live births by sex within the 12 months preceding the census, and deaths among these live births, by sex
4. Child mortality, by sex	Indirect estimates of child mortality are based on reports of women on: Children ever born, by sex and by age group of mother; Children living, by sex and by age group of mother	P4.1 Female population 15 years of age and over, by age and number of children ever born alive by sex P4.3 Female population 15 years of age and over, by age and number of children living (or dead) by sex
5. Number of people per room, excluding kitchen and bath-room	Number of rooms; Number of occupants	H.11 Housing units, by number of rooms, cross-classified by type of housing unit and number of occupants per housing unit
6. Household income per capita (level and distribution)	Total annual income of household; Size of household	P6.18 Households and population in households, by annual income and size of household
7. Unemployment rate, by sex	Activity status; Sex	P6.1 Population ... years of age and over by usual (or current) activity status, marital status, age and sex
8. Employment-population ratio, by sex	Activity status; Sex	P6.1 Population ... years of age and over, by usual (or current) activity status, marital status, age and sex
9. Access to safe water	Water supply system; Source of water supply	H.14 Housing units, by type of housing unit occupied, cross-classified by water supply system and source of water supply
10. Access to sanitation	Type of toilet facilities	H.15 Housing units, by type of housing unit occupied, cross-classified by type of toilet facilities

Note: Five of the recommended indicators -- namely, maternal mortality; contraceptive prevalence; average number of years of schooling completed by sex; per capita gross domestic product (GDP); and monetary value of the basket of food needed for minimum nutritional requirements -- are not shown in the table because the data required for these indicators are not within the scope of questions usually included in population and housing censuses.

Three dots (...) indicate the minimum age adopted by the country for responding to census questions on current fertility or economic activity.

Annex 1

List of Tabulations for Population Censuses

List of tabulations for population censuses

Group 1. Tabulations dealing with geographical and internal migration characteristics

P1.1 Total population and population of major and minor civil divisions, by urban/rural distribution and by sex
P1.2 Population in localities, by size-class of locality and by sex
P1.3 Population of principal localities and of their urban agglomerations, by sex
P1.4 Native and foreign-born population, by age and sex
P1.5 Native population, by major civil division of birth, age and sex
P1.6 Population, by duration of residence in locality and major civil division, age and sex
P1.7 Population ... years of age and over, by place of usual residence, place of residence at a specified date in the past, age and sex
P1.8 Population by place of usual residence, duration of residence, place of previous residence and sex

Group 2. Tabulations dealing with household characteristics

P2.1 Population in households, by relationship to head or other reference member of household, marital status and sex, and size of institutional population
P2.2 Population in households, by household status, age and sex, and institutional population by age and sex
P2.3 Head or other reference members of households, by age and sex; and other household members, by age and relationship to head or other reference member
P2.4 Households, population in households and number of family nuclei, by size of household
P2.5 Households and population in households, by size and type of household
P2.6 Multi-person households and population in such households, by type and size of household
P2.7 Households and population in households, by size of household and number of members under ... years of age
P2.8 Household population under 18 years of age, by age and sex and by whether living with both parents, mother alone, father alone, or neither parent
P2.9 Households and population in households, by sex, by size and type of household and number of persons 60 years of age and over

Group 3. Tabulations dealing with demographic and social characteristics

P3.1 Population, by single years of age and sex
P3.2 Population, by marital status, age and sex
P3.3 Population, by religion, age and sex
P3.4 Population, by language (mother tongue, usual language or ability to speak one or more languages), age and sex
P3.5 Population, by national and/or ethnic group, age and sex

Group 4. Tabulations dealing with fertility and mortality

P4.1 Female population 15 years of age and over, by age and number of children ever born alive by sex
P4.2 Female population 15 years of age and over in their first marriage/union or married only once, by five-year duration of marriage/union group and number of children ever born alive by sex
P4.3 Female population 15 years of age and over, by age and number of children living (or dead) by sex
P4.4 Female population, by age at first birth, by current age and residence
P4.5 Median age at first birth, by current age of women, place of residence and educational attainment
P4.6 Mothers 15 years of age and over with at least one child under 15 years of age living in the same household, by age of mother and by sex and age of children
P4.7 Female population ... to 49 years of age, by age, number of live births, by sex within the 12 months preceding the census, and deaths among these live births, by sex
P4.8 Female population ... to 49 years of age, by age, number of live births by sex within the 12 months preceding the census and educational attainment
P4.9 Deaths, by sex and age within the 12 months preceding the census; and total population, by age and sex
P4.10 Population with mother alive (or dead), by age

Group 5. Tabulations dealing with educational characteristics

P5.1 Population ... years of age and over not attending school, by educational attainment, age and sex
P5.2 Population 5 to 29 years of age attending school, by educational attainment, age and sex
P5.3 Population 5 to 29 years of age, by school attendance, single years of age and sex

P5.4 Population 10 years of age and over, by literacy, age group and sex
P5.5 Population that has successfully completed a course of study at the third level of education, by educational qualifications, age and sex
P5.6 Population 15 years of age and over, by field of education, age and sex

Group 6. Tabulations dealing with economic characteristics

P6.1 Population ... years of age and over, by usual (or current) activity status, marital status, age and sex
P6.2 Usually (or currently) active population, by main occupation, age and sex
P6.3 Usually (or currently) active population, by main industry, age and sex
P6.4 Usually (or currently) active population, by main status in employment, age and sex
P6.5 Usually (or currently) active population, by main status in employment, main industry and sex
P6.6 Usually (or currently) active population, by main status in employment, main occupation and sex
P6.7 Usually (or currently) active population, by main industry, main occupation and sex
P6.8 Usually (or currently) active population, by main status in employment, place of work, main occupation and sex
P6.9 Usually (or currently) active population, by institutional sector of employment, main industry and sex
P6.10 Usually (or currently) active population, by main occupation, educational attainment, age and sex
P6.11 Usually (or currently) active population, by main industry, educational attainment, age and sex
P6.12 Usually active population, by sex, main status in employment and number of weeks worked in all occupations during the last year
P6.13 Currently active population, by sex, main status in employment and number of hours worked in all occupations during the last week
P6.14 Usually (or currently) active population, by main occupation, marital status and age
P6.15 Usually (or currently) active population, by main status in employment, marital status and age
P6.16 Usually (or currently) active population in the household sector, by main status in employment, place of work, main occupation and sex
P6.17 Usually active population, by monthly or annual income, occupation and sex
P6.18 Households and population in households, by annual income and size of household
P6.19 Population not usually active, by functional categories, age and sex
P6.20 Population not currently active (in other words, not in the labour force), by primary reason for inactivity, age and sex
P6.21 Heads or other reference members of households ... years of age and over, by economic activity status, age and sex
P6.22 Households and population in households, by size of household and number of usually (or currently) active members
P6.23 Households, by size, number of usually (or currently) unemployed members and dependent children under 15 years of age in household
P6.24 Usually (or currently) active heads or other reference members of households ... years of age and over, by main status in employment, main industry and sex

Group 7. Tabulations dealing with international migration on immigrant stock

P7.1 Foreign-born population, by country of birth, age and sex
P7.2 Foreign-born population, by period of arrival, country of birth, age and sex
P7.3 Population, by country of birth and citizenship, age and sex
P7.4 Foreign-born population, by marital status, age and sex
P7.5 Foreign-born population ... years of age and over, by usual (or current) activity status, age and sex
P7.6 Economically active foreign-born population ... years of age and over, by period of arrival, occupation and sex
P7.7 Foreign-born population ... years of age and over, by educational attainment, age and sex

Group 8. Tabulations dealing with disability characteristics

P8.1 Total population, by type of disability, geographical division, urban/rural residence, whether living in household or institution, age and sex
P8.2 Households with one or more persons with disability, by type, size of household, urban/rural area
P8.3 Total population 15 of age years and over, by type of disability, marital status, urban/rural area, age and sex
P8.4 Population with disability, by cause and type of disability, urban/rural area, age and sex
P8.5 Population 5 to 29 years of age, by school attendance, type of disability, urban/rural area, age and sex
P8.6 Population 5 years of age and over, by educational attainment, type of disability, urban/rural area, age and sex
P8.7 Population 15 years and over, by activity status, type of disability, urban/rural area, age and sex

Group 1. Tabulations dealing with geographical and internal migration characteristics

P1.1 Total population and population of major and minor civil divisions, by urban/rural distribution and by sex

Geographical division and urban/rural distribution	**Number of localities**	*Population by sex*		
		Both sexes	*Male*	*Female*
TOTAL				
Urban				
Rural				
Major civil division A [1]				
Urban				
Rural				
Minor civil division A1[1]				
Urban				
Rural				
Minor civil division A2 [1]				
Major civil division B [1]				
Urban				
Rural				
Minor civil division B1[1]				
Urban				
Rural				
Minor civil division B2[1]				
(etc.)				
Major civil division Z [1]				
Urban				
Rural				
Minor civil division Z1[1]				
Urban				
Rural				
Minor civil division Z2[1]				
Urban				
Rural				
(etc.)				

Population included: total population
Classifications:
(a) Geographical division (see paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division. Distinguish between urban and rural for (i), (ii), and (iii)
(b) Sex (para. 2.86): male; female

Total population distributed among major and minor civil divisions is frequently a legal requirement of the census, because the results are used for apportionment of representation in legislatures and for various administrative purposes. The tabulation provides data needed for studies and policy analysis with regard to economic and social development of each part of the country, for the location of economic development projects as well as of health facilities. These data are also required for the computation of vital statistics rates usually used in projections of future population of civil divisions.

[1] Name of major or minor civil division.

P1.2 Population in localities, by size-class of locality and by sex

Geographical division and urban/rural distribution	*Population by sex*		
	Both sexes	*Male*	*Female*
Total country			
TOTAL			
All localities			
500,000 or more inhabitants			
100,000-499,999 inhabitants			
50,000-99,999 inhabitants			
20,000-49,999 inhabitants			
10,000-19,999 inhabitants			
5,000-9,999 inhabitants			
2,000-4,999 inhabitants			
1,000-1,999 inhabitants			
500-999 inhabitants			
200-499 inhabitants			
Less than 200 inhabitants			
Population not in localities			

Population included: Total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) Size-class of locality (paras. 2.49-2.51): 500,000 or more inhabitants; 100,000-499,999 inhabitants; 50,000-99,999 inhabitants; 20,000-49,999 inhabitants; 10,000-19,999 inhabitants; 5,000-9,999 inhabitants; 2,000-4,999 inhabitants; 1,000-1,999 inhabitants; 500-999 inhabitants; 200-499 inhabitants; less than 200 inhabitants; and, separately, the number of localities of each size-class
(c) Population not in localities (paras. 2.49-2.51): total
(d) Sex (para. 2.86): male; female

This tabulation provides data on national patterns of concentration or dispersion of population, which will afford a reasonable degree of international comparability, provided that the unit of classification is the locality as defined in paragraph 2.49. In those countries where the distinction between urban and rural population can be based on size of locality, these data provide the basis for the urban/rural classification and also for the calculation of rates of urbanization. Use of data from successive censuses is possible to assess the rate of change, over given periods, in the number of localities in each size-class and the proportion of the population in each size-class of locality.

P1.3 Population of principal localities and of their urban agglomerations, by sex

Locality	*Population by sex*					
	Total		*Male*		*Both sexes*	
	City proper	**Urban agglomeration**	*City proper*	*Urban agglomeration*	*City proper*	*Urban agglomeration*
City or town A [1]						
City or town B [1]						
City or town C [1]						
City or town D [1]						
.						
.						
.						
City or town Z [1]						

Population included: population of localities above a specified size and the urban agglomeration of each such locality
Classifications:
(a) Geographical division: total country
(b) Principal localities and their urban agglomerations (paras. 2.49-2.51): each specified city or town, the urban agglomeration of each specified city or town (when an urban agglomeration comprises more than one specified city or town, each specified city or town should be clearly distinguished)
(c) Sex (para. 2.86): male; female

Information on the population size of the principal cities or towns and of the urban agglomerations of which these cities or towns are a part is needed for the study of the growth of the largest clusters of population within a country. The results of such study are useful in planning the local services (such as utilities, roads, schools, hospitals and so forth) that are required in proportion to population size.

The use of figures for urban agglomerations, in addition to those for the city proper, gives a more adequate indication of the size of the concentration of population, which often extends beyond the legal borders of the city. These figures may in fact reveal the need to redraw the city boundaries. For the most effective use of the data, figures are needed both for the city proper and for the urban agglomeration, because cities usually have some form of local government that does not extend over to the surrounding densely settled fringe. Responsibility for the determination of policy and subsequent action may therefore have to be shared by several minor administrative divisions, each of which requires information on the population within its own borders.

[1] Name of city or town.

P1.4 Native and foreign-born population, by age and sex

Geographical division, sex and age (in years)	**Total**	*Native*	*Foreign-born*	*Not stated*
Total country				
Both sexes				
ALL AGES				
Under 1 year				
1-4				
5-9				
10-14				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59				
60-64				
65-69				
70-74				
75-79				
80-84				
85 years and over				
Not stated				
Male				
(Age groups as above)				
Female				
(Age groups as above)				

Population included: total population
Classifications:
(*a) Geographical divisions (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)*
(b) Place of birth (paras. 2.29-2.34): native; foreign-born
(c) Age (paras. 2.87-2.95): under 1 year; 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

These data are the basis for assessing the net contribution of immigration to the age and sex structure of the population. In countries where immigration has occurred on a large scale, it is very useful to tabulate the data on age-sex structure separately for the native and the foreign-born population. Thus the effects of immigration on the growth and structure of the population can be examined and estimates of future mortality and fertility can be improved by taking into account differentials between native and foreign-born population. The provision of the category of infants under one year of age is useful for studying relative underenumeration of foreign-born and native infants.

P1.5 Native population, by major civil division of birth, age and sex

Geographical division, sex and major civil division of birth	*Age (in years)*									
	All ages	*Under 1*	*1-4*	*5-9*	*10-14*	*15-19*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes										
TOTAL										
Major civil division A [1]										
Major civil division B [1]										
Major civil division C [1]										
.										
.										
.										
Major civil division Z [1]										
Not stated										
Male (as for "Both sexes")										
Female (as for "Both sexes")										

Population included: all persons born in the country
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division. Distinguish between urban and rural for (i) and (ii)
(b) Major civil division of birth (paras 2.29-2.34): each major civil division of the country; not stated
(c) Age (paras. 2.87-2.95): under one year; 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

Data on all persons born in the country are useful for internal migration studies with respect to providing indications of the magnitude of migration into, and out of, each major part of the country as well as of the ultimate origins of the migrants. Inspite of important drawbacks, the data serve a useful purpose in countries where no other information on internal migration is available and their compilation is, accordingly, recommended for such countries. These drawbacks include failure to identify either duration of residence or prior place of residence and to provide much of the detailed information on internal migration that countries need to supply in particular information on migration to large cities, which is the most important kind of internal migration in many countries. Finally, it overlooks the fact that many foreign-born persons become internal migrants after their initial residence in the country.

[1] Name of major civil division.

P1.6 Population, by duration of residence in locality and major civil division, age and sex

Geographical division, sex and duration of residence	*Age (in years)*										
	All ages	*Under 1*	*1-4*	*5-9*	*10-14*	*15-19*	*20-24*	...	*80-84*	*85 and over*	*Not stated*
Both sexes											
TOTAL											
Resident [1]											
Resident in major civil division since birth											
Resident in locality since birth											
Not resident in locality since birth											
Resident in locality less than 1 year											
Resident in locality 1-4 years											
Resident in locality 5-9 years											
Resident in locality 10 years or more											
Duration of residence in locality not stated											
Not stated whether resident in locality since birth											
Not resident in major civil division since birth											
Resident in major civil division less than 1 year											
Resident in major civil division 1-4 years											
Resident in locality less than 1 year											
Resident in locality 1-4 years											
Duration of residence in locality not stated											
Resident in major civil division 5-9 years											
Resident in locality less than 1 year											
Resident in locality 1-4 years											
Resident in locality 5-9 years											
Duration of residence in locality not stated											
Resident in major civil division 10 or more years											
Resident in locality less than 1 year											
Resident in locality 1-4 years											
Resident in locality 10 or more years											
Duration of residence in locality not stated											
Duration of residence in major civil division not stated											
Resident in locality less than 1 year											

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): *(i) total country; (ii) each major civil division. Distinguish between urban and rural for (i) and (ii)*
(b) Duration of residence in locality (paras. 2.35-2.37): since birth; not since birth - resident for: less than 1 year, 1-4 years, 5-9 years, 10 or more years, number of years not stated; not stated whether resident in locality since birth (for additional categories needed if tabulation is prepared on the basis of the population present in each area at the time of the census, see illustration)
(c) Duration of residence in major civil division (paras. 2.35-2.37): same as for (b)
(d) Age (paras. 2.87-2.95): under 1 year; 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(e) Sex (para. 2.86): male; female

[1] This category is needed only if the tabulation is prepared on the basis of the population present in each area at the time of the census; it is not required if the tabulation is based on the resident population of each area (see para. 2.20).

Geographical division, sex and duration of residence	*Age (in years)*										
	All ages	*Under 1*	*1-4*	*5-9*	*10-14*	*15-19*	*20-24*	...	*80-84*	*85 and over*	*Not stated*
(P1.6 - continued)											
Resident in locality 1-4 years											
Resident in locality 5-9 years											
Duration of residence in locality not stated											
Not stated whether resident in major civil division since birth											
Resident in locality less than 1 year											
Resident in locality 1-4 years											
Resident in locality 5-9 years											
Resident in locality 10 or more years											
Duration of residence in locality not stated											
Transient or visitor [1]											
Not stated whether resident, transient or visitor [1]											
Males											
(as for "Both sexes")											
Females											
(as for "Both sexes")											

Data on levels of net migration also show the direction of in-migration (on the basis of information on duration of residence in locality and major division), in terms of major civil divisions of the country and the most important localities. Such data are useful for preparing estimates of the future population of specific areas of the country. These estimates are used both for planning in areas of anticipated growth and for the determination of policy on internal migration and possible measures that can be employed to affect trends in migration.

P1.7 Population ... years of age and over, by place of usual residence, place of residence at a specified date in the past, age and sex

Geographical division , place of usual residence, age (in years) and sex	**Population [1] years of age and over**	*Place of residence at a specified date in the past*					
		Major or other civil division A[2]	*Major or other civil division B[2]*	...	*Major or other civil division Z[2]*	*Foreign country*	*Not stated*
Both sexes							
TOTAL							
Major or other civil division A [1]							
Ages							
1-4 years							
5-9							
10-14							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
50-54							
55-59							
60-64							
65-69							
70-74							
75-79							
80-84							
85 years and over							
Not stated							
Major or other civil division B[2]							
(Age groups as above)							
.							
Major or other civil division Z [2]							
(Age groups as above)							
Male							
(Age groups as above)							
Female							
(Age groups as above)							

Population included: population ... years of age and over
Classifications:
(a) Geographical division (paras. 2.52-2.59): total country
(b) Place of usual residence (paras. 2.20-2.241): each major or other civil division of the country
(c) Place of residence at a specified date in the past (paras. 2.40-2.42): each major or other civil division of the country; foreign country; not stated (for persons who have always resided in the same civil division, the place of previous residence will be the same as the place of usual residence)
(d) Age (paras. 2.87-2.95): 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(e) Sex (para. 2.86): male; female

Data from a series of censuses on the sources and direction of migration between civil divisions during a specified period, and on the age composition of the migrants, make it possible to assess changes in migration over time. It is therefore useful for preparing estimates of the future population of civil divisions, which are needed for the purposes stated in respect of the use of tabulation P1.6. Unit of observation and classifications are the same as in the above-mentioned table**.**

[1] The lower age-limit depends on the specified date in the past adopted by the country. The age classification in this illustration is appropriate when the specified date in the past is one year prior to the enumeration.

[2] Name of major or other civil division.

P1.8 Population by place of usual residence, duration of residence, place of previous residence and sex

Geographical division, place of usual residence, age (in years) and sex	**Total population**	*Place of previous residence*					
		Major or other civil division A[1]	*Major or other civil division B*[1]	...	*Major or other civil division Z*[1]	*Foreign country*	*Not stated*
Both sexes							
TOTAL							
Major or other civil division A[1]							
Resident since birth							
Not resident since birth							
Resident less than 1 year							
Resident 1-4 years							
Resident 5-9 years							
Resident 10 or more years							
Duration of residence not stated							
Whether residence since birth not stated							
Major or other civil division B[1] (as for "Major or other civil division A")							
.							
.							
.							
Major or other civil division Z[1] (as for "Major or other civil division A")							
Male (as for "Both sexes")							
Female (as for "Both sexes")							

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country, (ii) each major civil division
(b) Place of usual residence: (paras. 2.20-2.24): each major or other civil division of the country
(c) Duration of residence in the major or other civil division (paras. 2.35-2.37): since birth; not since birth - resident for: less than 1 year, 1-4 years, 5-9 years, 10 or more years, number of years not stated, not stated whether resident in major or other civil division since birth (for additional categories needed if tabulation is prepared on the basis of the population present in each area at the time of the census, see outline of tabulation P1.6 above)
(d) Place of previous residence (paras. 2.38-2.39): each major or other civil division of the country; foreign country; not stated
(e) Sex (para. 2.86): male; female

Data on the sources and direction of migration between civil divisions during a specified period and on the age composition of the migrants from a series of censuses make it possible to assess changes in the phenomena measured for comparable lengths of time. It is therefore useful for preparing estimates of the future population of civil divisions, which are needed for the purposes stated in the use of tabulation P1.6. Unit of observation and classifications are the same as in the above-mentioned table.

[1] Name of major or other civil division.

