



**PROVISIONAL SUGGESTIONS  
FOR NATIONAL PROGRAMMES OF  
ANALYSIS OF POPULATION CENSUS DATA  
AS AN AID TO PLANNING  
AND POLICY-MAKING**

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## I. INTRODUCTION

One of the most important uses of population census statistics is to provide a part of the factual basis for decisions on questions of public policy and governmental action in economic and social fields. The utility of census statistics in this connexion may be greatly enhanced by analysing them so as to bring out the relevant facts with regard to the growth, distribution and composition of population and manpower, to examine the factors influencing the trends and their likely development in the future and to assess their implications for policy and action. Such analyses play an essential part in assessments of a nation's needs and resources and in the establishment of realistic goals for programmes of economic and social development. They are especially important for countries where the population is increasing rapidly, where large migrations are taking place between rural and urban areas and between different sections of the country, and where the composition of the population and the labour force is changing rapidly with regard to such characteristics as educational level, occupational skills, and industrial attachments, which have an important bearing on possibilities and needs for social and economic action. Such changes are now going on at a rapid pace in many countries, especially in the economically less developed parts of the world.

Many Governments have not taken full advantage of the possibilities of utilizing their census statistics in this way, as an effective aid to policy-making and the planning of economic and social action programmes. In many countries, especially under-developed countries, little study has been made of available census statistics and other demographic data, possibly because the practical usefulness of such research has not been sufficiently appreciated, or because suitably trained personnel was lacking, or because other difficulties stood in the way. The result has been the loss of an important part of the potential return from the investment of public resources in the taking of censuses, and loss of efficiency in governmental efforts towards economic and social development.

Censuses have been taken recently, or will soon be taken, in many countries in connexion with the 1960 World Population Census Programme. In some countries, the first census of population is being taken at this time, so that an opportunity is being created, which was lacking before, for fundamental research on the trends and characteristics of the population. In other countries, the censuses taken in and around 1960 and 1961 will greatly enlarge the possible scope of such research. It is now timely to make provision, as far as is necessary and possible in each country, for avoiding shortcomings in analytical studies based on the results of these censuses, regarding questions that are of direct and substantial interest to the Governments concerned.

With these considerations in mind, the Economic and Social Council, at its thirty-first session (April 1961), adopted a resolution in which the Governments of Member States of the United Nations taking part in the 1960 World Population Census Programme were invited "to consider the utility .... of making whatever arrangements may be necessary and practicable in each country to ensure that

essential analyses of the census results will be carried out, particularly as they relate to important national problems of economic and social development and questions of national demographic, economic and social policy". 1/

The purpose of the present paper is to call attention to some considerations of wide, though not necessarily universal, relevance which, it is believed, will often be found helpful in planning, organizing, and carrying out projects for analysing population census results. The suggestions made here refer to studies relating to topics considered of primary interest to Governments, especially of under-developed countries, in connexion with economic and social policy-making and developmental planning. These suggestions are formulated primarily with reference to the types of data commonly obtained in censuses of under-developed countries, and to problems commonly met in such countries - in the execution of analytical studies. It is believed, however, that many of the considerations mentioned here are also pertinent to more developed countries. While these suggestions refer to research directed toward policy-making and action, it is emphasized that demographic studies based on census statistics and other data need not necessarily be oriented in these particular ways in order to be useful. Research which makes an important contribution to the advancement of science requires no justification in terms of its immediate, practical applications.

The suggestions here put forward are based on the results of discussions at two regional seminars on evaluation, analysis and utilization of population census data, held in Latin America and in Asia and the Far East in 1959 and 1960, respectively, and on the findings of case studies of these problems in five selected countries, carried out co-operatively by the United Nations and the Governments concerned. 2/ A draft which included these suggestions was prepared by the Secretariat, and considered by the Population Commission at its eleventh session (1961). 3/ At the Commission's request, the present provisional text, revised to take account of the Commission's views, is being circulated to interested international and national agencies, organizations, institutions and individuals. 4/ Comments on this provisional text are invited with a view to the preparation of another draft, with further revisions, to be presented to the Population Commission at its twelfth session (1963).

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1/ Official Records of the Economic and Social Council, Thirty-first Session (E/3480), resolution 820 B (XXXI).

2/ "Report of the Seminar on Evaluation and Utilization of Population Census Data in Latin America" (United Nations, E/CN.9/CONF.1/1/Rev.1) and "Report of the Seminar on Evaluation and Utilization of Population Census Data in Asia and the Far East" (United Nations, E/CN.9/CONF.2/1); Case Studies of Arrangements for Evaluation and Utilization of Population Census Results. Report I. The Sudan; Report II. Guatemala; Report III. Ecuador; Report IV. Japan; Report V. Iran (United Nations, ST/SOA/SER.R/1-5, respectively).

3/ "Draft suggestions for national programmes of evaluation and analysis of population census data in under-developed countries" (E/CN.9/161).

4/ Official Records of the Economic and Social Council, Twenty-seventh Session, Supplement No. 3 (E/3451), para. 82.

These considerations are presented as suggestions rather than as recommendations to Governments or to agencies and institutions which may be concerned with demographic studies, since it is recognized that the kinds of studies useful in each country will vary with the circumstances. The suggestions are not aimed at the international standardization of demographic research, although it is considered useful to pay some attention to the advantage of international comparability in the findings of studies carried out in different countries on certain demographic questions.