Group 2. Tabulations dealing with household characteristics

P2.1 Population in households, by relationship to head or other reference member of household, marital status and sex, and size of institutional population

Geographical division , relationship to head or other reference member of household, and sex	**Total**	*Marital status*					
		Single	*Married*	*Widowed*	*Divorced*	*Separated*	*Not stated*
TOTAL POPULATION							
Male							
Female							
All households							
Male							
Female							
Head or other reference member							
Male							
Female							
Spouse							
Male							
Female							
Child							
Male							
Female							
Spouse of child							
Male							
Female							
Grandchild or great-grandchild							
Male							
Female							
Parent or parent of spouse							
Male							
Female							
Other relative							
Male							
Female							
Domestic employee							
Male							
Female							
Other person not related to the head or other reference member							
Male							
Female							
Not stated							
Male							
Female							
Institutional population							
Male							
Female							
Not stated whether or not living in a household							

Population included: total population, including persons living alone (one-person households)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Relationship to head or other reference member of household (paras. 2.67-2.76): head or other reference member; spouse; child; spouse of child; grandchild or great-grandchild; parent or parent of spouse; other relative; domestic employee; other person not related to the head or other reference member; not stated
(c) Institutional population (paras. 1.330-1.331): total number
(d) Marital status (paras. 2.96-2.103): single, married, widowed, divorced, separated, not stated
(e) Sex (para. 2.86): male; female

Data for the study of the distribution of individuals within households serve to indicate the relationship among members of households, particularly for information on the prevalence of multigenerational households and of households consisting of unrelated individuals. Marital status is also useful in the study of family living arrangements. Comparison of these data with similar data from an earlier census can provide information on changing patterns of household composition and of some of the characteristics of members of the household, and for the preparation of projections of the number of households.

P2.2 Population in households, by household status, age and sex, and institutional population by age and sex *

Geographical division, category of population, position in household	**Total**	*Sex and age*						
		Both sexes (age in years)					*Male*	*Female*
		0-4	*5-9*	*...*	*85 and over*	*Not stated*	*(as for both sexes)*	*(as for both sexes)*
Total population								
Person in a household with at least one family nucleus								
Husband								
Wife								
Lone mother								
Lone father								
Child living with both parents								
Child living with lone mother								
Child living with lone father								
Not a member of a family nucleus								
Living with relatives								
Living with non-relatives								
Person in a household with no family nucleus								
Living alone								
Living with others								
Living with sibling(s)								
Living with other relative(s)								
Living with non-relative(s)								
Institutional population								

Population included: total population
Classifications:
(a) Geographical divisions (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Household status (para. 2.84): husband; wife; lone mother; lone father; child living with both parents; child living with lone mother; child living with lone father; not a member of a family nucleus, distinguishing living with relatives, and living with non-relatives
(c) Sex (para. 2.86): male; female
(d) Age (para. 2.87-2.95): 0-4 years; 5-9 years; ... five-year age groups up to 80-84 years; and 85 years and over; not stated
(e) Institutional population (paras. 1.330-1.331): total number

This tabulation provides information on the extent to which persons live with relatives and non-relatives. The classification by age makes it possible to study specific population groups of interest such as dependent children, youth and the elderly, while disaggregation by sex allows gender aspects to come into focus.

* This tabulation can also be compiled for family status, and also by marital status.

P2.3 Head or other reference members of households, by age and sex; and other household members, by age and relationship to head or other reference member

Geographical division, age and sex of head or other reference member, and age of other household members	**Head or other reference member** [1]	*Relationship of other household members*								
		Total	*Spouse*	*Child*	*Spouse of child*	*Grand-child or great-grand-child*	*Parent or parent of spouse*	*Other relative*	*Person not related*	*Not stated*
Both sexes TOTAL										
Under 25 years Age of other household members Under 15 15-19 20-24 ... 80-84 85 and over Not stated										
25-29 years Age of other household members (as for "Under 25 years") *30-34 years* Age of other household members (as for "Under 25 years") ... *80-84 years* Age of other household members (as for "Under 25 years") *85 years and over* Age of other household members (as for "Under 25 years") *Age not stated* Age of other household members (as for "Under 25 years")										
Male (as for "Both sexes")										
Female (as for "Both sexes)										

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Relationship to head or other reference member of household (paras. 2.67-2.76): head or other reference member; spouse; child; spouse of child; grandchild or great-grandchild; parent or parent of spouse; other relative; domestic employee; other person not related to the head or other reference member; not stated
(c) Age of head or other reference member of household (paras. 2.87-2.95): under 25 years; 25-29; 30-34; ...; 80-84; 85 and over; not stated
(d) Age of other household members (paras. 2.87-2.95): under 15 years; 15-19; 20-24; 25-29; 30-34; ... ; 80-84; 85 and over; not stated
(e) Sex (para. 2.86): male; female

Data on the age of the head or other reference member of the household and of other household members, classified by their relationship to the head or other reference member, provide additional information for the purposes stated in the use of tabulation P2.1 and for the study of the prevalence of multigenerational households.

[1] Including persons living alone (one-person households).

P2.4 Households, population in households and number of family nuclei, by size of household

Geographical division and size of household	**Total**		*Households with indicated number of family nuclei*						*Number of family nuclei*
	House-holds	**Popu-lation**	*0*	*1*	*2*	*3*	*4 or more*	*Not stated*	
ALL HOUSEHOLDS									
Households consisting of									
1 person									
2 persons									
3 persons									
4 persons									
5 persons									
6 persons									
7 persons									
8 persons									
9 persons									
10 persons or more									
Not stated									

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and separately, the number of households of each size and the aggregate population by size of household
(c) Number of family nuclei (paras. 2.78-2.79): none; one; two; three; four or more; not stated; and separately, the aggregate number of family nuclei

Information on the number and size of households and on changes in the rate of household formation is needed by the planners for, and suppliers of, many goods and services, for which the demand is related to households rather than to individuals. Agencies dealing with housing problems need these data for the determination of current and projected rates of household formation, on the basis of which the number and size of new housing units required can be estimated. This tabulation can provide information needed to plan new sample surveys, and to design the sample that will be used, as well as comparative data for estimating the accuracy of some of the survey results. Information on household structure in terms of number of family nuclei in the household is needed for studies of households formation, projections of numbers of households and estimates of potential housing needs. Information from a series of censuses is very useful for the study of the disintegration of the households consisting of several family nuclei in countries where this pattern of living is changing.

P2.5 Households and population in households, by size and type of household

Geographical division and size of household	**Total**		*Type of household*									
			One	*Nuclear*		*Extended*		*Composite*		*Unknown*	
	House-holds	**Popu-lation**	*person house-holds*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*
ALL HOUSEHOLDS											
Households consisting of:											
1 person											
2 persons											
3 persons											
4 persons											
5 persons											
6 persons											
7 persons											
8 persons											
9 persons											
10 persons or more											
Not stated											

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i),(ii) and (iii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and separately, the number of households of each size and the aggregate population by size of household
(c) Type of household (paras. 2.82): one-person household; nuclear household; extended household; composite household; unknown; and, separately, the number of households of each type and aggregate population by type of household

Details on household composition take into account not only the number of family nuclei, but also household members who are not part of a family nucleus. Furthermore, they set forth the relationship, if any, between the family nuclei in multinuclear households and between any nuclei and other members of the household. It is useful for in-depth examination of the demographic and social structure of households, which is essential for the formulation of measures designed to improve family living conditions.

P2.6 Multi-person households and population in such households, by type and size of household

Geographical division and type of household	**Total**		*Households and population in households consisting of*									
	Multi-person households	**Population in multi-person households**	*2 persons*		*3 persons*		*...*	*10 persons or more*		*Not stated*	
			Households	*Population*	*Households*	*Population*	*...*	*Households*	*Population*	*Households*	*Population*
TOTAL											
Nuclear household											
Extended household											
One family nucleus and related persons											
Two or more related family nuclei without any other person											
Two or more related family nuclei and related persons											
Related persons without any family nuclei											
Composite household											
One family nucleus, related and non-related persons											
One family nucleus and non-related persons											
Two or more related family nuclei, related and non-related persons											
Two or more related family nuclei and non-related persons											
Two or more non-related family nuclei with or without any other persons											
Related persons without any nuclei and non-related persons											
Non-related persons											
Unknown											

Population included: all members of multi-person households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Type of household (para. 2.82): nuclear household; extended household consisting of (i) one family nucleus and related persons, (ii) two or more related family nuclei without any other person, (iii) two or more related family nuclei and related persons, (iv) related persons without any family nuclei; composite household consisting of (i) one family nucleus, related and non-related persons, (ii) one family nucleus and non-related persons, (iii) two or more related family nuclei, related and non-related persons, (iv) two or more related family nuclei and non-related persons, (v) two or more non-related family nuclei with or without any other persons, (vi) related persons without any nuclei and non-related persons, (vii) non-related persons; unknown.
(c) Size of household (paras. 2.73-2.75): 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and, separately, the number of households of each size and the aggregate population by size of household

This tabulation provides details on household composition, taking into account not only the number of family nuclei, but also household members who are not part of a family nucleus. Furthermore, it sets forth the relationship, if any, between the family nuclei in multinuclear households and between any nuclei and other members of the household. It gives a more complete indication of household structure. It is particularly useful for countries with complex household structures. Hence, it is useful for in-depth examination of the demographic and social structure of households.

P2.7 Households and population in households, by size of household and number of members under ... years of age[1]

Geographical division and size of household	**Total**		*Households with indicated number of children*											
	House-holds	**Popu-lation**	*0*		*1*		*...*	*4*		*5 or more*		*Not stated*		
			House-holds	*Popu-lation*	*House-holds*	*Popu-lation*	*...*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*
ALL HOUSEHOLDS														
Households consisting of:														
1 person														
2 persons														
3 persons														
4 persons														
5 persons														
6 persons														
7 persons														
8 persons														
9 persons														
10 persons or more														
Not stated														

Population included: all persons of multi-person households
Classifications:
(a) Geographical division (paras 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Size of household (paras 2.73-2.75): 1 person, 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and, separately, the number of households of each size and the aggregate population by size of household
(c) Number of children: *none; 1; 2; 3; 4; 5 or more; not stated*

This tabulation refers to all members of households; data are then disaggregated by geographical division. It could supplement tabulations on economic characteristics by showing the number of economically active persons and the number of household members below the age at which economic activity usually begins. With these data, the ratio of active household members to non-active members in the working ages and the ratio of active members to those below working age can be separately computed according to household size. Data on the number of children below working age, by size of household, are also useful in planning for the meeting of household needs and for household welfare measures.

[1] The minimum age adopted by the country for enumerating the economically active population.

2.8 Household population under 18 years of age, by age and sex and by whether living with both parents, mother alone, father alone, or neither parent

Population aged under 18 years, by age and sex	**Total**	*Population aged under 18 years by whether*				
		Living with both parents	*Living with mother alone*	*Living with father alone*	*Living with neither parent*	*Not stated*
Both sexes*						
Total						
0-4 years						
5-9 years						
10-14 years						
15-17 years						
Males						
Total						
0-4 years						
5-9 years						
10-14 years						
15-17 years						
Females						
Total						
0-4 years						
5-9 years						
10-14 years						
15-17 years						

Population included: population under 18 years of age
Classifications:
(*a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)*
(b) Living arrangements: living with both parents; living with mother alone; living with father alone; living with neither parent; not stated
(c) Age (paras. 2.87-2.95): 0-4 years; 5-9 years; 10-14 years; 15-17 years; not stated
(d) Sex (para. 2.86): male; female

This tabulation provides information that can be used to study the extent to which children live with their mothers and fathers, one or neither parent. This information can also be used in studies of children's well-being and also of child-rearing responsibility and how it is shared between mothers and fathers. The classifications by age and also by sex are important for studying age and gender differences on this topic.

* Other age groupings may be used, and if possible data should be shown by single years of age.

P2.9 Households and population in households, by sex, by size and type of household and number of persons 60 years of age and over

Population in household by type of household, sex, number of persons 60 years of age and over*	**Total**		*Size of household*										
	House-holds	**Popu-lation**	*1*		*2*		*3*		*...*	*10+*		*Not stated*
			House-holds	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*...*	*House-holds*	*Popu-lation*	
Total population												
None												
One person												
0												
1												
Nuclear												
0												
1												
2												
3+												
Extended												
0												
1												
2												
3+												
Composite												
0												
1												
2												
3+												
Males												
(As for "Total population")												
Females												
(As for "Total population")												

Population included: total households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish urban and rural for (i), (ii) and (iii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated
(c) Number of persons 60 years of age and over: none; 1 person; 2 persons; 3 or more persons
(d) Sex (para. 2.86): male; female

Data on living arrangements for the elderly, one of the specific population groups, are important for assessing their well-being in terms of whom they live with. Tabulations provide material for the study of the distribution of the elderly by size and type of households, with particular reference to those living alone, which can be used to assess the availability of other persons in the household for taking care of the elderly.

* The amount of detail shown by type for nuclear, extended and composite household (family) should be modified to suit national circumstances.

Group 3. Tabulations dealing with demographic and social characteristics

P3.1 Population, by single years of age and sex

Geographical division and age (in years)	**Both sexes**	*Sex*	
		Male	*Female*
ALL AGES			
Under 1			
1			
2			
3			
4			
1-4			
5			
6			
7			
8			
9			
5-9			
.			
.			
.			
99			
100 and over			
Not stated			

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii). (If it is considered inadvisable to present the single-year classification for any particular geographical division, at least the age categories "under 1", "1-4" and the five-year age groups should be shown for that division.)
(b) Age (paras. 2.87-2.95): under 1 year; 2 years; 3 years; 4 years; 5 years; 6 years; 7 years; ... single years to 99; 100 years and over; not stated (distinguish between subtotals: 1-4 years, five-year age groups 5-9, 10-14, ... 80-84, and 85 and over)
(c) Sex (para. 2.86): male; female

Information on the detailed age and sex structure of the population is needed for actuarial analysis of the probability of survival and of related life-table functions. As populations age, the probability of survival to advanced age increases and the proportion of persons at older ages expands; thus it is important to present detailed age data up to 100 years. It is also essential for the evaluation of the accuracy of census age data for the population. From this tabulation, it is possible to reconstitute any selected age grouping (for example, the school-age population and the population of voting age or groups used in the calculation of food requirements) without interpolating from population classified by five-year age groups.

The five-year age groups are essential for many purposes, including the analysis of the factors of population change, the preparation of current population estimates and of projections, the calculation of age-specific vital rates, analysis of the factors of labour supply and the study of problems of dependency. The grouped age classification is recommended because it is appropriate to cross-classification by other variables. The tabulation provides a convenient summary of the total, urban and rural population by the various geographical areas according to the age groups used in most of the other recommended tabulations. The tabulation should present reported rather than adjusted age data.

P3.2 Population, by marital status, age and sex

Geographical division, sex and marital status	**All ages**	*Age (in years)*									
		Under 15	*15*	*16*	*...*	*29*	*30-34*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes											
TOTAL											
Single											
Married											
Widowed											
Divorced											
Separated											
Not stated											
Male (as for "Both sexes")											
Female (as for "Both sexes")											

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-259): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i) and (ii)
(b) Marital status (paras. 2.96-2.103): single; married; widowed; divorced; separated; not stated. (Persons whose only, or latest marriage, has been annulled may be classified in a separate category or classified according to their marital status before the annulled marriage took place.)
(c) Age (paras. 2.87-2.95): under 15 years; 15 years; 16 years; ... single years up to 29; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

This tabulation provides material for the study of age at marriage, of the frequency of celibacy, widowhood and divorce and of the effect of these factors on population growth through their influence on fertility. A simple measure of the influence of nuptiality on fertility is the comparison of the ratio of children to all women of childbearing age with the ratio of children to those women who have ever been married. The data are also required for the preparation of nuptiality tables. A refinement of this tabulation, showing heads or other reference members of households by marital status, age and sex, can be used together with the present tabulation to obtain age-sex marital status-specific rates for the head or other reference member. Application of these rates to the projected population by age, sex and marital status provides projected numbers of households.

P3.3 Population, by religion, age and sex

Geographical division, sex and religion	**All ages**	*Age (in years)*						
		Under 5	*5-9*	*10-14*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes								
TOTAL								
[Each religion (and sect, if desired) of significance in the country]								
All others								
No religion								
Not stated								
Male (as for "Both sexes")								
Female (as for "Both sexes")								

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) Religion (paras. 2.109-2.111): each religion (and sect, if desired) of significance in the country; all others; no religion; not stated
(c) Age (paras. 2.87-2.95): under 5 years; 5-9 years; ... five-year age groups up to 80-84 years; 85 years and over; not stated
(d) Sex (para. 2.86): male; female

The relative size and age-sex distribution of the different religious groups in the country provides information on countries where there are significant religious differences among the population. These data are useful for further investigation of the interrelationship between these characteristics and religious belief or affiliation.

P3.4 Population, by language (mother tongue, usual language or ability to speak one or more languages), age and sex

Geographical division, sex and language	**All ages**	*Age (in years)*						
		Under 5	*5-9*	*10-14*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes								
TOTAL								
(Each language or combination of languages for which separate information is required)								
All others								
Not stated								
Male (as for "Both sexes)								
Female (as for "Both sexes")								

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality
(b) Language (paras. 2.112-2.115): each language or combination of languages for which separate information is required; all others; not stated
(c) Age (paras. 2.87-2.95): under 5 years; 5-9 years; ... five-year age groups up to 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

Data on mother tongue are useful as an index to national and/or ethnic groups, whose existence is often reflected in the mother tongue of individuals long after those persons have assimilated other customs of the majority of the country's population. Data on usual language provide a measure of the linguistic homogeneity or differences in the population. When combined with data on place of birth, they are particularly useful in the study of rates of assimilation of the foreign-born population, which can indicate the possible need for measures to encourage such assimilation. Information on ability to speak one or more designated languages is needed in connection with handling problems of communicating with and educating linguistic minorities. Such data are especially important in countries where more than one official language is recognized and decisions must be taken about the language to be used in schools, in official communications and so on. Tabulation of persons unable to speak the official language of the country, according to their usual language, is particularly useful in connection with planning for teaching the official language of the country to linguistic minorities.

P3.5 Population, by national and/or ethnic group, age and sex

Geographical division, sex and national and/or ethnic group	**All ages**	*Age (in years)*						
		Under 5	*5-9*	*10-14*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes								
TOTAL								
(Each national and/or ethnic group for which information is required)								
All others								
Not stated								
Male (as for "Both sexes)								
Female (as for "Both sexes")								

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) National and/or ethnic group (paras. 2.116-2.117): each group for which separate information is required, all others, not stated
(c) Age (paras. 2.87-2.95): under 5 years; 5-9 years; ... five-year age groups up to 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

For countries that are not ethnically homogeneous, this tabulation provides the basic information for a quantitative assessment of the relative size and age-sex distribution of the different national and/or ethnic groups. These data are the basis for further investigation of other characteristics of each group, which is needed in order to determine the variables connected with ethnic affiliation and to formulate policies designed to alleviate the social and economic handicaps affecting some of the groups.

Group 4. Tabulations dealing with fertility and mortality

P4.1 Female population 15 years of age and over, by age and number of children ever born alive by sex

Geographical division, age of females (in years) and sex of child	**Total**	*Female population with indicated number of children born alive*						*Total number of children ever born alive*
		0	*1*	*2*	*...*	*12 or more*	*Not stated*	
Total country								
CHILDREN, Both sexes								
TOTAL 15 years and over								
15-19								
20-24								
25-29								
30-34								
35-39								
40-44								
45-49								
50-54								
55-59								
60-64								
65-69								
70-74								
75-79								
80-84								
85 and over								
Not stated								
CHILDREN, Males								
(Age groups as above)								
CHILDREN, Females								
(Age groups as above)								

Population included: female population 15 years of age and over. (If the population included is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Age (paras. 2.87-2.95): 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(c) Sex (para. 2.86): male and female children ever born alive
(d) Number of children ever born alive (paras. 2.126-2.131): none; 1 child; 2 children; 3 children; 4 children; 5 children; 6 children; 7 children; 8 children; 9 children; 10 children; 11 children; 12 or more children; not stated; and, separately, the aggregate number of children ever born alive to women in each age category

Census data on fertility are particularly valuable for countries where birth registration statistics are lacking or deficient, because they can be used to estimate age-specific fertility rates, the total fertility rate, the crude incidence of births in the total population and other fertility indicators. In addition, they are useful as a supplement to satisfactory registration data, because they provide a summary of the lifetime fertility of the female population. The principal measures of fertility that can be derived from this tabulation are *(a)* the gross fertility ratio (average number of children ever born alive to women of childbearing age and over), *(b)* the average number of children ever born alive by sex to women who have reached the end of the childbearing period (in other words, 50 years of age and over), *(c)* the proportion of women who have had no children by the end of their reproductive life, *(d)* the average number of children born per woman who has already borne at least one child specified by sex and *(e)* cumulative average gross fertility ratios by age groups.

The data also provide the base for the computation of birth rates specific for parity by sex. The use of information from a series of censuses makes it possible to identify cohorts of women and to study their reproductive patterns as they advance from one age group to another.

P4.2 Female population 15 years of age and over in their first marriage/union or married only once, by five-year duration of marriage/union group and number of children ever born alive by sex

Geographical division and duration of marriage (in years)	**Total number of females**	*Female population with indicated number of children ever born alive*								*Total number of children ever born alive*
		0	*1*	*2*	*...*	*10*	*11*	*12 or more*	*Not stated*	
Total country										
CHILDREN, Both sexes										
TOTAL										
0-4 years										
5-9										
10-14										
15-19										
20-24										
25-29										
30-34										
35 and over										
Not stated										
CHILDREN, Males										
(Age groups as above)										
CHILDREN, Females										
(Age groups as above)										

Population included: female population 15 years of age and over in their first marriage/union or married only once. (If the population included is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Duration of marriage/union: 0-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35 years and over; not stated.
(c) Sex (para. 2.86): male and female children ever born alive
(d) Number of children ever born alive (paras. 2.126-2.131): none; 1 child; 2 children; 3 children; 4 children; 5 children; 6 children; 7 children; 8 children; 9 children; 10 children; 11 children; 12 or more children; not stated; and, separately, the aggregate number of children ever born alive to women in each age category

The data are used to estimate fertility levels and patterns. This tabulation may be compiled in countries where experience has demonstrated that there has been substantial age-misreporting in past population censuses, which distorts fertility/mortality estimates based on children ever born and children living by age of women. This tabulation provides, for women in their first marriage, and for widowed, divorced and separated women who have had only one marriage, the data needed for computing all the measures of fertility described in connection with table P4.1. In countries where most births are legitimate, the tabulation is particularly useful for studies of trends in legitimate births, in association with information derived from current civil births, because of the information it provides on years of exposure to the risk of pregnancy.

P4.3. Female population 15 years of age and over, by age and number of children living (or dead) by sex

Geographical division and age (in years)	**Total number of females**	*Female population with indicated number of children living (or dead)*								*Total number of children living (or dead)*
		0	*1*	*2*	*...*	*10*	*11*	*12 or more*	*Not stated*	
Total country										
CHILDREN, Both sexes										
TOTAL 15 years and over										
15-19										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59										
60-64										
65-69										
70-74										
75-79										
80-84										
85 and over										
Not stated										
CHILDREN, Males										
(Age groups as above)										
CHILDREN, Females										
(Age groups as above)										

Population included: female population 15 years of age and over. (If the population included is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Age (paras. 2.87-2.95): 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; 85 years and over; not stated
(c) Sex (para. 2.86): male and female children living (or dead)
(d) Number of children living (paras. 2.132-2.133): none; 1 child; 2 children; 3 children; 4 children; 5 children; 6 children; 7 children; 8 children; 9 children; 10 children; 11 children; 12 or more children; not stated; and, separately, the aggregate number of children living (or dead) to women in each age category

These data are most useful for countries where death registration statistics are lacking or deficient. Census estimates of fertility and mortality can be derived directly or using generally more reliable indirect techniques. Two measures of fertility can be derived from the tabulations. These are *(a)* the net fertility ratio (average number of children surviving to women of childbearing age and over) and *(b)* cumulative average net fertility ratios by age groups. Child mortality rates can be estimated for each sex. Some measure of mortality in a generation can also be obtained by comparison of the net fertility ratio derived from this tabulation with the gross fertility ratio, which can be derived from tabulation P4.8. This measure is particularly valuable where death rates estimated from civil registration data are not available or are defective. In addition to the above-mentioned measures of fertility and mortality, the tabulation also provides information for the analysis of family composition by number of living offspring by sex. These data cannot be obtained from birth registration statistics; neither can they be obtained from the census information on relationship to head of household because census families comprise only those persons who live and are enumerated within the same household; thus they do not necessarily include all the living (or dead) children of the woman enumerated.

P4.4 Female population, by age at first birth, by current age and residence

Geographical division, current age (in years)	**Females with no births**	*Female population by age at first birth*								*Median age at first birth*[1]
		Total	*Less than 15 years*	*15-17*	*18-19*	*20-21*	*22-24*	*25 and over*	*Not stated*	
TOTAL COUNTRY										
Less than 15 years										
15 years and over, total										
15-19 years										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50 years and over										
Not stated										
URBAN										
Age groups (Same as above)										
RURAL										
Age groups (Same as above)										

Population included: female population 15 years of age and over. (If the investigation is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) Place of residence (para. 2.20-2.24): (i) urban; (ii) rural
(c) Age at first birth (para. 2.143): less than 15 years; 15-17 years; 18-19 years; 20-21 years; 22-24 years; 25 years and over; not stated; and, separately, the total number of females with at least one child and the total number of females without children; and median age at first birth for each category

The beginning of the childbearing period is an important determinant of fertility levels. Postponement of first births, reflecting a rise in age at marriage, can make an important contribution to overall fertility decline. From this table, the distribution of females by age at first birth by urban and rural background can be calculated. The urban/rural classification will lead to study of differentials with respect to the onset of childbearing.

[1] May not be possible to calculate because less than 50 per cent of females in this age group may not have had a birth at the initial age of the indicated age group.

P4.5 Median age at first birth, by current age of women, place of residence and educational attainment

Geographical division, place of residence, and educational attainment	Median age at first birth by current age of females									
	Total	15-19 years[1]	20-24	25-29	30-34	35-39	...	80-84	85 and over	Not stated
TOTAL COUNTRY										
Urban residence										
Rural residence										
EDUCATIONAL ATTAINMENT										
No schooling										
Primary level of education:										
Started but not completed										
Primary level of education completed										
Secondary level of education:[2]										
First cycle started but not completed										
First cycle completed										
Second cycle started but not completed										
Second cycle completed										
Level not stated										

Population included: female population 15 years of age and over with at least one child born alive. (If the population included is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(*a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division*
(b) Place of residence (paras. 2.20-2.24): (i) urban; (ii) rural
(c) Educational attainment (paras. 2.153-2.157): no schooling; primary level started but not completed; primary level completed; first cycle of secondary level started but not completed; first cycle of secondary level completed; second cycle of secondary level started but not completed; second cycle of secondary level completed (regardless of any education at the third level); level not stated
(d) Age (paras. 2.87-2.95): 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 year; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated

The age at which childbearing starts is an important demographic indicator. If this indicator increases, then a decline in fertility is likely to occur. The median age at first birth, which is the age by which 50 per cent of women have had their first child for any group of women, is suggested for comparison purposes by background characteristics of women: urban; rural; educational attainment.

[1] Median age may not be calculated for this group because less than 50 per cent of women in the age group may have had a first child at 15 years of age.

[2] Regardless of any education at the third level.

P4.6 Mothers 15 years of age and over with at least one child under 15 years of age living in the same household, by age of mother and by sex and age of children

Geographical division and age of mother (in years)	**Total number of mothers**	*Children by age (in years) and sex*							
		Total under 15 years	*Under 1 year*	*1*	*2*	*...*	*13*	*14*	*Not stated*
Total country b/									
CHILDREN, Both sexes									
TOTAL 15 years and over									
15									
16									
17									
18									
19									
15-19									
20									
21									
22									
23									
24									
20-24									
25									
26									
27									
28									
29									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54									
55-59									
60-64									
65 and over									
Not stated									
CHILDREN, Males									
(Age groups as above)									
CHILDREN, Females									
(Age groups as above)									

Population included: mothers 15 years of age and over with at least one child under 15 years of age living in the same household. (If the mothers included are restricted to ever-married mothers, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Age of mothers (paras. 2.143): 15 years; 16 years; 17 years ... single years to 29 (with subtotals for 15-19, 20-24 and 25-29 years); 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65 years and over; not stated
(c) Sex (para. 2.86): male and female children
(d) Age of children living with their natural mother: under 1 year; 1 year; 2 years; 3 years; 4 years; 5 years; 6 years; 7 years; 8 years; 9 years; 10 years; 11 years; 12 years; 13 years; 14 years; not stated

This table refers to the female population 15 years of age and over (shown by single years from 15 to 29 years and by five-year age groups), with at least one child under 15 years of age living in the same household (shown by single years of age) distributed by geographical divisions and place of residence. This tabulation provides data to estimate fertility by the "own-children" method, as explained in paragraph 2.122.

P4.7 Female population ... to 49 years of age, by age, number of live births, by sex within the 12 months preceding the census, and deaths among these live births, by sex

Geographical division, age of females (in years) and sex of children	**Total females ...[1] to 49 years of age**	*Live births in past 12 months*	
		Total	*Number of which have died*
Total country			
BIRTHS, both sexes			
Total			
Under 15[2]			
15-19			
20-24			
25-29			
30-34			
35-39			
40-44			
45-49			
Not stated			
Males (Age groups as above)			
Females (Age groups as above)			

Population included: female population between the minimum age limit adopted by the country for collecting information on current fertility and 49 years of age (If the population is restricted to ever-married females, this fact should be clearly stated.)
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Live births by sex within the 12 months preceding the census and children who have died among them by sex: total number; total number of male births; total number of female births
(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; not stated

This tabulation refers to female population between the minimum age limit adopted by the country for collecting information on current fertility and 49 years of age distributed among geographical divisions. It also provides data to estimate current age specific fertility rates and current infant mortality rates by sex, particularly as a supplement to vital rates or as an estimation for these rates where birth and death registration is defective or inadequate.

[1] The minimum age adopted by the country for census questions on current fertility.

[2] All ages between the minimum age adopted by the country for census questions on current fertility and 14, 13, 12, 11 or 10 years, if the minimum age is under 15 years.

P4.8 Female population ... to 49 years of age by age, number of live births by sex within the 12 months preceding the census and educational attainment

Geographical division, age of women (in years) and educational attainment	**Total females ...[1] to 49 years of age**	*Live births in past 12 months*		
		Total	*Males*	*Females*
Total country				
All levels of education				
TOTAL, ... [1] and over				
Under 15 years[2]				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
Not stated				
No schooling (age groups as above)				
Primary level of education:				
Started but not completed				
(Age groups as above)				
Primary level of education completed				
(Age groups as above)				
Secondary level of education:[3]				
First cycle started but not completed				
(Age groups as above)				
First cycle completed				
(Age groups as above)				
Second cycle started but not completed				
(Age groups as above)				
Second cycle completed				
(Age groups as above)				
Level not stated				
(Age groups as above)				

Population included: female population between the minimum age limit adopted by the country for collecting information on current fertility and 49 years of age (If the population is restricted to ever-married females, this fact should be clearly stated.)

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Live births by sex within the 12 months preceding the census: total number; total number of male births; total number of female births

(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; not stated

(d) Educational attainment (paras. 2.153-2.157): no schooling; primary level started but not completed; primary level completed; first cycle of secondary level started but not completed; first cycle of secondary level completed; second cycle of secondary level started but not completed; second cycle of secondary level completed (regardless of any education at the third level); level not stated

This tabulation refers to female population between the minimum age limit adopted by the country for collecting information on current fertility and 49 years of age distributed among geographical divisions. It also provides data for investigating differentials in current age-specific fertility rates and current infant mortality rates by the educational attainment of mothers. It is particularly important as a supplement to vital rates or as an estimation for these rates where birth and death registration is defective or inadequate.

[1] The minimum age adopted by the country for census questions on current fertility.

[2] All ages between the minimum age adopted by the country for census questions on current fertility and 14, 13, 12, 11 or 10 years, if the minimum age is under 15 years.

[3] Regardless of any education at the third level.

P4.9 Deaths, by sex and age[1] within the 12 months preceding the census; and total population, by age and sex

Geographical division and age (in years)	*Deaths in the past 12 months*			*Total population*		
	Total	*Male*	*Female*	**Total**	*Male*	*Female*
Total country						
TOTAL						
Under 1 year						
1-4						
5-9						
10-14						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
50-54						
55-59						
60-64						
65-69						
70-74						
75-79						
80-84						
85 and over						
Not stated						

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Deaths by sex within the 12 months preceding the census (paras. 2.137-2.138: total number of deaths; male deaths; female deaths
(c) Sex (paras. 2.86): total; male; female
(d) Age (paras 2.87-2.95): under 1 year; 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years;and 85 and over; not stated

These data are used to estimate levels and patterns of recent mortality in combination with data on the population by age and sex.

[1] Collected from the head of the household or reference person in the household.

P4.10 Population with mother alive (or dead), by age

Geographical division, and age (in years)	**Total population**	*Status of natural mother*[1]		
		Living	*Dead*	*Not stated*
Total country				
TOTAL				
Under 1 year				
1-4				
5-9				
10-14				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59				
60-64				
65-69				
70-74				
75-79				
80-84				
85 and over				
Not stated				

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each intermediate division. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Mother alive (or dead) (paras. 2.139-2.141): natural mother living; natural mother dead; not stated
(c) Sex (para. 2.86): total; male; female
(d) Age (paras. 2.87-2.95): under 1 year; 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated

This tabulation provides data for estimating the levels and patterns of adult female mortality, particularly in countries where death registration is defective or non-existent. The tabulation may be extended to estimate adult male mortality from data on survival of fathers.

[1] Tabulation should be based on responses of the eldest surviving child of its mother only (paras. 2.139-2.141) and this fact should be clearly stated.

Group 5. Tabulations dealing with educational characteristics

P5.1 Population ... years of age a/ and over not attending school, by educational attainment, age and sex

Geographical division, sex and educational attainment	**Total population ... [1] years of age and over**	*Age (in years)*					
		...[1] - 14	*15-19*	*20-24*	*....*	*85 and over*	*Not stated*
Both sexes							
TOTAL							
No schooling							
Primary education:							
Grade 1							
Grade 2							
...							
Grade not stated							
Secondary education, 1st cycle:							
Grade 1							
Grade 2							
...							
Grade not stated							
Secondary education, 2nd cycle							
Grade 1							
Grade 2							
...							
Grade not stated							
Higher education							
Grade 1							
Grade 2							
...							
Grade not stated							
Not classifiable by grade and by level/category of education							
Level/category of education not stated							
Male (as for "Both sexes")							
Female (as for "Both sexes)"							

Population included: all persons at or above the usual age for entrance into school who are not attending school

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i) and (ii)

(b) Educational attainment (paras. 2.153-2.157): no schooling; primary education by single grades and grade not stated; secondary education, first cycle: by single grades and grade not stated; secondary education, second cycle: by single grades and grade not stated; higher education: by single grades and grade not stated; not classifiable by grade and by level/category of education; level/category of education not stated

(c) Age (paras. 2.87-2.95): ... 14 years and over; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; 85 years and over; not stated

(d) Sex (para. 2.86): male; female

By showing the distribution of human resources by educational attainment in a country, this tabulation provides an important indication of the capacity and potential of the nation for economic, social and cultural development. When compared with current and anticipated needs for educated manpower by various sectors, types and levels of economic activities, it can guide the making of more effective policies and coordinated plans for the development of different levels/categories of education in close relation to development programmes.

[1] The lower age-limit should be the usual age for entrance into school.

P5.2 Population 5 to 29 years of age attending school, by educational attainment, age and sex

Geographical division, school attendance and level of education	*Sex and age (in years)*							
	Both sexes						*Male (as for "Both sexes")*	*Female (as for "Both sexes")*
	Total 5[1] to 29[2]	*5-9*	*10-14*	*...*	*25-29*	*Not stated*		
Both sexes								
TOTAL								
No schooling								
Primary education:								
Grade 1								
Grade 2								
...								
Grade not stated								
Secondary education, 1st cycle:								
Grade 1								
Grade 2								
...								
Grade not stated								
Secondary education, 2nd cycle								
Grade 1								
Grade 2								
...								
Grade not stated								
Higher education								
Grade 1								
Grade 2								
...								
Grade not stated								
Not classifiable by grade and by level/category of education								
Level/category of education not stated								
Male (as for "Both sexes")								
Female (as for "Both sexes")								

Population included: all persons between the usual age for entrance into school and 29 years of age

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i) and (ii)

(b) Educational attainment (paras. 2.153-2.157): primary education by single grades and grade not stated; secondary education, first cycle: by single grades and grade not stated; secondary education, second cycle, general education: by single grades and grade not stated; secondary education, second cycle, technical/vocational education: by single grades and grade not stated; higher education: by single grades and grade not stated; not classifiable by grade and by level/category of education; level/category of education not stated

(c) Age (paras. 2.87-2.95): 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; not stated (but under 29 years). Countries may also find it useful to prepare tabulation by single years of age

(d) Sex (para. 2.86): male; female

Data on young persons attending school by age, level/category and grade of education attended can provide not only detailed information on the age-grade correspondence in school attendance, but also approximations of a number of indicators of participation in education, such as: *(a)* total net enrolment ratio, *(b)* net enrolment ratios by level/category of education, *(c)* age-specific enrolment ratios (irrespective of grade) and *(d)* grade-specific net enrolment ratios. These indicators are particularly important for obtaining a more precise assessment of participation (and non-participation) in education than those based on gross enrolment ratios derived from school statistics. It is also useful for checking the age-grade correspondence in school attendance and for identifying over-aged and under-aged enrolment.

[1] The lower age-limit should be the usual age for entrance into school.

[2] If it is desired to include older persons attending school, the upper age-limit should be extended as appropriate and the necessary additional categories should be added to the age classification.

P5.3 Population 5 to 29 years of age, by school attendance, single years of age and sex

Geographical division, sex and age (in years)	**Total**	*School attendance*		
		Attending school	*Not attending school*	*Not stated*
Both sexes				
TOTAL				
5 [1]				
6				
7				
8				
9				
10				
11				
12				
13				
14				
.				
.				
.				
29 [2]				
Not stated (but under 30)[2]				
Male				
(as for "Both sexes")				
Female				
(as for "Both sexes")				

Population included: all persons between the usual age for entering the first level of school and 29 years of age
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) School attendance (paras. 2.150-2.152): attending school; not attending school; not stated
(c) Age (paras. 2.87-2.95): 5 years; 6 years; 7 years; 8 years; 9 years; 10 years; 11 years; 12 years; 13 years; 14 years; 15 years; 16 years; 17 years; 18 years; 19 years; 20 years; 21 years; 22 years; 23 years; 24 years; 25 years; 26 years; 27 years; 28 years; 29 years; not stated (but under 30)
(d) Sex (para. 2.86): male; female

Data on the classification of young persons attending and not attending school, by single years of age and sex, are essential for studies of the numerical relationship between the population of school age and the population actually in school. The proportion of the school-age population that is able to take advantage of the educational system is one of the first types of information required for the assessment of the adequacy of the educational system of a country. School enrolment statistics derived from institutional records are not adequate, in many countries, for providing an exact measure of total attendance or data on important characteristics of the school-going population, particularly age. Even countries with detailed, comprehensive statistics compiled from records of educational institutions can benefit from a periodic assessment of the accuracy of these statistics by comparison with the census information on net school attendance.

[1] The lower age-limit should be the usual age for entrance into school.

[2] If it is desired to include older persons attending school, the upper age-limit should be extended as appropriate and the necessary additional categories should be added to the age classification.

P5.4 Population 10 years of age and over, by literacy, age and sex

Geographical division, sex and age (in years)	**Total**	*Literacy*		
		Literate	*Illiterate*	*Not stated*
Both sexes				
TOTAL 10[1] years and over				
10-14[1]				
TOTAL 15 years and over				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59				
60-64				
65-69				
70-74				
75-79				
80-84				
85 and over				
Not stated				
Male				
(as for "Both sexes")				
Female				
(as for "Both sexes")				

Population included: all persons 10 years of age and over
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division, (iii) each minor civil division. Distinguish between urban and rural for (i) , (ii) and (iii)
(b) Literacy (paras 2.145-2.149): literate; illiterate; not stated
(c) Sex (para. 2.86): male; female
(d) Age (paras. 2.87-2.95): total 10 years and over; 10-14 years; total 15 years and over; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; 85 years and over; not stated

Data on literacy provide one of the indicators of national levels of living and a measure of one of the factors in the national capacity for technological and cultural development; they are needed for tracing the progress in educational development of past generations and projecting future trends. In countries where the adult population is largely illiterate, the tabulation is of immediate use in planning for adult literacy, particularly if the data are tabulated for local areas. In addition, these data serve as the denominator in the computation of vital rates differentiated by literacy used as a socio-economic variable, such as birth rates by literacy of mother, and marriage and divorce rates by literacy of husband and wife.

[1] Where it is felt that the literacy rate for the age group 10-14 years may be misleading in international comparison, the lower age-limit for the tabulation may be 15 years.

P5.5 Population that has successfully completed a course of study at the third level of education, by educational qualifications, age and sex

Geographical division, sex and educational qualifications	**Total population that has successfully completed a course of study at the third level of education**	Age (in years)							
		Under 20	20-24	25-29	30-34	...	80-84	85 and over	Not stated
Both sexes									
ALL FIELDS OF EDUCATION (Classification of degrees, diplomas, certificates and so forth adopted by the country)									
General [1]									
Teacher training [1]									
Education science and teacher training [1]									
Fine and applied arts [1]									
Humanities [1]									
Religion and theology [1]									
Social and behavioural sciences [1]									
Commercial and business administration [1]									
Business administration and related programmes [1]									
Law and jurisprudence [1]									
Natural science [1]									
Mathematical and computer science [1]									
Medical diagnostic and treatment [1]									
Medical science [1]									
Trade, craft and industrial [1]									
Engineering [1]									
Architectural and town planning [1]									
Agricultural, forestry and fishing [1]									
Home economics (domestic science) [1]									
Transport and communications [1]									
Service trades [1]									
Mass communication and documentation [1]									
Other fields [1]									
Not stated [1]									
Male (as for "Both sexes")									
Female (as for "Both sexes")									

Population included: all persons who have successfully completed a course of study at the third level of education
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality
(b) Educational qualifications (paras. 2.163-2.164): highest degree, diploma, certificate and so forth acquired and field of education
(c) Field of study (paras. 2.158-2.162)
(d) Age (paras. 2.87-2.95): under 20 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; 85 years and over; not stated
(e) Sex (para. 2.86): male; female

These data supplement the data from tabulation P5.1 by providing an important indicator of the nature of the skilled manpower available in the country. It allows estimates to be made of the stock and expected inflow of skilled manpower in different fields, for comparison with the skilled manpower needs of various sectors of the economy. The addition to the tabulation of a classification by occupation and by industry would furnish a useful supplement to tabulations on economic characteristics (group 6) by making information available on the extent to which specific skills are being used in the economic structure.

[1] As for "All fields of education".

P5.6 Population 15 years of age and over, by field of education, age and sex

Geographical division, sex and field of education	**Total population 15 years and over**	*Age (in years)*					
		15-19	*20-24*	*25-29*	....	*75 and over*	*Not stated*
Both sexes							
TOTAL, All fields of education							
General programmes							
Education							
Humanities and Arts							
Social sciences, Business and Law							
Science							
Engineering, Manufacturing and Construction							
Agriculture							
Health and Welfare							
Services							
Not known or unspecified							
Male							
(Same as for "Both sexes")							
Female							
(Same as for "Both sexes")							

Population included: all persons aged 15 years and over
Classifications :
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each principal locality. Distinguish between urban and rural for (i) and (ii)
(b) Field of education (paras. 2.158-2.162): The term "field of education" refers to the "broad groups of education" as presented in the most recent (1997) release of the International Standard Classification of Education (ISCED). For fields of education within the broad groups, refer to the latest release of UNESCO's ISCED
(c) Age (paras. 2.87-2.95): total 15 years and over; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; 85 and over; not stated (but 15 years and over)
(d) Sex (para. 2.86): male; female

Data on field of study provide an important indication of the areas of specialization of the adult population and more particularly of qualified human resources available in the country. They provide input for estimate and projections of the stock and expected new entrants into the labour market with different specialization which, when matched with the skills needed in various sectors of the economy, can help to establish more effective education, training and employment policies for optimum development and utilization of human resources. Data on field of study when cross-classified with occupation and industries can furnish valuable information on the extent to which the qualified human resources with specific skills are being utilized in the national economy.