The scope for analytical studies on various topics obviously depends, among other factors, on the contents of the census tabulations. Although this paper contains some indications of the types of census tabulations that are necessary or useful for certain types of analyses, these indications are not intended as recommendations for the contents of a national programme of census tabulations. "Principles and Recommendations for National Population Censuses", endorsed by the Statistical Commission of the United Nations and published by the United Nations in 1958, contains a list of recommended tabulations. 5/ That publication deals with the essential features of the population census, its relation to other statistical enquiries, the topics on which data should be collected at the census, definitions and classifications of data on each topic, tabulations of census results, and uses of sampling in censuses. The principles and recommendations stated therein have been taken as a basis for the present statement.

If analytical studies of census statistics are to lead to sound conclusions, it is indispensable that the statistics should be tested for accuracy and corrected so far as is feasible. Suggestions for evaluation of the quality of population census data are contained in another document which will be circulated as a companion to the present one. 6/ It is recognized, however, that a close relation exists between the analysis of census data and the evaluation of their accuracy; indeed, at many points the two operations are inseparable. Programmes of analytical studies should be co-ordinated with programmes of evaluation, especially with regard to checks on the internal consistency of the census statistics. Lack of such co-ordination will result in duplication of effort and possibly in lowering of the quality of both evaluation and analysis.

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5/ Statistical Papers, Series M, No. 27 (United Nations publication, Sales No.: 58.XVII.5).

6/ Regional Centre for Demographic Training and Research in Latin America, "Suggestions for National Programmes of Evaluation of Population Census Data".

## II. PLANNING AND ORGANIZATION OF ANALYTICAL WORK

When a census of population is planned, it is important to consider what should be done about the analysis of the results, since the usefulness of the project will depend to a considerable degree on the analyses that are carried out. It would be realistic to consider that the field of work of the census, the processing and publication of the statistics, the evaluation of their quality, and their analysis in relation to questions of major interest to the Government concerned, are all indispensable parts of a comprehensive census programme, since a short-coming in any of these respects detracts seriously from the value of the programme as a whole. Actually, such a comprehensive view has seldom been taken in planning census programmes. Analytical studies, and often quality evaluation as well, have usually been regarded as separate activities, and as a rule little consideration has been given to them when the plans for the census were being drawn up. The result is seen in the failure, in many countries, to make any great use of census data for analytical studies.

In some countries, it may be reasonable to assume that universities or private research institutions will undertake demographic studies on questions of national importance if the census data and other statistics are made available in suitable form. In most under-developed countries, however, such an assumption would not be realistic, since the capacity of existing institutions for demographic research is narrowly limited. In these circumstances, it may be advisable to make specific provisions in the census plan for the most important analytical studies of interest to the Government, including the necessary budgetary provisions to ensure that the studies will be carried out. Such provisions may be justified by the necessity of obtaining the greatest possible value from the considerable expenditure of public funds which a population census requires.

It is highly desirable that analytical studies of census data should be carried out by an agency or institution that maintains a continuing programme of demographic research. Only a staff of specialists continuously engaged in this work can build up the knowledge and experience required for efficient performance at a high level. The lack, in most under-developed countries, of institutions with continuing programmes of research in demography, is one of the main reasons for the insufficient analytical use of census data in these countries up to the present time. Where no such institutionalized programmes of demographic research exist, the possibility of establishing one may well be considered at the time when the plans for a population census are being drawn up, or while the census operations are proceeding.

The most advantageous location or locations for demographic research programmes, within the Government or outside it, will depend on the circumstances in each country. In some countries, it may be considered preferable to develop a continuing programme of such research in the government agency responsible for taking the census of population, but while this arrangement may be the most economical, it does not necessarily yield the most satisfactory results. In other countries, it may be preferable to locate this

work in a central agency for economic and social planning or in some other government department. In still other cases, it may be preferable to develop demographic research in a university or scientific institution, with suitable arrangements for co-operation and consultation with the interested government agencies. If the research is to be done by a non-governmental institution, consideration may be given to the possibility of securing financial aid from the Government for those studies of the census data which are considered to be of the greatest public interest.

Wherever such a programme may be located, it is advisable, in the circumstances existing in most under-developed countries, to begin it on a modest scale. The value of the studies will depend chiefly on the quality of the professional staff engaged in the work, and in most under-developed countries it will be difficult to find enough persons with suitable training and experience to man a large institution for demographic research. It will therefore be prudent to begin with a small staff of the best qualified experts obtainable, and with an initial programme of modest scope, limited to those analytical studies of the census data and other relevant statistics that are most important and most urgently needed. To divide demographic research programmes among several different institutions or agencies is not advisable in countries where the number of persons with specialized training and experience in this field is small.

In most under-developed countries it may not be possible, in present circumstances, to find enough persons with the necessary qualifications to staff even a modest demographic research institution or agency. In that case, it is advisable, as early as possible in the preparations for the census and for the related analytical work, to make arrangements for training a sufficient number of persons to carry out the most important studies. It may often be found necessary to include in these arrangements some provision for training abroad. While personnel is being trained and is gaining experience, it may be useful to obtain the services of one or more experts from other countries, on technical assistance assignments, in order to go ahead with the desired studies.