Group 6. Tabulations dealing with economic characteristics

P6.1 Population ... [1] years of age and over, by usual (or current) activity status, marital status, age and sex

Geographical division, marital status, sex and age (in years)	**Total ...[1] years of age and over**	*Usual (or current) activity status*				
		Employed	*Unemployed*		*Not economically active*	*Not stated*
			Total	*Seeking work for the first time*		
Both sexes						
ALL AGES						
Under 15 [1]						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
50-54						
55-59						
60-64						
65-69						
70-74						
75 and over						
Not stated						
Single (as for "All ages")						
Married (as for "All ages")						
Widowed (as for "All ages")						
Divorced (as for "All ages")						
Separated (as for "All ages")						
Not stated (as for "All ages")						
Male (as for "Both sexes")						
Female (as for "Both sexes")						

Population included: population at or above the minimum age adopted for enumerating the economically active population

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Activity status: usual (or current) activity status (paras. 2.168-2.208): economically active: (i) employed; (ii) unemployed (distinguishing persons seeking work for the first time); not economically active; not stated

(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age-limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)

(d) Marital status (paras. 2.96-2.103): single; married; divorced; separated; not stated

(e) Sex (para. 2.86): male; female

This tabulation provides the data needed for computing crude and age-specific participation rates, that is to say, the percentages of economically active persons, which are fundamental for studies of factors determining the size and structure of the economically active population, and for making projections, in conjunction with life-table functions, to calculate the working life expectancy, entry into and retirement from economic activity. Information on the employed and the unemployed furnishes part of the data needed for the appraisal of human resources utilization for policy formulation. It can provide some of the benchmark data for more current studies of employment, unemployment and underemployment. Relating marital status to economic activity permits the understanding of changes in the distribution of the female population by marital status. If the results are tabulated separately for urban and rural areas, as recommended, they will provide useful approximations of the marital status of women engaged in agriculture and non-agricultural work. Furthermore, the data on marital status of the economically active population may give an approximate indication of the number of workers who are responsible for the support of dependants.

[1] The minimum age adopted by the country for enumerating the economically active population.

P6.2 Usually (or currently) active population,[1] by main occupation, age and sex

Geographical division, sex and main occupation	*Age (in years)*								
	All ages	*Under 15*[2]	*15-19*	*20-24*	*25-29*	*...*	*70-74*	*75 and over*	*Not stated*
Both sexes									
TOTAL ECONOMICALLY ACTIVE									
Sub-major group 11									
Minor group 111									
Minor group 112									
(etc.)									
Sub-major group 21									
Minor group 211									
Minor group 212									
(etc.)									
...									
Sub-major group 91									
Minor group 911									
Minor group 912									
(etc.)									
Sub-major group 01									
Minor group 011									
Male (as for "Both sexes")									
Female (as for "Both sexes")									

Population included: economically active population measured according to usual (or current) activity status, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level
(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated
(d) Sex (para. 2.86): male; female

These data make it possible to carry out prospective studies of the number of workers likely to be attached to various occupations which serve as the basis for projections of the national economy and the total economically active population. The tabulation provides the basis for analysis of differential fertility and mortality according to occupation. It also makes available useful data for the planning of social welfare schemes, health insurance programmes and so forth, which frequently pertain only to the employed population. A classification of unpaid family workers by sex and age is needed for international analysis of activity rates for females, in view of the different practices followed in defining and enumerating this group of workers in different countries.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

[2] The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is below 15 years.

P6.3 Usually (or currently) active population, [1] by main industry, age and sex

Geographical division, sex and main industry	*Age (in years)*								
	All ages	*Under 15*	*15-19*	*20-24*	*25-29*	*...*	*70-74*	*75 and over*	*Not stated*
Both sexes									
TOTAL ECONOMICALLY ACTIVE									
Division 01									
Group 011									
Group 012									
(etc.)									
Division 02									
Group 020									
Group 021									
(etc.)									
Division 20									
Group 201									
Group 202									
(etc.)									
.									
.									
.									
Division 99									
Group 990									
Male (as for "Both sexes")									
Female (as for "Both sexes")									

Population included: economically active population measured according to usual (or current) activity status, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) at least to the level of groups (three-digit)
(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is below 15 years.)
(d) Sex (para. 2.86): male; female

These data furnish material for analyses of structural types of economic activities and may serve as a first indicator of socio-economic status. These data make it possible to carry out prospective studies of the number of workers likely to be attached to various industries in order to prepare projections of the national economy and the total economically active population. The tabulation also provides the basis for analysis of differential fertility and mortality according to industry. It also makes available useful data for the planning of social welfare schemes, health insurance programmes and so forth, which frequently pertain only to the employed population. A classification of unpaid family workers by sex and age is needed for international analysis of activity rates for females, in view of the different practices followed in defining and enumerating this group of workers in different countries.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.4 Usually (or currently) active population,[1] by main status in employment, age and sex

Geographical division, sex and age (in years)	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
ALL AGES							
Under 15							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
50-54							
55-59							
60-64							
65-69							
70-74							
75 and over							
Not stated							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b)Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)
(d) Sex (para. 2.86): male; female

These data make it possible to carry out prospective studies of the number of workers by status in employment in order to prepare projections of the national economy and the total economically active population. The tabulations also provide the basis for analysis of differential fertility and mortality according to status in employment. It also makes available useful data for the planning of social welfare schemes, health insurance programmes and so forth, which frequently pertain only to the employee group. A classification of unpaid family workers by sex and age is needed for international analysis of activity rates for females, in view of the different practices followed in defining and enumerating this group of workers in different countries.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.5 Usually (or currently) active population,[1] by main status in employment, main industry and sex

Geographical division, sex and main industry	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
TOTAL ECONOMICALLY ACTIVE							
Division 01							
Group 011							
Group 012							
(etc.)							
Division 02							
Group 020							
Group 021							
(etc.)							
.							
.							
.							
Division 20							
Group 201							
Group 202							
(etc.)							
Division 99							
Group 990							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(c) Sex (para. 2.86): male; female
(d) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) to the level of groups (three-digit)

These tabulations furnish an inventory of a country's economically active population and its structure used in formulating economic policy and planning developmental programmes. Such tabulations play an essential part in analyses of national product and national income. Studies of the proportion of the economically active population in each industrial sector of the economy and of the shifts from one sector to another give information on the level and trend of industrialization and on important aspects of the country's potential for economic development. Studies of migration from rural areas to cities require analysis of the industrial structure of employment in the cities and often of the major areas of out-migration, as an aid to assessment of economic aspects of internal migration. Studies of these types are also relevant to programmes of resettlement and to the formulation of policy with respect to internal migration.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.6 Usually (or currently) active population,[1] by main status in employment, main occupation and sex

Geographical division, sex and main occupation	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
TOTAL ECONOMICALLY ACTIVE							
Sub-major group 11							
Minor group 111							
Minor group 112							
(etc.)							
Sub-major group 21							
Minor group 211							
Minor group 212							
(etc.)							
.							
.							
.							
Sub-major group 91							
Minor group 911							
Minor group 912							
(etc.)							
Sub-major group 01							
Minor group 011							
Male (as for "Both sexes")							
Female (as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status

(c) Sex (para. 2.86): male; female

(d) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

This tabulation provides an inventory of a country's economically active population and its structure, used in formulating economic policy and planning developmental programmes. Together with tabulations P6.5 and P6.7, it provides information for analysing national product and national income. Studies of migration from rural areas to cities require analysis of the occupational structure of employment in the cities and often of the major areas of out-migration, as an aid to assessment of economic aspects of internal migration. Also, decisions concerning possible sites for industrial establishments and vocational schools require information on the occupational structure of the labour force in various localities and regions of the country.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.7 Usually (or currently) active population,[1] by main industry, main occupation and sex

Geographical division, sex and main occupation	**Total economically active**	*Industry*						
		Division 01						*Division 99*
		Group						*Group*
		01	*02*					*99*
Both sexes								
TOTAL ECONOMICALLY ACTIVE								
Sub-major group 11								
Minor group 111								
Minor group 112								
(etc.)								
Sub-major group 21								
Minor group 211								
Minor group 212								
(etc.)								
.								
.								
.								
Sub-major group 91								
Minor group 911								
Minor group 912								
(etc.)								
Sub-major group 01								
Minor group 011								
Male								
(as for "Both sexes")								
Female								
(as for "Both sexes")								

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) to the level of groups (three-digit)

(c) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

(d) Sex (para. 2.86): male; female

This tabulation provides an inventory of a country's economically active population and its structure in formulating economic policy and planning developmental programmes. In planning for the development and expansion of an educational system and efficient utilization of human resources, studies are needed that assess requirements of labour in different industries and occupations. The cross-classifications of occupation and of industry by status in employment give indications of the occupations and industries in which particular status groups are employed. It enables further analysis of the contribution of unpaid family workers in different industrial sectors. In addition, information on the distribution by status in employment in a particular industry is a useful indication of the degree of development and modernization of that sector. The number of wage and salary workers in different industries are often needed as benchmark data for current statistics obtained from establishment reports.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.8 Usually (or currently) active population,[1] by main status in employment, place of work, main occupation and sex

Geographical division, place of work, sex and main occupation	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
All places of work							
TOTAL ECONOMICALLY ACTIVE							
Sub-major group 11							
Minor group 111							
Minor group 112							
(etc.)							
Sub-major group 21							
Minor group 211							
Minor group 212							
(etc.)							
. . .							
Sub-major group 91							
Minor group 911							
Minor group 912							
(etc.)							
Sub-major group 01							
Minor group 011							
Work at home (as for "All places of work")							
No fixed place of work (as for "All places of work")							
Fixed place, outside home (as for "All places of work")							
Male (as for "Both sexes")							
Female (as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b)Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(c) Sex (para. 2.86): male; female
(d) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor groups (in other words, three-digit) level
(e) Place of work (paras. 2.245-2.247): work at home; no fixed place of work; fixed place of work outside home; unknown

This tabulation gives an indication of the nature of work being undertaken in places outside individuals' home, especially the employers and own-account workers' homes. Comparisons between urban and rural, or other administrative divisions, are also useful for determining which areas might need infrastructure development in the form either of business structures and related facilities or of networks of roads.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.9 Usually (or currently) active population,[1] by institutional sector of employment, main industry and sex

Geographical division, sex and main industry	**Total economically active**	*Institutional sector of employment*				
		Non-financial corporations	*Financial corporations*	*General government*	*Non-profit institutions*	*Household sector*
Both sexes						
TOTAL ECONOMICALLY ACTIVE						
Division 01						
Group 011						
Group 012						
(etc.)						
Division 02						
Group 021						
Group 022						
(etc.)						
Division 20						
Group 201						
Group 202						
(etc.)						
.						
.						
.						
Division 99						
Group 990						
Male						
(as for "Both sexes")						
Female						
(as for "Both sexes")						

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Institutional sector of employment (paras. 2.239-2.244): non-financial corporations sector; financial corporations sector; general government sector; non-profit institutions serving household sector; household sector
(c) Sex (para. 2.86): male; female
(d) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) to the level of groups (three-digit)

This tabulation may be used to monitor structural changes in the economy under different types of economic intervention programmes. The changes are recorded not only for the institutional sectors but also for industry and the interaction between the two, assessed separately for women and for men. The need for and the focus of any intervention programmes can therefore be targeted more specifically.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.10 Usually (or currently) active population,[1] by main occupation, educational attainment, age and sex

Geographical division, sex, age (in years) and educational attainment	**Total economically active**	*Occupation*							
		Sub-major group 11			...	*Sub-major group 91*			*Armed forces*
		Minor group				*Minor group*			
		111	*112*	*etc.*		*911*	*912*	*etc.*	
Both sexes									
All levels of education									
ALL AGES									
Under 15									
15-19									
20-24									
25-29									
...									
70-74									
75 and over									
Not stated									
No schooling (as for "All levels of education")									
First level of education									
Not completed (as for "All levels of education")									
Completed (as for "All levels of education")									
Second level of education									
Not completed (as for "All levels of education")									
Completed (as for "All levels of education")									
Third level of education									
First stage not completed (as for "All levels of education")									
First stage completed (as for "All levels of education")									
Level not stated									
Male (as for "Both sexes")									
Female (as for "Both sexes")									

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)

(c) Educational attainment (see paras. 2.153-2.157): no schooling; first level started but not completed; first level completed; second level started but not completed; second level completed; third level: first stage started but not completed; third level: first stage completed (regardless of any education at the third level: second stage); level not stated. (The subcategory "special education" should be included in each category of the first and second levels, if feasible.)

(d) Sex (para. 2.86): male; female

(e) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor groups (in other words, three-digit) level

This tabulation provides the data needed to analyse present requirements for educated personnel and the degree to which they are satisfied by the present human resources. It also furnishes information on the extent to which education is effectively utilized in the economic structure.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.11 Usually (or currently) active population,[1] by main industry, educational attainment. age and sex

Geographical division, sex, age groups (in years) and educational attainment	**Total economically active**	*Industry*				
		Division 01		... ...		*Division 99*
		Group				*Group*
		01	*02*			*99*
Both sexes						
All levels of education						
ALL AGES						
Under 15						
15-19						
20-24						
25-29						
...						
70-74						
75 and over						
Not stated						
No schooling (as for "All levels of education")						
First level of education						
Not completed (as for "All levels of education")						
Completed (as for "All levels of education")						
Second level of education						
Not completed (as for "All levels of education")						
Completed (as for "All levels of education")						
Third level of education						
First stage not completed (as for "All levels of education")						
First stage completed (as for "All levels of education")						
Male (as for "Both sexes")						
Female (as for "Both sexes")						

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)

(c) Educational attainment (see paras. 2.153-2.157): no schooling; first level started but not completed; first level completed; second level started but not completed; second level completed; third level: first stage started but not completed; third level: first stage completed (regardless of any education at the third level: second stage); level not stated

(d) Sex (para. 2.86): male; female

(e) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) to the level of groups (three-digit)

This tabulation provides the data needed to analyse present requirements of the main industrial sectors for educated personnel and the degree to which they are satisfied by the present human resources. It also furnishes information on the extent to which education is effectively utilized in the economic structure.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.12 Usually active population,[1] by sex, main status in employment and number of weeks worked in all occupations during the last year

Geographical division, sex and number of weeks worked	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
TOTAL							
Less than 1 week							
1 to 4 weeks							
5 to 12 weeks							
13 to 24 weeks							
25 to 36 weeks							
37 weeks and over							
Not stated							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(c) Sex (para. 2.86): male; female
(d) Time worked (paras. 2.209-2.211): less than 1 week; 1 to 4 weeks; 5 to 12 weeks, 13 to 24 weeks; 25 to 36 weeks; and 37 weeks and over; not stated

This tabulation provides information for the analysis of potential underemployment, particularly among employees. It also makes available useful data for the planning of vocational training, insurance programmes and so forth. Information concerning the time worked in hours per week or in number of weeks per reference period by unpaid family workers is needed for comparative analysis of activity rates for females, particularly in view of the different practices followed by countries in defining and enumerating this group of workers in past censuses.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.13 Currently active population,[1] by sex, main status in employment and number of hours worked in all occupations during the last week

Geographical division, sex and number of hours worked	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
TOTAL							
Less than 8 hours							
9 to 16 hours							
17 to 24 hours							
25 to 32 hours							
33 to 40 hours							
41 to 48 hours							
49 hours and over							
Not stated							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)
(d) Sex (para. 2.86): male; female
(e) Time worked (paras. 2.209-2.211): less than 8 hours; 9 to 16 hours; 17 to 24 hours; 25 to 32 hours; 33 to 40 hours; 41 to 48 hours; and 49 hours and over; not stated

This tabulation provides information for the analysis of potential underemployment, particularly among employees. It also makes available useful data for the planning of vocational training, insurance programmes and so forth. Information concerning the time worked in hours per week or in number of weeks per reference period by unpaid family workers is needed for comparative analysis of activity rates for females, particularly in view of the different practices followed by countries in defining and enumerating this group of workers in past censuses.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.14 Usually (or currently) active population,[1] by main occupation, marital status and age

Geographical division, occupation, marital status and age (in years)	**Total economically active**	*Occupation*								
		Sub-major group 11			...	*Sub-major group 91*			*Armed forces*
		Minor groups				*Minor groups*			
		111	*112*	*etc.*		*911*	*912*	*etc.*	
Both sexes									
All marital/other statuses									
ALL AGES									
Under 15 years									
15-19									
20-24									
25-29									
...									
70-74									
75 and over									
Not stated									
Single									
(as for "All statuses")									
Married									
(as for "All statuses")									
Widowed									
(as for "All statuses")									
Divorced									
(as for "All statuses")									
Separated									
(as for "All statuses")									
Not stated									
(as for "All statuses")									
Male									
(as for “Both sexes”)									
Female									
(as for “Both sexes”)									

Population included: economically active persons at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)
(c) Marital status (paras. 2.96-2.103): single: married; widowed: divorced: separated; not stated
(d) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

This tabulation provides material for the analysis of the relation of marital status to the broad occupation of economically active people and of the probable effect thereon of any anticipated changes in the distribution of the population by marital status. A similar tabulation by industry will also be useful in understanding the pattern of absorption, particularly of married women, into different industries. It should be noted that the present tabulation calls for occupation categories according to, or convertible to, only the major groups of ISCO. Data according to the more detailed minor groups give a more precise picture of the occupations where women are concentrated.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.15 Usually (or currently) active population,[1] by main status in employment, marital status and age

Geographical division, sex, age (in years) and marital status	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
All marital/other statuses							
ALL AGES							
Under 15 years							
15-19							
20-24							
...							
70-74							
75 and over							
Not stated							
Single							
(as for "Both sexes")							
Married							
(as for "Both sexes")							
Widowed							
(as for "Both sexes")							
Divorced							
(as for Both sexesl")							
Separated							
(as for "Both sexes")							
Not stated							
(as for "Both sexes")							
Male							
(as for "All statuses")							
Female							
(as for "All statuses")							

Population included: economically active persons at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(*a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)*
(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)
(c) Marital status (paras. 2.96-2.103): single: married; widowed: divorced: separated; not stated
(d) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status
(e) Sex (para. 2.86): male; female

This tabulation provides material for the analysis of the relation of marital status to the main status in employment of economically active people and of the probable effect thereon of any anticipated changes in the distribution of the population by marital status. Disaggregation of the table by sex will also be useful in understanding the pattern of women's employment status.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.16 Usually (or currently) active population[1] in the household sector, by main status in employment, place of work, main occupation and sex

Geographical division, place of work, sex and main occupation	**Total economically active**	*Main status in employment*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
All places of work							
Household sector, TOTAL							
Sub-major group 11							
Minor group 111							
Minor group 112							
(etc.)							
Sub-major group 21							
Minor group 211							
Minor group 212							
(etc.)							
. . .							
Sub-major group 91							
Minor group 911							
Minor group 912							
(etc.)							
Sub-major group 01							
Minor group 011							
Work at home							
(as for "All places of work")							
No fixed place of work							
(as for "All places of work")							
Fixed place, outside home							
(as for "All places of work")							
Unknown							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: population at or above the minimum age adopted for enumerating the economically active population employed in the household sector (paras. 2.2439), as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status

(c) Sex (para. 2.86): male; female

(d) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

(e) Place of work (paras. 2.245-2.247): work at home; no fixed place of work; fixed place of work outside home; unknown

Given the System of National Accounts definition of the production boundary, there is a substantial portion of the household sector that is attributable to non-market work. This tabulation provides information on the extent to which informal sector activities are conducted outside the home, to be used in formulating enterprise development and employment creation programmes. Urban and rural, or other administrative divisions, permit detailed analysis of this sector's activities.

[1] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

P6.17 Usually active population, by monthly or annual income, occupation and sex

Geographical division, sex and main occupation	**Total economically active**	Monthly or annual income (Income classification adopted by the country)
Both sexes		
TOTAL ECONOMICALLY ACTIVE		
Sub-major group 11		
Minor group 111		
Minor group 112		
(etc.)		
Sub-major group 21		
Minor group 211		
Minor group 212		
(etc.)		
.		
.		
.		
Sub-major group 91		
Minor group 911		
Minor group 912		
(etc.)		
Sub-major group 01		
Minor group 011		
Male		
(as for "Both sexes")		
Female		
(as for "Both sexes")		

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Income (paras. 2.236-2.238): income classification adopted by the country, preferably distinguishing approximately each fifth percentile or tenth percentile group

(c) Sex (para. 2.86): male; female

(d) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

This tabulation is needed for appraising variations in the income level of persons both within and among groups of occupations. The tabulation can be usefully expanded to include a cross-classification by broad age groups (for example, under 15 years, 15-64 years, 65 years and over). It can usefully be expanded to include a classification by income of households and size of households. Such a tabulation is particularly useful for social policy studies and programmes focusing on households, particularly those of the poor.

P6.18 Households and population in households, by annual income and size of household

Geographical division, and size of household	*Annual income*									
	Total		*Less than ...*		*..._ ...*		*... and over*		*Not stated*	
	House-holds	**Popu-lation**	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*
ALL HOUSEHOLDS										
Households consisting of										
1 person										
2 persons										
3 persons										
4 persons										
5 persons										
6 persons										
7 persons										
8 persons										
9 persons										
10 persons or more										
Not stated										

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i) and (ii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and, separately, the number of households of each size and the aggregate population by size of household;
(c) Income (paras.2.236-2.238.): income classification adopted by the country, preferably distinguishing approximately each fifth-percentile or tenth-percentile group

This tabulation provides information on annual income by the size of households. The information is useful, for instance, in obtaining indicators such as number of households by different percentile income groups. The tabulation will be useful in formulating a variety of social policies and measures. It may be expanded by classifying the annual income groups for urban/rural areas, which will be of further use in studies focusing on the development of disadvantaged areas.

P6.19 Population not usually active, by functional categories, age and sex

Geographical division, sex and age (in years)	**Total not usually active**	*Functional category*				
		Homemaker	*Student*	*Income recipient*	*Other*	*Not stated*
Both sexes						
ALL AGES						
Under 15						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
50-54						
55-59						
60-64						
65-69						
70-74						
75 and over						
Not stated						
Male						
(as for "Both sexes")						
Female						
(as for "Both sexes")						

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1
Classifications:
(a) Geographical division (paras. 2.52- 2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years: 70-74 years: and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)
(c) Functional categories (paras. 2.200-2.204): homemaker; student; income recipient; other; not stated
(d) Sex (para. 2.86): male; female

This tabulation provides data classified by functional categories and reason for inactivity for the analysis of potential sources of human resources that are not readily available at present but that may become so under different circumstances.

P6.20 Population not currently active (in other words, not in the labour force), by primary reason for inactivity, age and sex

Geographical division, sex and age (in years)	**Total not currently active**	*Primary reason for inactivity*				
		Attendance at educational institution	*Engagement in household duties*	*Retirement or old age*	*Other reasons such as infirmity or disablement*	*Not stated*
Both sexes						
ALL AGES						
Under 15						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
50-54						
55-59						
60-64						
65-69						
70-74						
75 and over						
Not stated						
Male						
(as for "Both sexes")						
Female						
(as for "Both sexes")						

Population included: population at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years: 70-74 years: and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)

(c) Primary reason for inactivity (paras. 2.205-2.208): attendance at educational institution; engagement in household duties; retirement or old age; other reasons such as infirmity or disablement; not stated

(d) Sex (para. 2.86): male; female

This tabulation provides data classified by functional categories and reason for inactivity for the analysis of potential sources of human resources that are not readily available at present but that may become so under different circumstances.

P6.21 Heads or other reference members of households[1] ... [2] years of age and over, by economic activity status, age and sex

Geographical division, sex and age (in years) of heads or other reference members of households	**Total**	*Usually (or currently) active heads or other reference members of households*	*Usually (or currently) inactive heads or other reference members of households*	*Not stated*
Both sexes				
ALL HOUSEHOLDS				
Under 15 [3]				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59				
60-64				
65-69				
70-74				
75 and over				
Not stated				
Male				
(as for "Both sexes")				
Female				
(as for "Both sexes")				

Population included: all heads or other reference members of households at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Economic activity status (paras. 2.168-2.208): (i) usually (or currently) active heads or other reference members of households: (ii) not usually (or currently) active heads or other reference members of households: (iii) activity status not stated

(c) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; not stated. (The category "under 15 years" should include all ages between the minimum age-limit adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.)

(d) Sex (para. 2.86): male; female

This tabulation provides information on the economic situation of households which provides for the calculation of the percentage of households and families headed by economically active men and women. Furthermore, the number of households and families headed by females is an important measure of the economic role of women in society. This information is also useful in planning for various facilities and services needed by women who work and maintain households. Similarly, data on households headed by the economically inactive such as retired persons are useful in formulating policies and programmes in social, housing and other sectors.

[1] Including one-person households (in other words, persons living alone).

[2] The minimum age adopted by the country for census questions on economic activity.

[3] All ages between the minimum age adopted by the country for census questions on economic activity and 14 years, if the minimum is under 15 years.

P6.22 Households and population in households, by size of household and number of usually (or currently) active members

Geographical division, and size of household	*Households with indicated number of usually (or currently) active members*											
	Total		*0*		*1*		*...*		*5 or more*		*Not stated*	
	House-holds	**Popu-lation**	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*	*House-holds*	*Popu-lation*
ALL HOUSEHOLDS												
Households consisting of												
1 person												
2 persons												
3 persons												
4 persons												
5 persons												
6 persons												
7 persons												
8 persons												
9 persons												
10 persons or more												
Not stated												

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and, separately, the number of households of each size and the aggregate population by size of household
(c) Number of usually active or (currently active) members (paras. 2.168-2.208): none; 1 member; 2 members; 3 members; 4 members; 5 or more members; not stated

This tabulation provides information on the economic situation and size of households. The information is, for instance, useful in obtaining indicators such as the number of usually (or currently) active and of dependent persons within households. Furthermore, the variations in dependency by the size of households can be examined. This tabulation will be useful in formulating a variety of social policies and measures. It may be expanded by classifying the employed by sex, which will be of further use in studies focusing on women and their twin roles in the household and the economy.

P6.23 Households, by size, number of usually (or currently) unemployed members and dependent children under 15 years of age in household

Geographical division, and size of households	*Number of usually (or currently) unemployed members of household*				*Number of dependent children under 15 years of age in household*				*Total households*	*Total usually (or currently) unemployed*	*Total dependent children*	*Total population*
	None	*1*	*2*	*3 or more*	*None*	*1*	*2*	*3 or more*				
ALL HOUSEHOLDS												
Households consisting of												
1 person												
2 persons												
3 persons												
4 persons												
5 persons												
6 persons												
7 persons												
8 persons												
9 persons												
10 persons or more												
Not stated												

Population included: all members of households
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons; 9 persons; 10 persons or more; not stated; and, separately, the number of households of each size and the aggregate population by size of household
(c) Number of usually (or currently) unemployed members (paras. 2.194-2.195): none, 1 member; 2 members; 3 or more members
(d) Dependent (or not economically active) children under 15 years of age: the dependent children under 15 years of age should include all children not economically active (paras. 2.201-2.208) in those ages

This tabulation provides basic information on the economic situation of households. Households in developing countries in particular include large numbers of dependent children and/or a considerable degree of unemployment and underemployment among their adult members. Therefore, such information as the number of unemployed members in households according to the size of households can serve as a basis for a variety of social programmes concerning the education and health of dependent children and for family allowance policies. This tabulation is also useful in focusing special attention on households containing several unemployed members and their needs, including unemployment assistance.

P6.24 Usually (or currently) active heads or other reference members of households[1] ... [2] years of age and over, by main status in employment, main industry and sex

Geographical division, main industry and sex of active heads or other reference members of households	**Total**	*Main status in employment of active heads or other reference members of households[3]*					
		Employer	*Own-account worker*	*Employee*	*Unpaid family worker*	*Member of producers' cooperative*	*Persons not classifiable by status*
Both sexes							
TOTAL households with active heads or other reference members							
Division 01							
Group 011							
Group 012							
(etc.)							
Division 02							
.							
.							
.							
Division 99							
Group 990							
(etc.)							
Male							
(as for "Both sexes")							
Female							
(as for "Both sexes")							

Population included: all households with usually (or currently) active heads or other reference members at or above the minimum age adopted for enumerating the economically active population, as in tabulation P6.1

Classifications:

(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality. Distinguish between urban and rural for (i), (ii) and (iii)

(b) Status in employment (paras. 2.226-2.235): employer; own-account worker; employee; unpaid family worker; member of producers' cooperative; persons not classifiable by status

(c) Sex (para. 2.86): male; female

(d) Industry (paras. 2.221-2.225): according to, or convertible to, the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev.3) to the level of groups (three-digit)

This tabulation furnishes information on the characteristics of heads or other reference members of households. It presents the type of industry, that is to say, agriculture, manufacturing, commerce and so on, in which the head or reference member of the household is engaged and on which he or she is generally dependent for the support of his/her household. This tabulation also provides information on whether the head or reference member of the household is self-employed or an employee, reflecting the socio-economic status of households and means of livelihood.

[1] Including one-person households (in other words, persons living alone).

[2] The minimum age adopted by the country for census questions on economic activity.

[3] The treatment of unemployed persons (including those seeking work for the first time) should be clearly stated.

Group 7. Tabulations dealing with international migration on immigrant stock

P7.1 Foreign-born population, by country of birth, age and sex

Geographical division, continent and country of birth, and sex	**All ages**	*Age (in years)*								
		Under 5	*5-9*	*10-14*	*15-19*	*20-24*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes										
TOTAL										
Africa										
Country A[1]										
Country B[1]										
.										
.										
.										
Country Z[1]										
All other countries										
Country not stated										
America, North (as above)										
America, South (as above)										
Asia (as above)										
Europe (as above)										
Oceania (as above)										
Continent not stated										
Male										
(as for "Both sexes")										
Female										
(as for "Both sexes")										

Population included: foreign-born population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) Country/place of birth (paras. 2.252-2.253): each continent (Africa; America, North; America, South; Asia; Europe; Oceania); each country within the continent that is the birthplace of a significant number of foreign-born persons; all other countries (combined) in each continent; country not stated; continent not stated
(c) Age (paras. 2.87-2.95): under 5 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

These data provide the basis for assessing the age and sex structure of the population and the contribution of immigration from specified countries. Thus the effects of immigration from specific countries on the growth and structure of the population can be estimated. As indicated in table P1.4, the differences in future fertility and mortality between immigrants from specific countries can also be improved.

[1] Name of country.

P7.2 Foreign-born population, by period of arrival, country of birth, age and sex

Sex, country of birth and age (in years)	**All periods**	Period of arrival prior to the census date [1]			
		1-4 years	*5-9 years*	*10 years and more*	*Not stated*
Both sexes					
All countries					
Africa					
Country A[2]					
Total 1 year and over					
1-4					
5-9					
10-14					
1-14					
15-19					
20-24					
...					
40-44					
15-44					
45-49					
50-54					
...					
80-84					
45-84					
85 and over					
Age not stated					
Country B[2] (as for "Country A")					
...					
Country Z[2] (as for "Country A")					
All other countries (as for "Country A")					
Country not stated (as for "Country A")					
America, North (as for "Africa")					
America, South (as for "Africa")					
Asia (as for "Africa")					
Europe (as for "Africa")					
Oceania (as for "Africa")					
Continent not stated (as for "Country A")					
Male (as for "Both sexes")					
Female (as for "Both sexes")					

Population included: all foreign-born persons in the country for more than one year (para. 2.252)
Classifications:
(a) Year or period of arrival (paras. 2.255-2.257): 1-4 years prior to the date of inquiry; 5-9 years; 10 years or more; not stated
(b) Place or country of birth (paras. 2.252-2.253): each continent (Africa; America, North; America, South; Asia; Europe; Oceania); each country within the continent that is the birthplace of a significant number of foreign-born persons; all other countries (combined) in each continent; country not stated; continent not stated
(c) Age (paras. 2.87-2.95): 1-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years (with subtotals for 1-14 years; 15-44 years: and 45-84 years); and 85 years and over; age not stated
(d) Sex (para. 2.86): male, female

This tabulation furnishes data to assess the cumulative effect of annual flows of migration and, in particular, the proportion of the total population that is of foreign origin and its demographic characteristics. In the absence of migration flow statistics, it provides information on the sources of immigration and their relative contributions over the years for use in preparing population estimates and projections. Cross-classification by period of arrival provides information on the changes in the relative size of population originating from specified countries and their composition by age and sex over recent years. An indication of return migration can be obtained based on similar tabulation from successive censuses.

[1] In actual published tables, the period of arrival may be shown in calendar years.

[2] Name of country.

P7.3 Population, by country of birth and citizenship, age and sex

Geographical division, continent and country of birth and citizenship, and sex	**All ages**	*Age (in years)*								
		Under 5	*5-9*	*10-14*	*15-19*	*20-24*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes										
TOTAL										
Africa										
Country A[1]										
Country a[2]										
...										
Country z[2]										
Country B[1] (as above)										
.										
.										
.										
Country Z[1] (as above)										
All other countries										
Country not stated										
America, North (as above)										
America, South (as above)										
Asia (as above)										
Europe (as above)										
Oceania (as above)										
Continent not stated										
Male										
(as for "Both sexes")										
Female										
(as for "Both sexes")										

Population included: foreign-born population
Classifications:
(a) Geographical division (paras. 2.52-2.59): (i) total country; (ii) each major civil division
(b) Name of country
(c) Country/place of birth (paras. 2.252-2.253): each continent (Africa; America, North; America, South; Asia; Europe; Oceania); each country within the continent that is the birthplace of a significant number of foreign-born persons; all other countries (combined) in each continent; country not stated; continent not stated
(d) Country of citizenship (para. 2.254): each continent (Africa; America, North; America, South; Asia; Europe; Oceania); each country within the continent that is the country of citizenship of a significant number of foreign-born persons; all other countries (combined) in each continent; country not stated; continent not stated
(e) Age (paras. 2.87-2.95): under 5 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(f) Sex (para. 2.86): male; female

This tabulation is useful in identifying the country of birth and citizenship of the population according to age and sex. It is possible to determine the frequency with which persons become citizens and the place of birth of citizens in each country. Data can also be of use in the study of the rate of assimilation of the foreign-born population.

[1] Country of birth.

[2] Country of citizenship.

P7.4 Foreign-born population, by marital status, age and sex

Sex and marital status	**All ages**	*Age (in years)*							
		Under 15	*15-19*	*20-24*	*25-29*	...	*60-64*	*65 and over*	*Not stated*
Both sexes									
TOTAL									
Single									
Married									
Widowed									
Divorced									
Separated									
Not stated									
Male									
(as for "Both sexes")									
Female									
(as for "Both sexes")									

Population included: all foreign-born persons in the country for more than one year (para. 2.252)
Classifications:
(a) Marital status (paras. 2.96-2.103): single; married; widowed; divorced; separated; not stated
(b) Age (paras. 2.87-2.95): 1-4 years; 5-9 years; 10-14 years; 15-19 year; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years (with subtotals for 1-14 years; 15-44 years: and 45-84 years); and 85 years and over; age not stated
(c) Sex (para. 2.86): male; female

This tabulation is useful in studying the nuptiality patterns of the foreign-born population and the differentials by country of birth. Migration sometimes consists predominantly of single men and women. The pattern of migration, particularly whether it is family-type, may be inferred from such tabulation. This tabulation is the basis for assessing and projecting the effects of immigration on the distribution of the total population by age and sex. The data can be used to estimate the extent of family and household formation among the foreign-born population so as to assess the impact of immigration on housing requirements and the demand for various household goods and services. Cross-classification by country of birth may be made when the foreign-born population is large and diverse in the country of origin.

P7.5 Foreign-born population[1] ... years of age and over, by usual (or current) activity status, age and sex

Sex and age	**Foreign-born population... [1] years of age and over**	*Economically active*			*Not economically active*	*Not stated*
		Employed	*Unemployed*			
			Total	*Seeking work for the first time*		
Both sexes						
All ages						
Under 15[2]						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
50-54						
55-59						
60-64						
65-69						
70-74						
75 and over						
Age not stated						
Male						
(as for "Both sexes")						
Female						
(as for "Both sexes")						

Population included: all foreign-born persons in the country for more than one year who are at or above the minimum age adopted for enumerating the economically active population (para. 2.252)

Classifications:

(a) Usual (or current) activity status (paras. 2.168-2.208): economically active employed, unemployed (total and persons seeking work for the first time); not economically active; not stated

(b) Age (paras. 2.87-2.95): under 15 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; and 75 years and over; age not stated

(c) Sex (para. 2.86): male; female

These data provide information on the influence of the foreign-born population on the labour market of the receiving country. The labour force participation rates specific for each age and sex group are used particularly for making labour force projections in countries where immigration is occurring on a large scale. Comparison with the economic activity pattern of the native population provides information for identifying the relationship of immigration policy with changes in labour-market conditions that may pose special problems of adjustment for immigrants. Comparing the unemployment rates for the foreign-born and native populations may help in planning for the establishment of requisite vocational and other training programmes.

[1] The minimum age adopted by the country for enumerating the economically active population.

[2] All ages between the minimum age adopted by the country for enumerating the economically active population and 14 years, if the minimum is under 15 years.

P7.6 Economically active[1] foreign-born population ...[2] years of age and over, by period of arrival, occupation and sex

Sex and occupation	**All periods**	Period of arrival prior to the census date[3]			
		1-4 years	*5-9 years*	*10 years or more*	*Not stated*
Both sexes					
TOTAL ECONOMICALLY ACTIVE					
Sub-major group 11					
Minor group 111					
Minor group 112					
(etc.)					
Sub-major group 21					
Minor group 211					
Minor group 212					
(etc.)					
.					
.					
.					
Sub-major group 91					
Minor group 911					
Minor group 912					
Sub-major group 01					
Minor group 011					
Male (as for "Both sexes")					
Female (as for "Both sexes")					

Population included: foreign-born persons above the specified minimum age in the country who are economically active according to usual (or current) activity status (paras. 2.168-2.208 and 2.252)

Classifications:

(a) Year or period of arrival (paras. 2.255-2.257): 1-4 years prior to the date of inquiry; 5-9 years: 10 years or more; not stated

(b) Occupation (paras. 2.212-2.220): according to, or convertible to, the latest revision of the International Standard Classification of Occupations (ISCO-88), at least to the minor group (in other words, three-digit) level

(c) Sex (para. 2.86): male; female

These data provide information on the occupations of the foreign-born population needed to study immigrant workers, particularly their economic integration and mobility in the country of immigration. Together with a similar tabulation for the native population, the data constitute the basis for undertaking an in-depth analysis of occupational patterns and making occupational forecasts for the economy. From the cross-classification by period of arrival, one can observe the pattern of inflow of skilled migrants during previous years. When classification is also by country of birth, data are provided for countries that are losing a large volume of highly qualified migrants; such data are useful in the formulation of employment and educational policies in the countries of origin for dealing with the impact of the outflow of skilled personnel.

[1] The treatment of unemployed immigrants (including those seeking work for the first time) should be clearly stated.

[2] The minimum age adopted by the country for enumerating the economically active population.

[3] In actual published tables, the period of arrival can be shown in calendar years.

P7.7 Foreign-born population... [1] years of age and over, by educational attainment, age and sex

Sex and educational attainment	**Foreign-born population ... [1] of age and over**	Age (in years)								
		... [1] - 9	*10-14*	*15-19*	*20-24*	*25-34*	*...*	*80-84*	*85 and over*	*Not stated*
Both sexes										
Total										
No schooling										
Primary level of education:										
Started but not completed										
Primary level of education completed										
Not stated										
Secondary level of education:										
First cycle started but not completed										
First cycle completed										
Second cycle started but not completed										
Second cycle completed										
Not stated										
Third level of education:										
First stage not completed										
First stage completed[2]										
Not stated										
Level not stated										
Male										
(as for "Both sexes")										
Female										
(as for "Both sexes")										

Population included: all foreign-born persons in the country for more than one year and at or above the usual age of entrance into school (paras. 2.150-2.152)

Classifications:

(a) Educational attainment (paras. 2.153-2.157): no schooling; primary level of education: started but not completed; primary level completed; not stated; secondary level - first cycle of education started but not completed; second level - first cycle completed; secondary level - second cycle of education started but not completed; secondary level - second cycle completed; not stated; third level of education: first stage (UNESCO, International Standard Classification of Education (ISCED), category 5) started but not completed; first stage completed regardless of any education at the second stage of the third level (ISCED, category 6); not stated; level not stated

(b) Age (paras. 2.87-2.95): ... -9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated

(c) Sex (para. 2.86): male; female

These data provide the information needed to assess the educational level of the foreign-born population and the related impact on the economic and social development of the country. They provide profiles for comparison of the present educational attainment of recent immigrants with that of the total population of the country. Such comparisons are useful in determining immigration policy, taking into account the requirements for educated personnel with respect to undertaking various types of economic activity. The educational profile by age provided by the tabulation is useful in assessing differences in the educational attainment of younger and older immigrants, which may provide some indication of time trends in their educational attainment. These profiles are useful in formulating educational programmes and policies.

[1] The lower age-limit should be the usual age for entrance into school.

[2] Regardless of any education at the third level: second stage.

Group 8. Tabulations dealing with disability characteristics

P8.1 Total population, by type of disability, geographical division, urban/rural residence, whether living in household or institution, age and sex

Geographical division, urban or rural, household or institution, age and sex	*Total population*			*Type of disability* [1]						
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	. . .	*Other*	*Not stated*
Total country										
0-4 Total										
Male										
Female										
5-9										
...										
80-84										
85 and over										
Not stated										
Household (Sex and age as above)										
Institution (Sex and age as above)										
Not stated (Sex and age as above)										
Urban residence										
Household (Sex and age as above)										
Institution (Sex and age as above)										
Not stated (Sex and age as above)										
Rural residence										
Household (Sex and age as above)										
Institution (Sex and age as above)										
Not stated (Sex and age as above)										

Population included: total population
Classifications:
(a) Geographical division (paras. 2.52 -2.59): (i) total country; (ii) each major civil division; (iii) each minor civil division; (iv) each principal locality
(b) Type of disability (paras. 2.258-2.276): as listed in the census questionnaire
(c) Age (paras. 2.87-2.95): 0-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

There is widespread interest in the prevalence of disability in the population, by type, age and sex. This tabulation provides information for the calculation of prevalence rates distributed by geographical division, urban/rural residence and the living arrangements of persons with disability.

[1] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

P8.2 Households with one or more persons with disability, by type, size of household, urban/rural area

Type of household, urban and rural areas	*Total households*		*Size of household (persons)*								
	Without disabilities	*With disabilities*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8 or more*	*Not stated*
Total country											
Population in private households											
Total											
One-person household											
Nuclear family household											
Extended household											
Composite household											
Unknown											
Urban areas											
(Same as above)											
Rural areas											
(Same as above)											

Population included: total population
Classifications:
(a) Type of household (para. 2.82): one-person household; nuclear household; extended household; composite household; unknown
(b) Size of household (paras. 2.73-2.75): 1 person; 2 persons; 3 persons; 4 persons; 5 persons; 6 persons; 7 persons; 8 persons or more; not stated

This tabulation gives information on the number, type and size of households in which people with disability live. The size of households and the distinction among the one-person household, the nuclear family household and the extended family household are useful for determining the economic and social provisions that may be needed for people with disability living alone or with relatives. The tabulation also provides data for calculating prevalence of disability per household (number of households with at least one person with disability per 1,000 households).