Plans for the most important analytical studies of the census results should be drawn up, at least in provisional form, as early as possible, so that data requirements for these studies can be taken into account as plans are prepared for the census questionnaires, field operations, and data processing. In planning the studies, it is important to make arrangements for taking into account the interests of all governmental agencies that may be concerned with the findings. One way of accomplishing this purpose, which has been found effective in some countries, is to establish a committee composed of representatives of the interested agencies, to advise the agency or institution which is to carry out the studies. It is the practice in many countries to form inter-agency committees for the purpose of advising the census-taking agency on the proposed contents of the census questionnaires and tabulations. Where this is done, the same committee, or another working in close consultation with it, may advise on the planning of analytical studies. Such arrangements may also be useful for promoting the co-operation of interested agencies in the execution of the studies.

No matter how well a programme of studies may be planned to furnish information of practical value for policy-making and for the planning of action programmes, nothing will be gained in this connexion unless the results of the studies are actually used. It is a waste of time and resources to make studies the findings of which are ignored. In order to avoid such a waste, it may be necessary to make administrative arrangements to ensure that the results of the studies are brought to the attention of appropriate officials in the governmental agencies concerned. The way in which the findings are presented will also affect the extent to which they are utilized by policy-makers and planners of the relevant action programmes. At all stages of the work, from the initial planning of the studies to the final presentation of results, the closest possible working relations should be maintained between the technicians in the research agency or institution and those in the interested policy-making and action agencies.



### III. SELECTION OF TOPICS AND PROVISION OF MATERIALS FOR ANALYSIS

#### A. General principles for the selection of topics for study

It is not possible to prescribe in detail a programme of studies based on census data that would be suitable for all countries, since countries differ in their need for information on various questions, in the scope of their census data and collateral statistics, and in the extent of their resources for analytical work. As already mentioned, in most under-developed countries, the scope of such programmes of study should be modest, because few persons with appropriate training and experience will be available to engage in them. The smaller the resources, the more important it is to select topics with careful attention to the amount of time and effort required to carry out the analyses, as well as to the importance and urgency of requirements for different types of information.

Priority should be given to fundamental studies of aspects of population growth, structure, and distribution that bear on questions of policy and planning in many different economic and social fields, rather than to studies of special questions that will yield information of narrow utility. The results of the fundamental studies will serve as working materials for further studies relating to special questions in particular fields, which may be taken up subsequently if time and resources permit.

In later sections of this paper are discussed some topics of analysis of primary importance in relation to problems of economic and social development in many countries. Studies relating to these topics would deserve high priority, in many countries, in programmes of analysis of population census data. The selection of topics discussed here is not intended, however, as a recommendation for the contents of such a programme. In view of the present shortage of trained personnel in many under-developed countries, it would be inadvisable to undertake a programme of detailed studies on all these topics.

#### B. Planning of census tabulations to provide materials for analysis

As already pointed out, it is advisable to anticipate the most important requirements for data for analytical studies when the census questionnaires, data-processing procedures, and tabulation plans are being drawn up. It may be helpful in this connexion to consider the indications of types of census data that are useful for studies on the various topics presented in the later sections of this paper;

The scope for analyses of census data will be widened in many cases if comparability between tabulations of results of consecutive censuses is preserved, and also if the census tabulations are co-ordinated with the vital statistics. It is emphasized, however, that such comparability should not be achieved at the expense of the improvement of census data in the course of time.

1. Recommended international standards for census tabulations

The indications given below refer primarily to analytical uses of the tabulations recommended by the United Nations Statistical Commission for national censuses to be taken in connexion with the 1960 World Population Census Programme, as specified in the aforementioned Principles and Recommendations for National Population Censuses, and regional adaptations of this standard recommended by certain regional organizations of statisticians. 7/ It is assumed that each Government, in planning the tabulations of a national census, will wish to adhere to these international and regional standards so far as possible in view of national circumstances and national requirements for data. It is recognized, however, that some Governments may find it necessary or desirable to omit or abridge some of the recommended standard tabulations, to elaborate some of the recommended tabulations in greater detail, and to undertake other tabulations not included in the internationally recommended standards. Therefore the discussions in the following sections of this paper include indications of possible abridgements of some of the more detailed recommended tabulations, which would retain the most useful data for the

7/ In following sections of this paper, tabulations listed in the Principles and Recommendations are cited by tabulation number, with indications of the priority recommended by the Statistical Commission: for example, "United Nations tabulations 30, first priority", etc. Citations of tabulations recommended by regional organizations of statisticians are given as follows:

- CAS: Economic Commission for Asia and the Far East, Report of the Conference of Asian Statisticians (Second Session). United Nations, E/CN.11/493.
- CES: Conference of European Statisticians, Report of the Eleventh Plenary Session. United Nations, Conf/Eur/Stats/112; and European Programme for National Population Censuses, United Nations, Conf/Eur/Stats/WG/81.
- COTA: Inter-American Statistical Institute, Programme of the 1960 Census of America (COTA 1960). Report of the Sixth Session of COINS (Document 3841), Washington, April 1959. This document contains two lists of recommended tabulations, a "minimum" programme and an "expanded" programme; tabulation numbers are cited accordingly in the following sections of the present document.

An index of citations to these recommended tabulations will be found in the annex to the present document.

analytical purposes considered here. Also included are indications of some possible elaborations of recommended tabulations and some possible additional tabulations not listed in the internationally recommended standards, which might be found feasible and desirable in the tabulation programmes of some national censuses, for the purpose of extending the possible scope of analytical studies on the topics considered. Some possible ways of obtaining additional data for analytical studies from sample surveys linked with population censuses are also mentioned.