P8.3 Total population 15 years of age and over, by type of disability, marital status, urban/rural area, age and sex

Marital status, urban or rural, age and sex	*Total population 15 years of age and over*			*Type of disability* [1]					
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	. . .	*Other*
Total country									
Total									
Total									
Male									
Female									
15-19									
Total									
Male									
Female									
.									
.									
.									
80-84									
85 +									
Not stated									
Single									
(Age and sex as above)									
Married									
(Age and sex as above)									
Widowed									
(Age and sex as above)									
Divorced									
(Age and sex as above)									
Separated									
(Age and sex as above)									
Not stated									
(Age and sex as above)									
Urban areas									
(Same groups as above)									
Rural areas									
(Same groups as above)									

Population included: total population
Classifications:
(a) Marital status (paras. 2.96-2.103): single; married; widowed; divorced; separated; not stated
(b) Type of disability (paras. 2.258-2.276): as listed in the census questionnaire
(c) Age (paras. 2.87-2.95): 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

Information on the marital status of the people with disability is important for understanding the social integration of people with disability. This tabulation provides data on the marital status of people with disability which are the basis for the calculation of age-sex specific marriage rates and divorce rates for comparison with people without disability. The same comparison is also relevant for different types of disability.

[1] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

P8.4 Population with disability, by cause and type of disability, urban/rural area, age and sex

Cause of disability, urban/rural area, age and sex	*Population 5 years of age and over*			*Type of disability* [1]					
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	*...*	*Other*
Causes of disability									
Total									
0-4									
5-9									
.									
.									
.									
80-84									
85 and over									
Present at birth									
Diseases/illness									
Infectious and parasitic diseases									
Other diseases and conditions									
Injury									
Road and transportation accidents									
Injury resulting from accidental falls, fire									
Operations of war									
Accidental poisoning									
Other injuries									
Other causes including natural and environmental factors									
Unknown									
Not stated									
Male									
(same as above)									
Female									
(same as above)									

Population included: population with disability
Classifications:
(a) Causes (para. 2.277): as stated in the questionnaire
(b) Type of disability (paras. 2.258-2.276): as listed in the census questionnaire
(c) Age (paras. 2.87-2.95): 0-4 years; 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

This tabulation presents data for understanding the main factors leading to disability in the country. Examining such causes as war, accidents, disease by type of disability, urban/rural residence, age and sex provides the basis for developing policies and programmes for prevention and for the evaluation of prevention programmes.

[1] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

P8.5 Population 5 [1] to 29 [2] years of age, by school attendance, type of disability, urban/rural area, age and sex

School attendance, urban/rural, age and sex	*Population [1] up to age 29*			*Type of disability[3]*					
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	….	*Other*
Attending school									
Total									
Male									
Female									
5-9									
Total									
Male									
Female									
.									
.									
.									
25- 29 [2]									
(Age and sex as above)									
Not attending school									
(Age and sex as above)									
Not stated									

Population included: all persons between the usual age for entering the first level of school and 29 years of age
Classifications:
(a) School attendance (paras. 2.150-2.152): attending school; not attending school; not stated
(b) Type of disability (paras. 2.258-2.276): as listed in the census questionnaire
(c) Age (paras. 2.87-2.95): 5-9 years; 10-14 years; 15-19 years; 20-24 years; and 25-29 years
(d) Sex (para. 2.86): male; female

School attendance patterns for persons with disability are used to compare the current pattern of participation and non-participation in education for people with and without disability. The percentage of people with disability of the school-age population who attend school can also be compared among the different types of disability.

[1] Usual age for entering the first level of school.

[2] The higher age-limit may be adjusted: people with disability may attend school even in higher ages.

[3] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

P8.6 Population 5 years of age and over, by educational attainment, type of disability, urban/rural area, age and sex

Educational attainment, urban/rural area, age and sex	*Population 5 years of age and over*			*Type of disability*[1]					
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	*...*	*Other*
TOTAL									
Males									
Females									
No schooling Total									
Male									
Female									
5-9									
10-14									
...									
85+									
Primary education:									
(Age and sex as above)									
Grade 1									
...									
Grade not stated									
Secondary education, first cycle									
Grade 1									
...									
Grade not stated									
Secondary education, second cycle									
Grade 1									
...									
Grade not stated									
Post-secondary education									
Grade 1									
...									
Grade not stated									
Not classifiable by level and grade of education									
Level not stated									

Population included: all persons at or above the usual age for entrance into school

Classifications:

(a) Educational attainment (paras. 2.153-2.157): no schooling; primary education: by single grades and grade not stated; secondary education, first cycle: by single grades and grade not stated; secondary education, second cycle: by single grades and grade not stated; post-secondary education: by single grades/ years and grade not stated; not classifiable by level and grade of education; level of education not stated

(b) Type of disability (paras. 2.258-2.276): as listed in the census questionnaire

(c) Age(paras. 2.87-2.95): 5-9 years; 10-14 years; 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over

(d) Sex (para. 2.86): male; female

The tabulation provides data for the comparison of the educational attainment of people with and without disability. The percentage of people with disability who have no schooling can be compared among different types of disability and with that of people without disability. This gives information on the status of integration of people with disability and on the opportunity that people with disability have to participate in the economic, social and cultural development of the country.

[1] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

P8.7 Population 15 years and over, by activity status, type of disability, urban/rural area, age and sex

Activity status, urban/rural area, age and sex	*Population 5 years of age and over*			*Type of disability* [1]					
	Without disabilities	*With disabilities*	*Not stated*	*Seeing*	*Hearing*	*Speaking*	*Moving*	*...*	*Other*
CURRENTLY ACTIVE									
Total									
Male									
Female									
15-19									
Total									
Male									
Female									
...									
80-84									
85+									
Employed (Age and sex as above)									
Unemployed (Age and sex as above)									
First job seeker (Age and sex as above)									
Worked before (Age and sex as above)									
NOT CURRENTLY ACTIVE									
Homemaker									
Student									
Income recipient									
Other									
NOT STATED									

Population included: population at or above the minimum age adapted for enumerating the economically active population
Classifications:
(a) Activity status (paras. 2.168-2.208): economically active: (i) employed; (ii) unemployed (distinguishing persons seeking work for the first time); not economically active: (i) homemaker; (ii) student; (iii) income recipient; (iv) other; not stated
(b)Type of disability (paras.2.258-2.276): as listed in the census questionnaire
(c) Age (paras. 2.87-2.95): 15-19 years; 20-24 years; 25-29 years; 30-34 years; 35-39 years; 40-44 years; 45-49 years; 50-54 years; 55-59 years; 60-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; and 85 years and over; not stated
(d) Sex (para. 2.86): male; female

Access to paid work is crucial to achieving self-reliance and ensuring the well-being of the adult population, both of persons with disabilities as well as of those without disabilities. Tabulations by economic activity status provide a basic measure of the social and economic integration of the population with disability as compared with those without disability. Tabulations by type of disability, urban/rural area, age and sex are essential to identifying groups of the population that may be most disadvantaged.

[1] The sum of numbers under "type of disability" does not correspond to the reported population with disabilities because a person may have more than one disability.

Annex 2

List of Tabulations for Housing Censuses

List of tabulations for housing censuses

H1. Households, by broad types of living quarters and number of homeless households
H2. Households in occupied housing units, by type of housing unit
H3. Households in occupied housing units, by type of housing unit, cross-classified by type of household
H4. Households in collective living quarters, by type of living quarters
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H6. Households, by type of living quarters, cross-classified by type of activity, occupation and sex of head of household
H7. Homeless households, by age and sex of head of household
H8. Vacant conventional and basic dwellings, by type of vacancy
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H10. Conventional and basic dwellings, by number of dwellings in the building
H11. Housing units, by number of rooms, cross-classified by type of housing unit and number of occupants per housing unit
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H13. Housing units, by type of housing unit occupied, cross-classified by water supply system
H14. Housing units, by type of housing unit occupied, cross-classified by water supply system and source of water supply
H15. Housing units, by type of housing unit occupied, cross-classified by type of toilet facilities
H16. Housing units, by type of housing unit occupied, cross-classified by type of toilet and type of sewage disposal
H17. Housing units, by type of housing unit occupied, cross-classified by type of solid waste disposal
H18. Occupied housing units, by type, cross-classified by type of lighting
H19. Occupied housing units, by type, cross-classified by availability and type of cooking facilities
H20. Occupied housing units, by type, cross-classified by availabilty of bathing facilities
H21. Households in housing units, by type of housing unit, cross-classified by tenure of household and, for tenant households, ownership of housing unit occupied
H22. Households in housing units, by type of housing unit, cross-classified by type of owner of the housing unit, availability of piped water and availability of toilet facilities
H23. Renting households in housing units, whether spce occupied is by rent paid, cross-classified by type of owner of the housing unit, furnished or unfurnished and tenure of the household head
H24. Renting households, classified by whether space occupied is furnished or unfurnished and amount of rent paid monthly by the household, cross-classified by type of housing unit and number of households in housing unit
H25. Rented housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit and the number of rooms
H26. Rented housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit, water supply system and toilet facilities
H27. Occupied housing units, by type, cross-classified by available floor area and number of occupants

H1 Households, by broad types of living quarters and number of homeless households

Geographical division [1] *and unit of tabulation*	**Total house-holds**	*Type of living quarters*			*Homeless*
		Housing unit	*Collective living quarters*	*Not stated*	
Total households					

For illustrative purposes, households in occupied housing units are shown as the units of tabulation in this outline. Similar tables should be prepared using housing units, family nuclei and persons as units of tabulation.

Units of tabulation: households; living quarters; family nuclei; persons
Living quarters included: all living quarters (para. 2.320)
Households, family nuclei and persons included: all households and family nuclei and persons in households (paras. 2.402-2.406)
Classifications:
(a) Type of living quarters (paras. 2.327-2.328)
(b) Homeless (para. 1.328): separate class for the homeless

This is a broad summary table designed to show in very general terms the type of housing occupied by households and the number of households that are homeless. It provides background information as well as a control for preparation of more detailed tabulations for the categories shown. In fact, the magnitude of the number of households that occupy collective living quarters or are homeless and their geographical distribution provide an indication of the extent to which more detailed tabulations for these groups need to be prepared.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H2 Households in occupied housing units, by type of housing unit

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of housing unit*							
		Con-ventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not intended for habitation*	*Other marginal*	
Total households									

For illustrative purposes, households in occupied housing units are shown as the units of tabulation in this outline. Similar tables should be prepared using housing units, family nuclei and persons as units of tabulation.

Units of tabulation: households; living quarters; family nuclei; persons
Living quarters included: housing units (para 2.331)
Households, family nuclei and persons included: households, family nuclei and persons occupying housing units (paras. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)

There is wide agreement concerning the usefulness of this tabulation or variants of it. Its most important function is to make a broad distinction between various types of housing according to the level of housing standards. Also, its purpose is to describe the occupants in terms of aggregates, households and family nuclei. The tabulation is of primary importance for the formulation of housing programmes and is a prerequisite of calculation of indicators on housing conditions.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H3 Households in occupied housing units, by type of housing unit, cross-classified by type of household

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of housing unit*							
		Conven-tional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not intended for habitation*	*Other marginal*	
Total households									
Type of household									
One-person									
Nuclear									
Extended									
Composite									
Not stated									

Units of tabulation: households
Households included: households occupying housing units
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Type of household (para. 2.82)

This tabulation shows the type of household according to the type of housing units occupied. In itself, the tabulation provides useful insights into the housing patterns of the population. It could also be usefully combined with other tabulations to furnish a more detailed description of households in relation to certain aspects of housing, for example, characteristics of the head of household (tabulations H5 and H6), number of rooms occupied or number of households occupying the housing unit (tabulation H12).

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H4 Households in collective living quarters, by type of living quarters

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of collective living quarters*				
		Hotel, rooming or other lodging house	*Institution*	*Camp*	*Other collective living quarters*	*Not stated*
Total households						

For illustrative purposes, households in collective living quarters are shown as the units of tabulation in this outline. Similar tables could be prepared using collective living quarters, family nuclei and persons in collective living quarters as units of tabulation.

Units of tabulation: households; living quarters; family nuclei; persons
Living quarters included: collective living quarters (para. 2.355)
Households, family nuclei and persons included: households, family nuclei and persons occupying collective living quarters (paras. 2.402-2.406)
Classifications:
(a) Type of collective living quarters (paras. 2.358-2.365)

Whether or not this table is processed may depend upon the information provided in tabulation H1, which shows the extent to which households occupy collective living quarters as well as geographical distribution of such households. Based on this information, it can be decided whether a tabulation by type of collective living quarters is necessary, for what geographical areas it should be prepared and the cross-classifications and level of detail required. Information concerning the institutional population is not included in this tabulation but information on the number of these persons is available from the population census tabulation programme. Their exclusion from this tabulation facilitates the identification of persons in households occupying collective living quarters.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H5 Households, by type of living quarters, cross-classified by sex and age of head of household

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of living quarters*								
		Type of housing unit							*Collective living quarters*	*Not stated*
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*				
						Improvised	*Permanent but not intended for habitation*	*Other marginal*		
Total households										
Male head of household										
Under 15 years										
15-24 years										
25-34 years										
35-44 years										
45-54 years										
55-64 years										
65-74 years										
75 years and over										
Female head of household										
(Age groups as above)										

For illustrative purposes, households are shown as the units of tabulation in this outline. A similar table should be prepared using persons in household as units of tabulation.

Units of tabulation: households; persons
Living quarters included: all living quarters
Households and persons included: all households and persons living in households (paras. 2.402-2.406)
Classifications:
(a) Type of living quarters (paras. 2.327-2.328)
(b) Sex of head of household (para. 2.86)
(c) Age of head of household (paras. 2.87-2.95)

It is assumed that the economic and demographic data required for housing tabulations will be obtained from the population census. In selecting characteristics to be used, the primary consideration should be their efficiency in providing insight into the housing requirements of the population as well as an indication of the possibilities that exist for meeting these requirements. This tabulation provides one component needed to compute headship rates specific for age and sex for the projection of number of households.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H6 Households, by type of living quarters, cross-classified by type of activity, occupation and sex of head of household

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of living quarters*								
		Type of housing unit							*Collective living quarters*	*Not stated*
		Conven-tional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*				
						Improvised	*Permanent but not intended for habitation*	*Other marginal*		
Total households										
Economically active head of household										
Employed										
Unemployed										
Male										
Employed										
Unemployed										
Female										
Employed										
Unemployed										
Occupation - major group 01										
Male										
Female										
Head of household not economically active										
Male										
Female										
Economic activity not stated										

For illustrative purposes, households are shown as the units of tabulation in this outline. A similar table should be prepared using persons in household as units of tabulation.

Units of tabulation: households; persons
Living quarters included: all living quarters
Households and persons included: all households and persons living in households (paras. 2.402-2.406)
Classifications:
(a) Type of living quarters (paras. 2.327-2.328)
(b) Occupation of head of household (para. 2.212): according to, or convertible to, the major groups of the International Labour Organization's International Standard Classification of Occupations, 1988
(c) Sex of head of household (para. 2.86)
(d) Type of activity of head of household (paras. 2.168-2.208)

The relationships established in this tabulation provide data on the type of activity, occupation and sex of heads of households occupying each type of living quarters, together with the number of households and persons in each of the categories established. The tabulation attempts to isolate population groups in need of housing in terms of the occupation of economically active heads of households and whether the head is employed or not. In the absence of the data on income, which are not normally available in the population census, this tabulation may provide at least a general indication of socio-economic level. For the purpose of this presentation, only the total economically active heads of household by sex are shown according to whether they are employed or unemployed. Where the number of unemployed is substantial, it may be useful to introduce the classification employed/unemployed for each occupational group.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H7 Homeless households, by age and sex of head of household

Geographical division and unit of tabulation	**Total house-holds**	*Age of head of household*								
		Under 15 years	*15-24 years*	*25-34 years*	*35-44 years*	*45-54 years*	*55-64 years*	*65-74 years*	*Over 75 years*	*Age un-known*
Total households										
Male head of household										
Female head of household										

For illustrative purposes, homeless households are shown as the units of tabulation in this outline. A similar table should be prepared using homeless persons as units of tabulation.

Units of tabulation: households; persons
Households and persons included: homeless households and persons (para. 1.328)
Classifications:
(a) Geographical division (para. 3.21): depending on national needs
(b) Sex of head of household (para. 2.86)
(c) Age of head of household (paras. 2.87-2.95)

This tabulation is prepared on the basis of the information furnished by tabulation H1 on the number of homeless households and persons and their geographical location. This information provides a basis for deciding what further tabulations of the homeless should be prepared, the most appropriate geographical areas for which the data should be tabulated and the household characteristics that should be included as well as the level of detail.

H8 Vacant conventional and basic dwellings, by type of vacancy

Geographical division[1] *and unit of tabulation*	**Total dwellings**	*Type of vacancy*					
		Seasonally vacant	*Non-seasonally vacant*				*Not stated*
			For rent	*For sale*	*For demo-lition*	*Other*	
Total dwellings							
Conventional dwellings							
Basic dwellings							

Units of tabulation: living quarters
Living quarters included: vacant conventional dwellings; vacant basic dwellings (paras. 2.366-2.369)
Classifications:
(a) Type of vacancy (para. 2.369)

This tabulation confines itself to data relating to conventional and basic dwellings because all other types of housing are required, by definition, to be occupied in order to fall within the scope of the census; a classification by occupancy would not therefore be applicable to them. In some housing censuses, vacancy information is recorded during the listing of sets of living quarters and summaries of these lists provide the aggregates furnished by this tabulation, although generally not in detail as far as reasons for vacancy are concerned. Such a procedure may provide an economic means of obtaining data, though every effort should be made to collect information in detail on vacant conventional and basic dwellings.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H9 Conventional and basic dwellings, by year (or period) of construction of building (in which dwelling is located), cross-classified by type of building and construction material of outer walls

Geographical division,[1] *type of building and construction material of walls*	**Total dwellings**	*Year or period of building construction*									
		Year prior to census[2]						*Period*[3]			*Not stated*
		0	*1*	*2*	*...*	*8*	*9*	*I*	*...*	*IV*	
Total dwellings											
Building coextensive with a single housing unit											
Material of walls:											
Material A											
Material B											
Material C											
Building coextensive with a single housing unit - detached											
Material of walls (as above)											
Building coextensive with a single housing unit - attached											
Material of walls (as above)											
Building with more than 1 unit											
Material of walls (as above)											
Building with more than 1 unit - up to 2 floors											
Material of walls (as above)											
Building with more than 1 unit - from 3-10 floors											
Material of walls (as above)											
Building with more than 1 unit - 11 floors and over											
Material of walls (as above)											
Building for persons living in institutions											
Material of walls (as above)											
All other types of buildings											
Material of walls (as above)											
Not stated											
Conventional dwellings											
(Classifications of buildings and materials of walls as above)											
Basic dwellings											
(Classifications of buildings and materials of walls as above)											

Units of tabulation: living quarters
Living quarters included: conventional and basic dwellings (paras. 2.333-2.338)
Classifications:
(a) Construction material of outer walls (paras. 2.304-2.306): construction material of the walls (subclassified into types of construction material of significance for permanence and durability)
(b) Type of building (paras. 2.299-2.302)
(c) Year or period of construction (paras. 2.307-2.311): single years for buildings constructed during the intercensal period immediately preceding (if it does not exceed 10 years) or during the preceding 10 years (where the intercensal period exceeds 10 years or where no previous census has been carried out); specified period for buildings constructed prior to this

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i), (ii)* and *(iii).*

[2] Census year (0) and years preceding the census year.

[3] See paragraph 2.307.

This tabulation provides information on the number of dwellings by type of building in which the dwelling is located and by material of construction of the walls of the building cross-classified by the year or period of construction of the building. The inventory considered in terms of age and type of building provides a basis for estimating maintenance costs; it also provides insight into the housing patterns of the population, a factor that experience has shown should not be neglected in formulating housing programmes. The question whether to include only conventional and basic dwellings in the tabulation or other types of living quarters as well will depend upon the importance of the latter as far as the overall housing situation is concerned. In tropical countries where a substantial proportion of the population lives in housing units constructed of locally available material such as bamboo, palm, thatch and so forth, information on the rate of construction of temporary units may be considered sufficiently important for them to be included. Mobile and marginal units are not included, since the year or period of construction is of varying significance depending upon the type of unit.

The tabulation includes material of construction of external walls only, since this appears to be of the utmost significance as an indicator of durability. Information on the construction material of the roof and floor is also frequently collected in national housing censuses, particularly information on the former, but certain inconsistencies and complications have been noticed while tabulating construction material for more than one element of the dwelling.

H10 Conventional and basic dwellings, by number of dwellings in the building

Geographical division[1] *and units of tabulation*	**Total dwellings**	*Number of dwellings in the building*						
		1	*2*	*3-9*	*10-49*	*...*	*...*	*Not stated*
Total dwellings								
Conventional dwellings								
Basic dwellings								

Units of tabulation: living quarters
Living quarters included: conventional and basic dwellings (paras. 2.333-2.338)
Classifications:
(a) Number of dwellings per building: 1, 2, 3-9, 10-49 ... according to the needs of the country or area

A distribution of dwellings by the number of dwellings in the building in which dwellings are located provides a useful insight into the housing patterns of the population. The information required for this tabulation would normally be available from census control lists and would therefore not require any additional collection of data. This tabulation would normally be of significance only in urban areas and for localities of a certain size. Determination of the size of the locality as well as the distribution used in the tabulation would depend upon housing characteristics in the country concerned.

[1] Each principal locality.

H11 Housing units, by number of rooms,[1] cross-classified by type of housing unit and number of occupants per housing unit

Geographical division,[2] type of housing unit and number of occupants	**Total housing units**	*Housing units with the following number of rooms[1]*						
		1	*2*	*3*	*...*	*9*	*10+*	*Not stated*
Total housing units								
Housing units with the following number of occupants								
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10+								
Conventional dwellings with the following number of occupants								
(Classification of occupants as above)								
Basic dwellings								
(Classification of occupants as above)								
Temporary dwellings								
(Classification of occupants 1-10+)[3]								
Mobile housing units								
(Classification of occupants 1-10+)[3]								
Marginal housing units								
(Classification of occupants 1-10+)[3]								
Improvised housing units								
(Classification of occupants 1-10+)[3]								
Permanent but not for human habitation								
(Classification of occupants 1-10+)[3]								
Other marginal								
(Classification of occupants 1-10+)[3]								
Not stated								

Units of tabulation: living quarters
Living quarters included: housing units (para. 2.331)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Number of occupants per housing unit (para. 2.407)
(c) Number of rooms per housing unit (paras. 2.375-2.377)

This tabulation provides for the manual or automatic selection of data concerning any desired level of density considered to be of significance, from extreme overcrowding to under-occupancy. In establishing the statistical indicators on housing conditions, the Statistical Commission and the Inter-Agency Working Party on Statistics for Social Programmes agreed that dwellings with densities of three or more persons per room should be considered overcrowded under any circumstances. For national use, this level may be raised or lowered according to circumstances; levels set for urban areas may be different from those for rural areas (the outdoor spaces in rural areas are sometimes considered to offset, to some extent, the high densities prevailing within the housing units).

[1] Excluding rooms used wholly for business or professional purposes.

[2] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

[3] Since by definition it is required that housing units other than conventional and basic dwellings be occupied in order to be included in the census, category 0 is not applicable.

H12 Households in housing units, by type of housing unit occupied, cross-classified by number of households and number of rooms per housing unit

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of housing unit*						
		Conven-tional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*		*Not stated*
						Impro-vised	*Permanent but not for habitation*	*Other marginal*
Total households								
Households with the following number of households per housing unit :								
1								
In housing unit with the following number of rooms :								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10+								
2								
(Classification of number of rooms as above)								
3+								
(Classification of number of rooms as above)								
Not stated								

For illustrative purposes, households in housing unit are shown as unit of tabulation in this outline. A similar table should be prepared using family nuclei as units of tabulation.

Units of tabulation: households; family nuclei
Households and family nuclei included: households and family nuclei occupying a housing unit (paras. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Number of households per housing unit (paras. 2.402-2.406)
(c) Number of rooms per housing unit (paras. 2.375-2.377)

This tabulation provides information on the number of households that are sharing housing units with other households and thus provides an important basis for estimating housing needs. The importance of a separate housing unit for each household that desires one is widely recognized and is discussed under the uses for tabulation H2. Tabulation H23, which shows the number of subtenant households, provides similar information, since subtenant households are households that share a housing unit with one or more households. However, this tabulation provides additional information, since it shows the number of households that occupy the shared units plus the number of rooms in the housing units.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H13 Housing units, by type of housing unit occupied, cross-classified by water supply system

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing units*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
Piped water inside the unit									
From the community scheme									
From private source									
Piped water outside the unit but within 200 metres									
From the community scheme									
For exclusive use									
Shared									
From private source									
For exclusive use									
Shared									
Without piped water (including piped water beyond 200 metres)									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: housing units (para. 2.331)
Households and persons included: households and persons occupying housing units
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Water supply system (paras. 2.381-2.383)

From this tabulation, information may be derived on the number of persons and the number of households with ready access to a protected water supply as well as the availability of piped water for each class of housing units. The classification of the source of the water supply in this tabulation is limited to the community scheme or a private source. Many countries have found it useful to further elaborate this classification in order to provide more detailed information on the source of the water supply (see tabulation H14). It is recommended that data be tabulated in geographical detail because of the importance of the topic and the use to which the information yielded may be put.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H14 Housing units, by type of housing unit occupied, cross-classified by water supply system and source of water supply

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
Piped water inside the unit									
Piped community-wide scheme									
Catchment tank									
Public well									
Private well									
River, spring									
Piped water outside the unit, but within 200 metres									
Piped community-wide scheme									
Catchment tank									
Public well									
Private well									
River, spring									
Without piped water (including piped water beyond 200 metres)									
Piped community-wide scheme [2]									
Catchment tank									
Public well									
Private well									
River, spring									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: housing units (para. 2.331)
Households and persons included: households and persons occupying housing units (para. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Water supply system (paras. 2.381-2.383)
(c) Source of water supply (para. 2.381): on the basis of most frequent sources in country or area, but may include piped community-wide system; catchment tank; public well; private well; river, spring; and so forth

The classification of water supply systems as outlined in tabulation H13 already covers several general categories of sources of water supply. This tabulation displays a more detailed classification of water supply, which may be expanded according to the needs of a particular country or area. Alternatively, in order to avoid producing a table with many blank cells, it may be useful to collect and tabulate data on source of water supply only for those sets of living quarters that report either a piped water supply outside the housing unit or no piped water available within 200 metres from the housing unit. While all housing units with a piped water supply inside do not necessarily obtain the water from a community supply, there would tend to be a greater variety of sources from those either with piped water outside or without piped water, and the source of water in these cases would also seem to be of greater concern.

[1] Geographical division according to the need of country or areas concerned.

[2] Referring to living quarters whose occupants obtain water from a piped community-wide system located beyond 200 metres from the housing unit.

H15 Housing units, by type of housing unit occupied, cross-classified by type of toilet facilities

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*						
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*		*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*
Total housing units								
With toilet within the housing unit								
Flush toilet								
Non-flush toilet								
With toilet outside the housing unit								
Flush toilet								
For exclusive use								
Shared								
Non-flush toilet								
For exclusive use								
Shared								
Without toilet								
Not stated								

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: housing units
Households and persons included: households and persons occupying housing units (paras. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Toilet facilities (paras. 2.384-2.389)

From this tabulation, data may be obtained on the number of housing units by type with the number of occupants and the type of toilet facilities available to them. The tabulation of toilet facilities shown provides the minimum data required for an evaluation of living quarters according to the facilities available. The information for dwellings is required for the computation of indicators of housing and its environment. If the number of sets of collective living quarters is large, it may be useful to prepare similar tabulations by type of collective living quarters. In fact, information concerning the availability of toilet facilities in institutions, hotels and so on is frequently collected in housing censuses. With respect to these units, however, separate tabulations that would also show the number of toilets in relation to the number of occupants may be more useful than information that merely indicates the availability of toilets and the type of toilet. Similar information may be tabulated for housing units occupied by more than a certain number of households. In many countries the classification has been elaborated to provide information on availability of particular types of toilets (other than flush) that are prevalent and characteristic of the country or area concerned and imply varying degrees of efficiency from a sanitary point of view.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H16 Housing units, by type of housing unit occupied, cross-classified by type of toilet and type of sewage disposal

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
With toilet within the housing unit									
Flush toilet									
Connected to a public sewerage plant									
Connected to a private sewerage plant									
Other									
Non-flush toilet									
Connected to a public sewerage plant									
Connected to a private sewerage plant									
Other									
With toilet outside the housing unit									
Flush toilet									
Connected to a public sewerage plant									
Connected to a private sewerage plant									
Other									
Non-flush toilet									
Connected to a public sewerage plant									
Connected to a private sewerage plant									
Other									
Without toilet									
Not stated									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: housing units (para. 2.331)
Households and persons included: households and persons occupying housing units (paras. 2.402-2.406).
Classifications:
(a) *Type of housing unit (paras. 2.333-2.354)*
(b) Toilet (paras. 2.384-2.389)
(c) Sewage disposal system (para. 2.388)

This tabulation provides information on the type of toilet and the type of sewage disposal system. As emphasized in tabulation H15, toilet and sewage disposal facilities have an extremely important impact on public health and on maintaining a safe environment. As for the classification of types of sewage disposal systems, it consists of broad categories and may be further elaborated on the basis of prevalent systems in a specific country or area.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H17 Housing units, by type of housing unit occupied, cross-classified by type of solid waste disposal

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
Solid waste disposed of by household is collected on a regular basis by authorized collectors									
Solid waste disposed of by household is collected on an irregular basis by authorized collectors									
Solid waste disposed of by household is collected on a regular or irregular basis by self-appointed collectors									
Household disposes of its solid waste in a local dump which is supervised by local authorities									
Household disposes of its solid waste in a local dump which is not supervised by local authorities									
Other arrangements (including incineration of solid waste by the household)									
Not stated									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: housing units (para. 2.331)
Households and persons included: households and persons occupying housing units (paras. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Solid waste disposal (paras. 2.400-2.401)

This tabulation provides information on the type of solid waste disposal as defined in paragraph 2.400. Disposal of solid waste and facilities for disposing of it have an extremely important impact on public health and on maintaining a safe environment. As for the classification of types of solid waste disposal, it consists of broad categories and may be further elaborated on the basis of prevalent systems in a specific country or area.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H18 Occupied housing units, by type, cross-classified by type of lighting

Geographical division,[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing units*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
Type of lighting									
Electricity									
Gas									
Oil lamp									
(Other types of lighting of significance to the country or area concerned)									
Not stated									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; persons
Living quarters included: occupied housing units (para. 2.331)
Households and persons included: persons occupying housing units (para. 2.407)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Type of lighting (para. 2.398-2.399)

Countries and areas in all regions attach considerable importance to the source of energy used for lighting. This tabulation could provide planners with a useful indication of areas where community lighting needs to be extended. For housing units lit by electricity, additional information may be tabulated to show whether the electricity comes from a community supply, generating plant or some other source (industrial plant, mine and so forth).

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H19 Occupied housing units, by type, cross-classified by availability and type of cooking facilities

Geographical division[2] *and unit of tabulation*	**Total housing units**	*Type of housing unit*						
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*		*Not stated*
						Improvised but not for habitation	*Permanent other marginal*	
Total housing units								
Availability of kitchen or other space reserved for cooking								
With kitchen within housing unit								
With other space for cooking within housing unit								
Without kitchen or other space for cooking within the housing unit								
Kitchen or other space for cooking available outside unit								
For exclusive use								
Shared								
No kitchen or other space for cooking available								
Not stated								
Fuel used for cooking								
Electricity								
Gas								
...								
Not stated								
Equipment used for cooking								
Stove								
Hotplate								
Open fire								
Not stated								

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: occupied housing units (para. 2.331)
Households and persons included: households and persons occupying housing unite (para. 2.407)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Availability of kitchen or other space reserved for cooking (paras. 2.392-2.397)
(c) Fuel use for cooking (para. 2.424)
(d) Equipment used for cooking (para. 2.395)

The classifications used in this tabulation for equipment and fuel used for cooking should be formulated to conform to the types of equipment and types of fuel normally used in the country concerned. Data on fuel may refer to the fuel most frequently used and it may be confined to the fuel used for preparing the principal meals. If information has been gathered on the number of kitchens or kitchenettes or the number of stoves in housing units occupied by more than a certain number of households and for collective living quarters, such as hotels, boarding houses and multi-household living quarters, it would be useful to tabulate this information according to the type of living quarters and the number of households.

[2] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H20 Occupied housing units, by type, cross-classified by availability of bathing facilities

Geographical division[1] *and unit of tabulation*	**Total housing units**	*Type of housing unit*							
		Conventional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Improvised	*Permanent but not for habitation*	*Other marginal*	
Total housing units									
Availability of bathing facilities									
With fixed bath or shower within housing unit									
Without fixed bath or shower within the housing unit									
Fixed bath or shower available outside unit									
For exclusive use									
Shared									
No fixed bath or shower available									
Not stated									

For illustrative purposes, housing units are shown as unit of tabulation in this outline. A similar table should be prepared using households and persons as units of tabulation.

Units of tabulation: housing units; households; persons
Living quarters included: occupied housing units (para. 2.331)
Households and persons included: households and persons occupying housing units (para. 2.407)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Bathing facilities (paras. 2.390-2.391)

This tabulation is intended to provide data on bathing facilities. If additional information has been collected on the availability of hot water for bathing purposes or on cold water only, this information may be included in the tabulation. Information may also be collected that shows whether the occupants of housing units reported as having no fixed bath or shower share the facilities of another housing unit, use a public facility or have no access to bathing facilities. In such cases, the tabulation may be further expanded to include appropriate classifications for this information. If information has been gathered (as suggested in para. 2.391) on the number of fixed baths or showers in housing units occupied by more than a certain number of households and for collective living quarters, such as hotels, boarding houses and multi-household living quarters, it would be useful to tabulate this information according to the type of living quarters and the number of households.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H21 Households in housing units, by type of housing unit, cross-classified by tenure of household and, for tenant households, ownership of housing unit occupied

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of housing unit*							
		Conven-tional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*			*Not stated*
						Impro-vised	*Permanent but not for habitation*	*Other marginal*	
Total households									
Tenure - member of household:									
Owns a housing unit									
Rents all or part of housing unit as:									
Main tenant in									
Publicly owned housing unit									
Privately owned housing unit									
Subtenant									
Other tenure arrangements									
Not stated									

For illustrative purposes, households are shown as unit of tabulation in this outline. A similar table should be prepared using persons in housing units as units of tabulation.

Units of tabulation: households; persons
Living quarters included: housing units (para. 2.331)
Households and persons included: households and persons occupying housing units (para. 2.402-2.406)
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Tenure (paras. 2.410-2.412)
(c) Type of ownership (paras. 2.370-2.374)

This tabulation yields data showing the type of tenure under which households occupy their living space. Data are tabulated in terms of households rather than housing units in order to show more clearly the tenure status of households sharing housing units. The number of owner-occupied housing units can be obtained from the tabulation using the corresponding figures for owner households in each category; an approximation for rented units could be obtained by subtracting the number of owner-occupied units from the total occupied housing units shown in tabulations H18, H19 and H20. Type of ownership of the housing unit occupied is shown in this table for renting households. Several variations of the classification of tenure have been found useful. Tenure data are sometimes classified so as to distinguish the tenure under which the living quarters are occupied from the tenure of land upon which they stand (in some countries such a classification may be of special significance). Owner-occupants are shown in some cases according to whether the housing unit is fully paid for or whether it is being paid for in instalments or is mortgaged; rental data are subclassified to show separate information for accommodation rented unfurnished and accommodation rented furnished.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H22 Households in housing units, by type of housing unit, cross-classified by type of owner of the housing unit, availability of piped water and availability of toilet facilities

Geographical division[1] *and unit of tabulation*	**Total house-holds**	*Type of housing unit*						
		Conven-tional dwelling	*Basic dwelling*	*Temporary dwelling*	*Mobile housing unit*	*Marginal housing unit*		*Not stated*
						Impro-vised	*Permanent but not for habitation*	*Other marginal*
Total households								
Household owning the housing unit it occupies								
Water supply								
Piped water inside								
Toilet within housing unit								
Toilet outside housing unit								
Without toilet								
Piped water outside but within 100 metres								
(Classification of toilet as shown above)								
Without piped water								
(Classification of toilet as shown above)								
Household occupies a publicly owned housing unit								
(Classifications of water supply and availability of toilet as shown above)								
Household occupies a privately owned housing unit								
(Classifications of water supply and toilet as shown above)								
Ownership not stated								

Units of tabulation: households
Living quarters included: housing units (para. 2.331)
Households and persons included: households occupying housing units (para. 2.402-2.406).
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Type of ownership (paras. 2.370-2.374)
(c) Water supply system (paras. 2.381-2.383)
(d) Toilet facilities (paras. 2.384-2.389)

In this tabulation, households are tabulated according to the type of housing unit occupied, the principal facilities available in the housing unit and the type of owner. The information on toilet and water supply is cross-classified in order to show the number of households by owner of the housing unit according to whether the housing unit has piped water and/or toilet facilities or neither of these types of facilities. Ownership of housing units lacking basic facilities would be of particular interest and it would be useful to know whether these units are occupied by their owners or by tenants.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H23 Renting households in housing units, by rent paid, cross-classified by type of owner of the housing unit, whether space occupied is furnished or unfurnished and tenure of the household

Geographical division[1] *and unit of tabulation*	**Total renting households**	*Monthly rent paid by household*				
		Scale of rents				
		Category 1	*Category 2*	*Category 3*	*Category 4*	*Not stated*
Total renting households in						
Publicly owned housing units						
Privately owned housing units						
Tenant						
Furnished						
Unfurnished						
Subtenant						
Furnished						
Unfurnished						
Tenure not stated						

Units of tabulation: households
Living quarters included: housing units (para. 2.331)
Households: renting households (paras. 2.410-2.412)
Classifications:
(a) Rent paid (para. 2.413): a scale of rents established in accordance with the range of rent normally paid and the currency in the country concerned and an indication of whether the premises are rented furnished or unfurnished
(b) Type of ownership (paras. 2.370-2.374)
(c) Tenure (paras. 2.410-2.412)

In this tabulation, households are tabulated according to the rent paid by the household and the type of owner of the dwelling occupied. Households renting privately owned housing units are further classified according to whether the household is a main tenant or a subtenant and whether the premises are rented furnished or unfurnished. These latter classifications would not normally apply to publicly owned housing units. Data on type of ownership and rent paid provide an opportunity to review the part played by the public and private sectors in providing housing for the population and the cost of such housing.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H24 Renting households, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly by the household, cross-classified by type of housing unit and number of households in housing unit

Geographical division,[1] *type of housing unit and number of occupants*	**Total house-holds**	*Monthly rent paid by household*							
		Unit or part of the unit occupied by household rented furnished				*Unit or part of the unit occupied by household rented unfurnished*			
		Scale of rents				*Scale of rents*			
		1	*2*	*3*	*4*	*1*	*2*	*3*	*4*
Total households in Housing units									
Households with the following number of households per unit									
1									
2									
3+									
Conventional dwellings (Classification of households as above)									
Basic dwellings (Classification of households as above)									
Temporary dwellings (Classification of households as above)									
Mobile housing units (Classification of households as above)									
Marginal housing units (Classification of households as above)									
Improvised housing units (Classification of households as above)									
Permanent but not for human habitation (Classification of households as above)									
Other marginal (Classification of households as above)									
Type of housing unit not stated									

Units of tabulation: households
Living quarters included: housing units (para. 2.331)
Households: renting households (paras. 2.410-2.412))
Classifications:
(a) Furnished or unfurnished housing unit (para. 2.414)
(b) Type of housing unit (paras. 2.333-2.354)
(c) Rent paid (para. 2.413): a scale of rents established in accordance with the range of rent normally paid and the currency in the country concerned
(d) Households per housing unit (paras. 2.402-2.406)

In this tabulation, rent paid refers to the amount paid monthly by the household for the space it occupies. The amount of rent paid is related to the number of households occupying the housing unit and the type of housing unit. However, it may also be related to the occupation or industry of the heads of households, particularly where these characteristics provide a significant indication of the income levels of large sectors of the population. The tabulation may be further expanded to show whether the rent includes the cost of utilities such as gas, electricity and heat, where this information has been collected.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H25 Rented[1] housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit and number of rooms

Geographical division,[2] *type of housing unit and number of occupants*	**Total housing units**	*Monthly rent paid by household*							
		Unit or part of the unit occupied by household rented furnished				*Unit or part of the unit occupied by household rented unfurnished*			
		Scale of rents				*Scale of rents*			
		1	*2*	*3*	*4*	*1*	*2*	*3*	*4*
Total housing units									
Housing units with the following number of rooms									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10+									
Conventional dwellings									
(Classification of rooms as above)									
Basic dwellings									
(Classification of rooms as above)									
Temporary dwelling									
(Classification of rooms as above)									
Mobile housing units									
(Classification of rooms as above)									
Marginal housing units									
(Classification of rooms as above)									
Improvised housing units									
(Classification of rooms as above)									
Permanent but not for human habitation									
(Classification of rooms as above)									
Other marginal									
(Classification of rooms as above)									
Type of housing unit not stated									

Units of tabulation: living quarters
Living quarters included: rented[1] housing units (paras. 3.116-3.118)
Classifications:
(a) Furnished or unfurnished housing unit (para.2.414)
(b) Type of housing unit (paras. 2.333-2.354)
(c) Rent paid (para. 2.413): a scale of rents established in accordance with the range of rent normally paid and the currency in the country concerned
(d) Rooms per housing unit (paras. 2.375-2.377)

In this tabulation, rent paid is related to the number of rooms in the housing unit, since space is an important factor in determining the cost of housing. It may be useful, however, to expand the tabulation so that it includes not only the number of rooms in the housing unit, but also an indication of the availability of certain basic facilities such as piped water, toilet and bathing facilities (see tabulation H26). If information has been collected showing whether or not the rent is controlled, this could usefully be included in the tabulation.

[1] "Rented" in this case means wholly rented and does not refer to housing units occupied by an owner who rents part of the unit to another household.

[2] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H26 Rented[1] housing units, classified by whether space occupied is furnished or unfurnished, and amount of rent paid monthly for the housing unit, cross-classified by type of housing unit, water supply system and toilet facilities

Geographical division,[2] type of housing unit and number of occupants	**Total housing units**	*Monthly rent paid by household*							
		Unit or part of the unit occupied by household rented furnished				*Unit or part of the unit occupied by household rented unfurnished*			
		Scale of rents				*Scale of rents*			
		1	*2*	*3*	*4*	*1*	*2*	*3*	*4*
Total housing units									
Housing units with the following facilities:									
Piped water inside									
Toilet inside									
Toilet outside									
No toilet									
Piped water outside									
(Classification of toilet as above)									
No piped water									
(Classification of toilet as above)									
Conventional dwellings									
(Classification of facilities as above)									
Basic dwellings									
(Classification of .facilities as above)									
Temporary dwelling									
(Classification of .facilities as above)									
Mobile housing units									
(Classification of facilities as above)									
Marginal housing units									
(Classification of facilities as above)									
Improvised housing units									
(Classification of facilities as above)									
Permanent but not for human habitation									
(Classification of facilities as above)									
Other marginal									
(Classification of facilities as above)									
Type of housing unit not stated									

Units of tabulation: living quarters
Living quarters included: rented[1] housing units (paras. 2.410-2.412)
Classifications:
(a) Furnished or unfurnished housing unit (para. 2.414)
(b) Type of housing unit (paras. 2.333-2.354)
(c) Rent paid (para. 2.413)
(d) Water supply system (paras. 2.381-2.383)
(e) Toilet facilities (paras. 2.384-2.389)

Comments concerning the amount of rent paid outlined in connection with tabulation H25 are also applicable to the present tabulation. The purpose of this tabulation is to relate the cost of housing to the adequacy of basic services -- in this case, the availability of piped water and toilet facilities.

[1] "Rented" in this case means wholly rented and does not refer to housing units occupied by an owner who rents part of the unit to another household.