## 2. Area classifications of census data

The utility of census tabulations for analytical studies, as well as for other purposes, will depend to a large extent on the classifications of areas of the country used for the tabulations. Within the limits of the time and the funds available for a programme of census tabulations, it is seldom feasible to satisfy all needs for area classifications, either for analytical or for other purposes. Some compromise between the needs for detail in classifications of areas and in classifications of population characteristics is unavoidable as a rule. In this connexion, the following considerations are pertinent as far as the use of the tabulations for analytical studies relevant to developmental planning and policy-making is concerned:

(a) It is useful, as far as possible, to tabulate the most essential data separately for areas that constitute major units of administrative action in the fields to which the analytical studies relate, such as provinces or states, principal cities or metropolitan districts, and regions where regional developmental programmes have been undertaken or are planned.

(b) A distinction between urban and rural segments is of great value for many kinds of studies relating to economic and social policy and action programmes.

(c) For analyses of interrelations of demographic, economic and social factors which require detailed cross-classifications of characteristics, data for the country as a whole or its urban and rural segments may be sufficient. In any case, it is generally impracticable to carry out such tabulations for many separate areas.

(d) Demographic, economic and social relationships may also be studied by comparing census tabulations for various areas which differ in their economic and social characteristics. Where it is not feasible to carry out the relevant tabulations for all areas separately according to an area classification that would be sufficiently detailed, the purpose of such studies may be served by tabulations for groups of areas defined with reference to their economic and social characteristics. The areas may either be grouped into geographically contiguous regions of homogeneous economic and social characteristics, or classified according to these characteristics without regard to geographical location. For example, it may be useful to carry out certain tabulations for the aggregate population in all rural areas where agriculture is carried on mainly for subsistence and in those where commercial agriculture predominates.

Special considerations relating to area classifications in tabulations that are useful for analytical studies on certain topics are mentioned in later sections of this paper.

### 3. Uses of sampling

In many cases it may be possible to make great savings in the cost and time required for tabulations, especially tabulations for analytical purposes which are not to be made according to a detailed classification of areas, by limiting them to a sample of the census returns where personnel with the necessary training and experience in sampling methods is available; and, where the size of the population is large enough to make sampling economical, it is advisable to consider the possibility of using sampling for each tabulation planned, and to carry out on a full scale only those tabulations for which a sample would not be sufficient for one reason or another.

During the course of the analytical work, it may become apparent that the investigation of some important questions requires supplementary data for which no provision has been made in the tabulation programme of the census. An efficient and economical means of meeting such unforeseen needs is to prepare, if it is practicable to do so during the course of the tabulation programme, a sample or samples of the punched cards of the census, which can be retained for further tabulation work.

It may be possible to realize important economies and enlarge the scope of investigations by planning a sample survey of the population, or a series of such surveys, to be carried out after the census, and linked with the census so as to form a data-collection programme of maximum efficiency and minimum cost. An important part of the planning of such a programme is the provision of tabulations of the census data in suitable form to make an efficient frame for the subsequent sample surveys. This matter is discussed in section X, below.

#### IV. STUDIES OF POPULATION GROWTH AND STRUCTURE

##### A. Scope and purposes

The most fundamental demographic studies that can be made by means of census data are concerned with the growth and structure of the population, the demographic components of population growth - i.e., fertility, mortality, immigration and emigration - and factors influencing these components.

Investigations of these questions deserve consideration for an early place in a programme of studies based on the results of a census, because they will furnish essential materials for further analyses and calculations relating directly to many questions of economic and social policy and planning. Among other things, they will provide the basis for population projections, from which it is possible to derive estimates of such quantities as the number of children for whom school facilities will be required during the period of a plan for educational development, the number of families or households to be housed, the levels of consumption per head of food and other goods and services that will correspond to the fulfilment of given production goals, and many other estimates which are needed for adapting economic and social plans to the nation's needs. Studies under this heading also provide the demographic basis for the studies relating to problems of manpower, education, and housing discussed in later sections of this paper. Furthermore, they furnish materials for studying the effects of possible variations in population trends on economic and social development, as well as the effects of various possible types of planned social and economic action upon the population trends, and thus far obtaining a factual basis for decisions on questions of national population policy.

##### B. Requirements of data

###### 1. Data on sex-age structure of the population

The classification of the male and female populations by age groups<sup>8/</sup> is one of the most generally useful census tabulations for purposes of demographic analysis. It provides an indispensable part of the basis for studies of a nation's manpower potential and requirements for schools, housing, and various kinds of goods and services. In conjunction with vital statistics, this tabulation furnishes the means of computing such fundamental measures of the factors of population growth as age-specific fertility and mortality rates, reproduction rates, and life-table functions. It is the starting point for population projections made by the "component" method.

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<sup>8/</sup> United Nations tabulation 3, first priority. See also COTA minimum tabulation 4; CES tabulation 5, first priority; CAS recommendations, para. 38. (References to sources cited in foot-note 7 (above).)

In countries where reliable vital statistics are lacking, special importance attaches to the use of census data on the sex-age structure of the population alone as a means of estimating vital rates. An analysis of these data from two successive censuses may yield valuable, approximate measures of age-specific mortality rates and life-table functions for the interval between the censuses. Given an approximate indication of the level of mortality, the data on age structure from a single census can be used to derive approximate measures of the gross reproduction rate and the crude birth rate, provided that certain conditions relating to stability of the age structure are satisfied. On the other hand, if the approximate level of fertility is known or can be estimated, the mortality level can also be derived approximately from the increases of total population shown by successive censuses, due regard being given to immigration and emigration if these factors are important. Variations of fertility in different parts of the country can be studied by means of ratios of children to women of child-bearing age or other ratios derived from the tabulation of population by age and sex for various areas, although it is necessary in such an analysis to beware of errors due to the effects of internal migration or under-enumeration of young children, and other imperfections of the census data on the age structure of the population.