[2] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

H27 Occupied housing units, by type, cross-classified by available floor area and number of occupants

Geographical division,[1] type of housing unit and number of occupants	**Total housing units**	*Floor area (in square metres (m^2))*						*Total floor area*	*Total occupants*	*Floor area (m^2) per occupant*
		Less than 20	*20-29*	*30-39*	...	*100-119*	*120 and over*			
Total housing units										
Conventional dwellings										
Basic dwellings										
Temporary dwellings										
Mobile housing units										
Marginal housing units										
Improvised housing units										
Permanent but not for human habitation										
Other marginal										
Type of housing unit not stated										

Units of tabulation: housing units; persons
Living quarters included: housing units (para. 2.331)
Persons included: persons in housing units
Classifications:
(a) Type of housing unit (paras. 2.333-2.354)
(b) Available floor area (paras. 2.378-2.380)

This tabulation provides information on the total useful area of housing units, the distribution of housing units according to the floor area, the total number of occupants and the average floor area per occupant. That information is required to assess overcrowding and this tabulation is designed to complement the information provided by H11. It is recommended that data be tabulated in geographical detail because of the importance of the topic and the use to which the information yielded may be put. This is particularly important since less crowded and overcrowded housing units may be found in relative proximity to each other. For collective living quarters, it would be more useful to collect information on the useful living floor space per occupant of the collective living quarters. Data should be derived by dividing the total useful floor space by the number of occupants using it.

[1] This table may be compiled for *(i)* total country; *(ii)* each major civil division; *(iii)* each minor civil division; *(iv)* each principal locality. Distinguish between urban and rural for *(i)*, *(ii)* and *(iii)*.

REFERENCES

Ahmed, M. M. (1996). Geographical information system (GIS) and its statistical applications in Egypt. *Journal of Economic Cooperation Among Islamic Countries*, vol. 17, Nos.1-2, pp. 25-39.

Aronoff, S. (1989). *Geographic Information Systems: A Management Perspective*. Ottawa: WDL Publications.

Brass, William (1975). *Methods for Estimating Fertility and Mortality from Limited and Defective Data.* Chapel Hill, North Carolina: International Program of Laboratories for Population Statistics.

Chamie, Mary (1989). Survey design strategies for the study of disability. *World Health Statistics Quarterly*, vol. 42, No.3, pp. 122-140.

_____ (1995). What does morbidity have to do with disability? *Disability and Rehabilitation*, vol. 17, No 7. pp. 323-337.

Clarke, K. (1995). *Analytical and Computer Cartography*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank (1993). *System of National Accounts 1993*. Sales No. E.94.XVII.4.

Date, C. J. (1995). *An Introduction to Database Systems*. Reading, Massachusetts: Addison-Wesley Publishing Company.

Deichmann, U. (1996). *A Review of Spatial Population Database Design and Modeling*, technical report TR-96-3. National Center for Geographic Information and Analysis.

Eurostat, Office of Population Censuses and Surveys (1995*). European Workshop on Census Processing, Fareham, United Kingdom, 6 and 7 March 1995*. Brussels: Eurostat.

Eurostat and Institut national de statistique (1995). *Proceedings of the European Workshop on Dissemination of Census Data, Brussels, Belgium, 4-6 December 1995.*

Eurostat and Statistics Finland (1995). *European Workshop on Using Administrative Data in Population and Housing Censuses, Helsinki, Finland, 9-11 October 1995.*

Feeney, Griffith (1976). Estimating infant mortality rates from child survivorship data by age of mother. *Asian and Pacific Census Newsletter*, vol. 3, No. 2 (November), pp. 12-16.

_____ (1980). Estimating infant mortality trends from child survivorship data. *Population Studies*, vol. XXXIV, No. l (March), pp. l09-128.

_____ (1997). Three challenges for effective utilization of the 2000 round census data. *Technical Notes on Population Statistics and Information Systems* (January). New York: United Nations Statistics Division.

Food and Agriculture Organization of the United Nations (FAO) (1976). *Programme for the 1980 World Census of Agriculture*, FAO Statistics Series, No. 1. Rome: FAO.

_____ (1978). *Collecting Statistics on Agricultural Population and Employment*, FAO Economic and Social Development Papers No. 7. Rome: FAO.

_____ (1995). *Programme for the World Census of Agriculture 2000*, FAO Statistical Development Series, No. 5. Rome: FAO.

French, G. T. (1996). *Understanding the GPS: An Introduction to the Global Positioning System*. GeoResearch, Inc., Bethesda, Maryland, USA.

Horiuchi, Shiro (1991). Assessing the effects of mortality reduction of population ageing. *Population Bulletin of the United Nations*, Nos. 31/32, pp. 38-51. Sales No. E.91.XIII.18. New York: United Nations.

Hungarian Central Statistical Office and United Nations Statistics Division (1992). *Report on International Seminar on Optical Technology for Development of Population Databases, 30 September - 3 October 1992. Budapest, Hungary*. HUN/89/P01/21106REP.

Hussmanns, R., F. Mehran and V. Verma. (1990). *Surveys of the Economically Active Population, Employment,Unemployment and Underemployment: An ILO Manual on Concepts and Methods*. Geneva: International Labour Office.

India, Office of the Registrar General (1995*). 16th Population Census Conference: Compendium of Papers Presented, January 17-20, 1995*. New Delhi, India.

Indonesia, Central Bureau of Statistics, East-West Center and State Ministry for Population/National Family Planning Coordinating Board (1997). *Report on the 17th Population Census Conference, November 4-7, 1996, Jakarta, Indonesia: A Collection of Papers*. Jakarta.

Institut national de la statistique et des études économiques de la France (INSEE) (1987). *Le Recensement de la Population de 1982 en France: Saisie et chiffrement assistés par ordinateur*. Report presented to the Conference of European Statisticians (CES), Belgrade, Yugoslavia, 5-10 October 1997. CES/SEM.21/R.24.

_____ (French National Institute of Statistics and Economic Studies) (1990). *Automatic Coding of Descriptive Data in INSEE Surveys; Use of the QUID System*. CES, ISIS '90.

Institut national d'études démographiques and others (1973). *Sources et analyse des données démographiques: application à l'Afrique d'expression française et à Madagascar*, premiere partie, *Sources des données*; deuxieme partie, *Ajustement de données imparfaites*. Paris.

International Labour Office (1969). *International Standard Classification of Occupations*, revised ed. Geneva.

_____ (1988). *Current International Recommendations on Labour Statistics*. Geneva.

_____ (1988). *Fourteenth International Conference of Labour Statisticians. Report of the Conference. Geneva, 28 October - 6 November 1997*. ICLS/14/D.14.

_____ (1990). *International Standard Classification of Occupations (ISCO-88)*. Geneva: ILO.

_____ (1993). Resolution concerning the International Classification of Status in Employment (ICSE). In *Fifteenth International Conference of Labour Statisticians. Report of the Conference. Geneva, 19-28 January 1993*. ICLS/15/D.6 (Rev.l). Geneva.

_____, Bureau of Statistics (1995). What kind of work do you do? *STAT Working Papers*, No. 95-1 (February). Geneva. Prepared by Eivind Hoffmann from contributions by Peter Elias, Brian Embury and Roger Thomas.

_____ (1996). Statistics on international labour migration. A review of sources and methodological issues. Authored by Eivind Hoffmann and Sophia Lawrence. Geneva.

Korte, G. (1996). *The GIS Book*, 4th ed. Santa Fe, New Mexico: OnWord Press.

Krotki, K., ed. (1978). *Developments in Dual System Estimation of Population Size and Growth*. Alberta, Canada: University of Alberta Press.

Laboratories for Population Statistics (1978). *A Basic Demographic Questionnaire. Data Collection and Analysis in Sample Surveys*, Manual 7. Chapel Hill, North Carolina: The University of North Carolina Press. With summaries in French and Spanish.

Maguire, D. J., M. F. Goodchild and D. W. Rhind (1991). *Geographical Information Systems: Principles and Applications*, vols. 1 and 2. London: Longman Group, Ltd.

National Academy of Sciences, Committee on Population and Demography (1981). *Collecting Data for the Estimation of Fertility and Mortality*, Report No. 6. Washington, D. C.: National Academy Press.

Openshaw, Stan (1995). *Census Users' Handbook*. Cambridge: GeoInformation International. Cambridge, Cambridgeshire, United Kingdom.

Pick, J., E. Butler and S. Tint (1993). Development of a census-based geographic information system for Mexico. International Population Conference of the International Union for the Scientific Study of Population (IUSSP). Montreal, Canada. August.

Plane, D. A., and P. A. Rogerson (1994). *The Geographical Analysis of Population*. New York, New York: John Wiley and Sons, Inc.

Seltzer, William (1973). *Demographic Data Collection. A Summary of Experience*, pp. 8-18. New York: The Population Council.

Star, Jeffrey, and John Estes (1990). *Geographical Information Systems: An Introduction*. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

Sullivan, Jeremiah M. (1972). Models for the estimation of the probability of dying between birth and exact ages of early childhood. *Population Studies*, vol. XXVI, No. 1 (March), pp. 79-97.

Thomas, Ian (1982). *Population Data and Development Planning in Tanzania*. Norwich, United Kingdom: Overseas Development Group, University of East Anglia.

Timaeus, Ian M. (1991). Measurement of adult mortality in less developed countries: A comparative review. *Population Index*, vol. 57, No. 4 (winter), pp. 552-568.

Trusell, James (1975). A re-estimation of the multiplying factors for the Brass technique for determining childhood survival rates. *Population Studies*, vol. 29, No. 1 (March), pp. 97-108.

United Nations (1952). Manuals on Methods of Estimating Population. *Manual I: Methods of Estimating Total Population for Current Dates*, Sales No. E.52.XIII.5.

_____ (1956). Manuals on Methods of Estimating Population. *Manual II: Methods of Appraisal of Quality of Basic Data for Population Estimates*. Sales No. E.56.XIII.2.

_____ (1956). Manuals on Methods of Estimating Population. *Manual III: Methods for Population Projections by Sex and Age.* Sales No. E.56.XIII.3.

_____ (1956). Report of the Statistical Commission on its ninth session. *Official Records of the Economic and Social Council, Twenty-second Session, Supplement No. 7.* E/2876.

_____ (1962). *Statistical Indicators of Housing Conditions.* Statistical Papers, No. 37. Sales No. E.62.XVII.7.

_____ (1965). *General Principles for National Programmes of Population Projections as Aids to Development Planning*. Sales No. E.65.XIII.2.

_____ (1969). *Methodology and Evaluation of Population Registers and Similar Systems.* Studies in Methods, No. 15. Sales No. E.69.XVII.15.

_____ (1969). *Methods of Analysing Census Data on Economic Activities of the Population*. Sales No. E.69.XIII.2.

_____ (1970). Manuals on Methods of Estimating Population. *Manual VI: Methods of Measuring Internal Migration.* Sales No. E.70.XIII.3.

_____ (1973). Manuals on Methods of Estimating Population. *Manual VII: Methods of Projecting Households and Families*. Sales No. E.73.XIII.2.

_____ (1973). P*rinciples and Recommendations for a Vital Statistics System.* Sales No. E.73.XVII.9.

_____ (1977). *The Organization of National Statistical Services: A Review of Major Issues.* Studies in Methods, No. 21. Sales No. E.77.XVII.5.

_____ (1977). *Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households.* Sales No. E.77.XVII.11 and corrigendum. Currently under revision.

_____ (1978). *Social Indicators: Preliminary Guidelines and Illustrative Series*. Statistical Papers, No. 63. Sales No. E.78.XVII.8.

_____ (1979). *Improving Social Statistics in Developing Countries: Conceptual Framework and Methods.* Studies in Methods, No. 25. Sales No. E.79.XVII.12.

_____ (1979). *The Development of Integrated Data Bases for Social, Economic and Demographic Statistics.* Studies in Methods. No. 27. Sales No. E.79.XVII.14.

_____ (1980). *Handbook of Statistical Organizations: A Study on the Organization of National Statistical Services and Related Management Issues.* Studies in Methods, No. 28. Sales No. E.79.XVII.17.

_____ (1980). *Principles and Recommendations for Population and Housing Censuses*. Statistical Papers, No. 67. Sales No. E.80.XVII.8.

_____ (1983). *Handbook of Household Surveys (Revised Edition).* Studies in Methods, No. 31. Sales No. E.83.XVII.13.

_____ (1983). *Manual X: Indirect Techniques for Demographic Estimation*. Population Studies, No. 81. Sales No. E.83.XIII.2.

_____ (1984). *Compiling Social Indicators on the Situation of Women*. Studies in Methods, No. 32. Sales No. E.84.XVII.2.

_____ (1984). *Data Bases for Mortality Measurement*. Population Studies, No. 84. Sales No. E.83.XIII.3.

_____ (1984). *Population Projections: Methodology of the United Nations: Papers of the United Nations Ad Hoc Expert Group on Demographic Projections, United Nations Headquarters, 16-19 November 1981*. Population Studies, No. 83, Sales No. E.83.XIII.7.

_____ (1985). *Socio-economic Differentials in Child Mortality in Developing Countries.* Sales No.E.85.XIII.7.

_____ (1987). *Training Users and Producers in Compiling Statistics and Indicators on Women in Development*. Studies in Methods, No. 45. Sales No. E.87.XVII.6.

_____ (1988). *First Marriage: Patterns and Determinants*. ST/ESA/SER.R/76.

_____ (1988). *Improving Statistics and Indicators on Women Using Household Surveys*. Studies in Methods, No. 48. Sales No. E.88.XVII.11.

_____ (1988). *Mortality of Children under Age 5: World Estimates and Projections, 1950-2025*. Population Studies, No. 105. Sales No.E.88.XIII.4.

_____ (1989). *Handbook on Social Indicators.* Studies in Methods, No. 49. Sales No. E. 89.XVIII.6.

_____ (1989). *Household Income and Expenditure Surveys: A Technical Study*. DP/UN/INT-88-X01/6E.

_____ (1989). *Projection Methods for Integrating Population Variables into Development Planning, v*ol. I: *Methods for Comprehensive Planning, Module One: Conceptual Issues and Methods for Preparing Demographic Projections*. ST/ESA/SER.R/90.

_____ (1989). *Technical Papers Presented at the First Interregional Workshop on Population Databases and Related Topics, Voorburg, Netherlands, 6-10 November 1989*. Department of Technical Cooperation for Development and Statistical Office (INT-88-P07/1).

_____ (1990). *Disability Statistics Compendium*. Statistics on Special Population Groups, No. 4. Sales No. E.90.XVII.17.

_____ (1990). *Handbook for the Development of National Statistical Databases on Women and Development*. Social Statistics and Indicators, No. 6. Sales No. E. 89.XVII.9.

_____ (1990). *International Standard Industrial Classification of All Economic Activities*. Statistical Papers, No. 4/Rev.3. Sales No. E.90.XVII.11.

_____ (1990). *Projection Methods for Integrating Population Variables into Development Planning, v*ol. I: *Methods for Comprehensive Planning, Module Two: Methods for Prepaing School Enrolment, Labour Force and Employment Projections.* ST/ESA/SER.R/90/Add.1.

_____ (1990). *Step-by-Step Guide to Estimation of Child Mortality*. Population Studies, No. 109. Sales No. E.89.XIII.9.

_____ (1990). *Supplementary Principles and Recommendations for Population and Housing Censuses.* Statistical Papers, No. 67/Add.1. Sales No. E.90.XVII.9.

_____ (1991). *The Second Interregional Workshop on Population Data Bases and Related Topics*. *Technical Papers Presented at the First Interregional Workshop, Jakarta, Indonesia, 14-19 January 1991*. Department of Technical Cooperation for Development and Statistical Office (INT-88-P07/2).

_____ (1991). *The Third Interregional Workshop on Population Databases and Related Topics. Harare, Zimbabwe, 9-13 December 1991*. Department of Economic and Social Development (INT-88-P07/3 - DESD/SEM.92/3).

_____ (1992). *Handbook of Population and Housing Censuses, Part I : Planning, Organization and Administration of Population and Housing Censuses*. Studies in Methods, No. 54 Sales No. E.92.XVII.8.

_____ (1992). *Handbook of Population and Housing Censuses, Part II: Demographic and Social Characteristics*. Studies in Methods. No. 54. Sales No. E.91.XVII.9.

_____ (1992). *The Follow-up Method in Demographic Sample Surveys*. Studies in Methods, No. 41.Sales No. E. 91.XVII.11.

_____ (1993). *Housing in the World: Graphical Presentation of Statitical Data.* Studies in Methods, No. 43. Sales No. E.93.XVII.10.

_____ (1993). *Internal Migration of Women in Developing Countries.* Sales No. E.94.XIII.3.

_____ (1993). Standard Rules on the Equalization of Opportunities for Persons with Disabilities, Adopted by the United Nations General Assembly at its forty-eighth session in its resolution 48/96 of 20 December 1993 and contained in the annex thereto.

_____ (1994). *AIDS and the Demography of Africa*. Sales No. E.94.XIII.11.

_____ (1994). *PopMap: User's Guide and Reference Manual*. Sales No. E.94.XVII.12. http://www.un.org/Depts/unsd/softproj/software/popmap.htm

_____ (1995). *CD-ROM Publishing Guide*. New York: Working Committee of the Publications Board, Working Group on Electronic Publishing. ST/ESA/STAT/111.

_____ (1995). *Compendium of Human Settlements Statistics, 1995.* Sales No. E.95.XVII.11.

_____ (1995). W*istat: Women's Indicators and Statistics Database, Version 3, CD-ROM.* Sales No. E.95.XVII.6.

_____ (1996). *Costing Aspects of Population and Housing Censuses in Selected Countries in the UN/ECE Region*. Statistical Standards and Studies, No. 46. Sales No. E.96.II.E.15.

_____ (1996). *Handbook of Population and Housing Censuses, Part IV: Economic Activity Status*. Studies in Methods, No. 54. Sales No.E.96.XVII.13.

_____ (1996). *Indicators of Sustainable Development Framework and Methodologies.* Sales No. E.96.II.A.16.

_____ (1996) *Manual for the Development of Statistical Information for Disability Programmes and Policies.* Statistics on Special Population Groups, No. 8. Sales No. E.96.XVII.4 and corrigendum.

_____ (1996). *Standard Country or Area Codes for Statistical Use.* Statistical Papers, No. 49, Rev. 3. ST/ESA/STAT/SER.M/49/Rev.3.

_____ (1997). *Geographical Information Systems for Population Statistics*. Studies in Methods, No. 68. Sales No. E.97.XVII.3.

_____ (1997). *Report on the World Social Situation, 1997.* Sales No. E.97.IV.1.

_____ (forthcoming). Guidelines and principles for development of impairment, disability and handicap statistics.

_____ (forthcoming). Recommendations on Statistics of International Migration, Revision 1. ST/ESA/STAT/SER.M/58/Rev.1.

_____, and Economic Commission for Europe, (various dates). Conference of European Statisticians (national reports and note prepared by the Secretariat): work sessions on geographical information systems at (a) Ottawa, Canada, 28-30 September 1993; (b) Voorburg, Netherlands, 27-30 September 1994; (c) Arlington, Virginia, United States of America, 15-18 April 1996.

United Nations and World Health Organization (1991). International statistics on causes of disability. *1990 World Health Statistics Annual*, pp 39-69. Geneva: WHO. Prepared by the United Nations Statistics Division in collaboration with WHO. Reprinted.

United Nations, Economic Commission for Africa (1977). Study on special techniques for enumerating nomads in African censuses and surveys. Conference of African Statisticians at its tenth session. E/CN.14/CAS.10/16.

United Nations, Economic Commission for Europe. Conference of European Statisticians (1998). *Recommendations for the 2000 Censuses of Population and Housing in the ECE region*. Statistical Standards and Studies No. 49. Sales No. 98.II.E.5.

United Nations, Economic Commission for Latin America and the Caribbean, Latin American Demographic Centre (CELADE) (1991). *REDATAM-Plus: User's Manual*, Serie A-201 (LC/DEM/G.90). December.

United Nations, Economic and Social Commission for Asia and the Pacific (1984). *National Migration Surveys, Manuals I-IX: Comparative Study on Migration, Urbanization and Development in ESCAP Region*. Bangkok.

_____ (1989). Report of the Workshop on Computer-Assisted Coding, New Zealand, 17-21 April 1989. STAT/WCA/Rep. 29 May.

United Nations Development Programme (1995). *Human Development Report, 1995*. New York: Oxford University Press.

United Nations Educational, Scientific and Cultural Organization (1995). *World Education Report, 1995.* Paris: Oxford University Press for UNESCO.

_____ (1997). International Standard Classification of Education (ISCED, 1997). See annex II of document 29C/20 of the twenty-ninth session of the General Conference of UNESCO (8 August 1997).

United Nations Population Fund and Netherlands Interdisciplinary Demographic Institute (1996). *Proceedings of the Expert Group Meeting on Innovative Techniques for Population Censuses and Large-Scale Demographic Surveys, The Hague, 22-26 April 1996*. New York and The Hague.

United States Department of Commerce, Bureau of the Census (1978). *Mapping for Censuses and Surveys.* Statistical training document ISP-TR-3. Washington, D. C. Also available in French and Spanish.

_____ (1985). *Evaluating Censuses of Population and Housing.* Statistical trainning document ISP-TR-5. Washington, D. C.

_____ (1993). *Design and Implementation of a Post-Enumeration Survey: Developing Country Example*. Washington, D. C.

Wallgren A., and others (1996). *Graphing Statistics and Data: Creating Better Charts*. Beverly Hills, California: Sage Publications.

Wells, D. (1986). *Guide to GPS Positioning*. Canadian GPS Associates, Fredericton, NB, Canada.

World Health Organization (1980). *International Classification of Impairments, Disabilities, and Handicaps.* Geneva: WHO. Reprinted 1993.

_____ (1991). International Statistics on Causes of Disability. *1990 World Health Statistics Annual.* Geneva: WHO. Reprinted 1993.

_____, Regional Office for Europe and Statistics Netherlands (1996). *Health Interview Survey: Towards International Harmonization of Methods and Instruments,* A. De Bruin, H.S.J. Picavet and A. Nossikov, eds. WHO Regional Publication, European Series, No. 58. Copenhagen and Voorburg, Netherlands.

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