The age classification, under 1 year, 1-4 years, and by five-year age groups from 5 years up, provides the necessary material for most analytical purposes. In addition, the tabulation of single years of age serves for some important purposes, such as the identification of school-age population, etc., as well as evaluation of the quality of the age data. Tabulations of broad age groups, by sex, for a relatively large number of separate areas are of great value for analytical studies; more detailed classifications may be tabulated for the country as a whole and for principal areas.

In countries where immigration has occurred on an important scale it is highly valuable, for the demographic analyses and estimates mentioned above to tabulate the data on sex-age structure separately for the native population (born within the country) and the foreign-born. <sup>9/</sup> Thus the effects of immigration on the growth and structure of the population can be examined and estimates of mortality and fertility can be improved by basing them on the statistics for the native population alone. Where census questions permit the identification of internal migrants, it is useful to carry out sample tabulations of sex-age characteristics of in-migrants in various areas, in order to enhance the possibilities for studies of sub-national rates of population growth and related demographic questions. In countries where there are important ethnic and nationality minorities with distinctive demographic, social and economic characteristics, it is also useful to carry out the tabulations of sex-age structure separately for such groups. <sup>10/</sup>

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<sup>9/</sup> United Nations tabulation 8, first priority. See also COTA minimum tabulation 6; CES tabulation 8, first priority.

<sup>10/</sup> United Nations tabulation 26, first priority. See also CES tabulation 12, second priority.

## 2. Data on marital status

The classification of the population by marital status in relation to sex and age 11/ is also of fundamental importance for studies of population structure. This tabulation provides material for the study of age at marriage and frequencies of celibacy, widowhood, and divorce as factors affecting population growth through their influence on fertility, and affecting requirements for housing and other consumers' goods through their influence on family formation and family composition.

For the study of variations of fertility in different parts of the country, it is useful to calculate the ratios of numbers of children to numbers of married women of childbearing age, in addition to the ratios of children to all women of childbearing age, in various areas. The analysis of these ratios makes it possible to obtain indications of the parts played by differences in age at marriage, frequency of non-marriage, widowhood, etc., in bringing about the variations of fertility.

## 3. Additional data, useful for fertility studies

The inclusion of a question on the number of children born alive to each woman during her life-time has been recommended by the United Nations Statistical Commission as a first priority item for population censuses. Tabulations of the responses to such a question 12/ provide very valuable material for measurement

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11/ United Nations tabulation 6, first priority:  
Population included: All persons above the legal or customary minimum age for marriage.

Classifications:

Marital status: single, married, widowed, divorced, not stated.

Sex: Male, female.

Age: Under 15 years, five-year groups 15-19 to 70-74, 75 and over, not stated.

The classification of urban and rural areas in this tabulation is recommended as an item of second priority (United Nations tabulation 7), but is of great value for analytical purposes in view of the substantial differences commonly found in the marital status distribution of population in urban and rural areas.

See also COTA minimum tabulation 5; CES tabulation 6, first priority, and 7, second priority.

12/ United Nations tabulation 30, first priority:  
Population included: Either (a) all women, or (b) ever-married women.  
Classifications:  
Number of live-born children: none, single numbers 1-12, 13 and over, not stated.  
Age of woman: Under 15 years, five-year age groups from 15-19, 70-74 years, 75 years and over, not stated.

See also CES tabulations 41 and 42.

of fertility and study of the factors which influence it. These data are especially valuable for countries where birth registration statistics are lacking or faulty, but they are also useful as a supplement to registration data for countries where the latter are available in satisfactory form.

The most valuable fertility measures derived from these data relate to the size of completed families, i.e., numbers of children born to women who have reached the end of their potentially reproductive life. A comparatively simple tabulation from which the most essential measures can be derived consists of the following figures:

- (a) Number of women past child bearing age (45 or 50 years and over), classified by marital status in at least two groups (married, other). 13/
- (b) Numbers of these women having borne no children, one or more children, and not reporting numbers of children.
- (c) Total numbers of children born to these women. It is highly useful for the study of variations of fertility and of the factors influencing it, to tabulate at least the above figures for various areas of the country and to cross-tabulate them, for the country as a whole, the urban and rural segments, and for major areas, by characteristics such as educational level and occupation of the woman or the husband. A classification by age groups in the range above 45 or 50 years may also be of value as an indication of changes in the fertility of successive generations of women in the past.

The classification of women by specific number of children born, and corresponding tabulations for age groups of women within the childbearing range, are of value for further studies of fertility. It may not be practicable to tabulate these data in as much detail with regard to areas and cross-classifications as is possible for the items mentioned in the preceding paragraph.

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13/ If the census questions on marital status include an enquiry concerning previous marriages of women married at the time of the census, it may be advisable to classify the women into the two groups, once-married only, and all others. In countries where the number of consensual unions is significant, and where the census provides for the identification of such unions, fertility data should be tabulated for this group in addition to "married" and "other" groups.



The scope of possible fertility analyses may be widened by introducing cross-classifications by age at marriage, date of marriage, duration of marriage, or various combinations of these items into the tabulations of number of children born, if the relevant information is obtained in the census questionnaires. <sup>14/</sup> These items are not included in the recommendations of the United Nations Statistical Commission for census questionnaires.

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<sup>14/</sup> Household sample surveys may provide very valuable additional data for fertility studies, which could not readily be obtained in a census. Such surveys may be used to obtain current data on births (and also deaths) where registration statistics are lacking or unsatisfactory. They may also be used to investigate attitudes and ideals with regard to age at marriage, size of family, etc., and the practice of birth control. The study of these questions is useful in connexion with forecasts of fertility trends and the consideration of population policy measures.

## V. STUDIES OF POPULATION DISTRIBUTION AND INTERNAL MIGRATION

### A. Scope and purposes

Studies of the distribution of the population within the country in relation to economic opportunities, and of internal migration and other factors affecting the trends of population distribution, also deserve high priority in a programme of demographic studies based on census data. The findings of such studies have many bearings on questions of policy and the planning of action programmes in the economic and social fields. They are directly relevant, for example, to policy with regard to the location of industrial and other economic development projects, and to the balance of economic and social development between rural and urban sectors, between agriculture and non-agricultural industries, between metropolitan centres and smaller cities, and between different regions of the country. Studies under this heading provide materials for projections of the future rural-urban distribution of the population, the future growth of population in the principal cities, and future changes in the regional distribution of population within the country.

Migration from rural areas to the cities deserves special attention in these studies, especially in under-developed countries, as one of the principal factors affecting population distribution. In many cases, this movement threatens to create a serious imbalance in economic development, as well as major social problems for the migrants and for the non-migrant population, both in the cities and the rural areas. Studies of the magnitude of the movement, characteristics of the points of origin and destination, and characteristics of the migrants, may be helpful in devising policies and programmes aimed at influencing the volume of such migration, modifying its direction, and remedying or preventing ill effects on conditions of employment, wages, housing, education, health, destitution, crime, etc.

### B. Requirements of data

#### 1. Data for analyses of population distribution in relation to economic opportunities

The tabulation of the number of inhabitants of each territorial unit of the country, its urban and rural segments, and individual urban areas, <sup>15/</sup> provides material for studies aimed at assessing possibilities and requirements for developmental investments in the different areas, identifying areas where an excess or deficit of population exists or threatens to come into existence, and providing guides for measures of policy relevant to population redistribution. The population figures can be examined in relation to available

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<sup>15/</sup> United Nations tabulations 1, 2, 3, and 4, first priority. See also COTA minimum tabulations 1, 2, and 3; CES tabulations 1 and 2 first priority, 3 and 4 second priority.

information on the resources of each area, the characteristics of its economy, and factors affecting prospects for its future economic development. The value of such studies is enhanced by taking into account the past trend of population growth in each area, as shown by the data of previous censuses, as well as the present population.

Tabulations of population census data relating to economic activities, educational characteristics, etc., of the population in each area are among the principal means of assessing the economic position and prospects of the different areas, for the purpose of such studies. The extent of their usefulness in this respect will depend, of course, on the degree of detail in area classifications used for the tabulations relating to these characteristics. Abridged classifications of the characteristics may be used for tabulations in relatively great area detail, while fuller classifications are limited to tabulations for major areas.

Various types of measures of population density may be useful in studies under this heading. In addition to the density of total population in relation to total area of each territorial unit, the following measures may be valuable:

- (a) Rural population in relation to area of cultivated or cultivable land, or to total rural area.
- (b) Population dependent on agriculture<sup>16/</sup> in relation to area of cultivated or cultivable land, or to total rural area.
- (c) Economically active males in agriculture<sup>17/</sup> in relation to area of cultivated or cultivable land, or to total rural area.

2. Data for estimates of net internal migration during intervals between censuses

In a country where satisfactory records of births and deaths are maintained, the net gain or loss of population in each area by migration during the interval between two censuses may be estimated by comparing the

16/ United Nations tabulation 24, second priority:

Population included: total population.

Classifications:

Industry: based on industry classification of person on whom dependent and classified according to, or convertible to, at least the divisions of the International Standard Statistical Classification of all Economic Activities;

Sex: Male, female.

For analysis of the type discussed here, the data for persons dependent on agriculture (possibly without the classification by sex) might be tabulated in greater geographical detail than the data for other categories of the industry classification.

See also COTA expanded tabulation 12; CES tabulation 30, first priority, and 26, second priority.

17/ Derived from United Nations tabulation 18, first priority; also COTA minimum tabulation 14; CES tabulation 29, first priority.

increase or decrease of population shown by the censuses with the recorded balance of births and deaths. It is important to realize, however, that the validity of such estimates depends on the achievement of a rather high degree of accuracy both in the census enumerations and in the birth and death records. A relatively small proportionate error in either set of statistics may cause a large proportionate error in the migration estimate. A thorough evaluation of the quality of the data is a prerequisite to any study of internal migration by this method.

Estimates of net migratory gains and losses classified by sex and age groups can be made by comparing tabulations of the population by sex and age groups in each area, at two census dates. The population of a given age at the earlier census date is compared with the number of a corresponding higher age at the latter census, allowance being made for mortality during the interval. Birth records are not required for this calculation if the estimate is restricted to the net gains and losses in the age groups of the population that were already living at the time of the earlier census. Death records also are not required if it can be assumed without risk of serious error that age specific mortality rates are the same in all parts of the country. On this assumption the allowances for mortality may be made by applying standard survival factors computed from the tabulation of population by age and sex for the whole country at the two census dates. This procedure also eliminates errors due to misreporting of ages and faulty enumeration, except to the extent that the magnitude and character of such errors may vary in the different parts of the country for which migration estimates are made.

Net migration estimates made by these methods may be studied in relation to the rates of natural increase, population density, social and economic conditions, and other characteristics of the areas, in order to obtain light on factors influencing the movements. The findings may be applied in forecasting probable future trends of internal migration and population growth in various areas. They may also furnish guides for measures of demographic, social and economic policy aimed at modifying the currents of internal migration. It is advisable, where possible, to carry out such analyses with reference to migratory movements during the intervals between three or more past censuses, in order to deepen understanding of the factors influencing the trends.

### 3. Additional data for internal migration studies

The United Nations Statistical Commission and the bodies concerned with regional standards for population censuses have recommended an enquiry on place of birth within the country, for the native population, as a priority item for census questionnaires. The data obtained in this way are useful for internal migration studies, as indications of the magnitude of in-migration to and out-migration from each part of the country, and of the origins and destinations of the in- and out-migrants. A weakness of these data is that the dates of the movements are not specified. A person found in a given area at the census date, who was born in another area of the country, may have migrated at any time during his life; furthermore, he may have migrated several times to different areas, and the information on place of birth would not reveal the various moves made.

According to the internationally recommended standards, the census question on place of birth of persons born within the country should refer to the major territorial division (province, state, etc.) of birth, and the tabulation of results should show, for persons of each sex enumerated in each major territorial division, the numbers born in the same division and in each other major territorial division. <sup>18/</sup> A short-coming of a tabulation in this form is that it gives no information on migration to the cities, which is the most important type of internal migration in most countries. The value of the data could be improved considerably by formulating the census question on place of birth in such a way that persons residing in any one of the principal cities could be classified as born within the same city, elsewhere in the same major territorial division, or in each of the other major territorial divisions of the country. An extension of the same principle would make it possible to classify the population in each intermediate or minor territorial division as born within the same territorial division, elsewhere in the same major territorial division, or in any other major territorial division. Such classifications would greatly extend the scope of possible analyses of internal migration and the factors influencing it.

The utility of the census data for studies of this important subject can also be improved by asking questions about the place of residence of each individual at a specified date in the past, or about the length of residence in the present place and the place of previous residence. Such questions may be considered either as substitutes for the question on place of birth or as additional questions. They have the great advantage of providing information on movements during a specified period of time. In fact, questions of these kinds have been asked in recent censuses of several countries, but they are not among the items of census investigation recommended by the international agencies.

Tabulations showing the classification of migrants by age groups and by such characteristics as marital status, educational level, occupation, industry and number of children born are highly valuable for analytical studies of internal migration, although such tabulations are not included in the internationally recommended standards for census tabulation programmes. Where it is feasible to carry out tabulations of this kind, they can be used to study factors influencing internal migration, its effects on population growth and structure in areas of in-migration and out-migration, and the economic and social problems which it entails. Cross-tabulations of such characteristics with detailed classifications of place of birth or place of previous residence in combination with place of residence at the census date are cumbersome, expensive and time-consuming. A practical procedure is to reduce the classifications of place of birth, etc., to a few categories, such as the simple distinction between migrants and non-migrants in major areas of residence at the census date, and to tabulate the characteristics of persons in these categories.

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<sup>18/</sup> United Nations tabulation 10, first priority; COTA minimum tabulation 7; CES tabulation 10, first priority.

Types of information concerning internal migration which cannot be obtained from the census, but can be obtained from sample surveys, include migration histories which show the successive moves made by individuals during a specified period of time, data on attitudes towards migration, reasons for migrating or not migrating, etc. Sample surveys can also provide data on family relationships of migrants and cross-classifications of social and economic characteristics, in a degree of detail that is not practicable for a population census.

## VI. MANPOWER STUDIES

### A. Scope and purposes

Studies of the growth, composition, and distribution of manpower are of fundamental importance for the determination of policies and planning of programmes aimed at the full and effective utilization of a nation's human resources. Population censuses are an important source of material for such studies, and may be supplemented with data from other sources if available, such as establishment reports on employment and sample surveys. 19/

One of the objects of demographic studies in this field is to furnish the basis for manpower projections, which are an essential tool for economic planning. Such projections are useful for such purposes as estimating the number of jobs needed in future years to ensure full employment; the numbers of workers who will enter and withdraw from the labour force annually; the magnitude of investments required in the development of land and in various kinds of working equipment in order to make effective use of the prospective labour force; the numbers of workers to be trained for various types of employment, and to be shifted from one area or sector of the economy to another, in order to achieve the goals of a development plan. Studies of population census data showing the patterns of economic and other activities of the population in relation to sex, age, marital status, urban and rural residence, educational status, etc., form an important part of the basis for such projections.

### B. Requirements of data

#### 1. Data for studies of extent of participation in economic activities

Measures of the extent of participation in economic activities by men and women in various age groups are fundamental for studies of factors determining the size and composition of a nation's manpower and its relation to the size and structure of the population, and for making manpower projections. The principal measures are percentages of economically active persons among males and females in each age group, called "activity rates" or "participation rates", which can be derived from the tabulation of population by type of activity, sex, and age. 20/

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19/ A programme of periodic sample surveys of the population can provide up-to-date material for studies of manpower and related problems. In addition to keeping information up to date, such a programme of sample surveys makes it possible to trace seasonal and cyclical variations of economic activities and to study the effects of major changes in the conditions of the national economy. Sample surveys can also provide measures of employment, unemployment and under-employment that are more reliable and more detailed than can be obtained in censuses of population.

20/ United Nations tabulation 15, first priority:

Population included: Total population.

Classifications:

Types of activity: economically active, not economically active.

Sex: Male, female.

Age: Under 15 years, 5-year groups 15-19 to 70-74, 75 and over, not stated.

See also COTA minimum tabulation 12; CES tabulation 19, first priority.

For the study of factors affecting the propensity to engage in economic activities, the opportunities to engage in such activities, and their influence on the activity rates, differences in these rates for various areas of the country can be analysed in relation to local characteristics of the economy, principal types of economic activity, levels of earnings, extent of unemployment, rural or agricultural population density, school attendance and educational level of the population, etc. Such an analysis will gain in value if data are available from two or more censuses to show the trends of the activity rates, which can be related to changes in the relevant characteristics. An urban-rural classification in the tabulation of population by type of activity, sex, and age is of great value for this analysis, because urban and rural activity rates commonly differ sharply.

The study of economic activity rates furnishes the means of deriving manpower projections from a series of population projections classified by sex and age groups. Where no reason is found for anticipating important changes in the activity rates in the future, the rates computed from the data of the last census may be applied to the projected population figures for the corresponding sex and age groups to estimate the future numbers of economically active persons. Alternatively, future activity rates may be estimated by projecting past trends of the rates or by making allowances for the likely effects of anticipated changes in relevant factors.

Economic activity rates may also be used in conjunction with life-table functions to calculate the length of working life of males and females and other measures such as rates of accession of young people to the economically active population and rates of retirement.

For the study of women's participation in economic activities, the cross-classification by marital status and age of economically active and inactive females is of special value. 21/ Classifications of economically inactive persons

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21/ This cross-classification can be derived from the tabulation of total population by marital status, sex, and age (United Nations tabulation 6, first priority) and United Nations tabulation 22, second priority, which is specified as follows:

Population included: Total economically active population.

Classifications:

Marital status: single, married, widowed, divorced, not stated.

Sex: Male, female.

Age: Under 15 years, 5-year age groups 15-19 to 70-74, 75 and over, not stated.

Occupation: according to, or convertible to, at least the major groups of the International Standard Classification of Occupations.

Where it is not possible to carry out this tabulation in full, it may prove feasible to do it by omitting the occupational classification and thus providing the essential material for analysis of the relation of marital status to participation in economic activities. The data for males may also be omitted if necessary.

See also CES tabulation 23, second priority.



of each sex and age group into functional categories such as housewives, students, etc., 22/ are also useful in studying the determinants of activity rates and assessing potential reserves of manpower in the economically inactive category.

In addition to the numbers of workers participating in economic activities, it is useful to study the extent of their participation, and census tabulations may be used for this purpose if the census questionnaires include certain relevant details. Where the economically active population is enumerated with reference to activities during a specified week (according to the "labour force" concept), persons at work during the week may be classified by hours of work, and where it is enumerated with reference to a year's activities, by numbers of weeks or months of work during the year. The classification of these data by sex and age-groups makes it possible to carry out analyses of the types mentioned above, with reference to the size of the contribution of the different elements of the population to the labour supply. Such tabulations, however, are not included in the internationally recommended standard tabulation programmes, and in some cases, particularly in under-developed countries, the meaning of such data is dubious.

The tabulation of the economically active population by status (as employer, employee, etc.), sex, and age 23/ is also valuable for the study of participation in economic activities, particularly as it reveals the effect of the enumeration of family workers on the activity rates obtained from the census data. Variations of enumerators' and respondents' interpretations of the concept of economic activities, as applied to family members working without wages on a farm or other family enterprise, may considerably distort the pattern of activity rates.

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22/ United Nations tabulation 17, second priority:

Population included: Population not economically active.

Classifications:

Categories such as home-makers (housewives and other relatives), students, persons in institutions, income recipients, and others.

Sex: Male, female.

Age: Under 15 years, 5-year age groups 15-19 to 70-74, 75 and over, not stated.

See also COTA expanded tabulation 11; CES tabulation 21, second priority.

23/ United Nations tabulation 23, second priority:

Population included: Economically active population.

Classifications:

Status: Employer, own-account worker, employee, family worker, member of producer's co-operative, not classifiable by status.

Sex: Male, female.

Age: Under 15 years, 15-19, 20-24, 10-year groups 25-34 to 65-74, 75 and over, not stated.

See also COTA minimum tabulation 15; CES tabulation 27, second priority.

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## 2. Data for studies of types of economic activities

The classifications and cross-classifications of census data on economic activities of the population by industry, occupation, and status (as employer, employee, etc.) 24/ furnish a statistical inventory of a nation's manpower and its utilization which is of inestimable value as an aid in economic policy-making and the planning of developmental programmes. The uses of these data in economic studies are too numerous to be listed here.

The cross-classifications of age and sex with industry and occupation of economically active persons 25/ furnish material for analyses of rates of accession to and withdrawal from particular types of economic activities. 26/ These data also make it possible to carry out co-ordinated studies of prospective future trends in the numbers of workers attached to various occupations and industries, within the framework of projections of the total economically active population by sex and age.

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24/ Industry by status and sex: United Nations tabulation 18, first priority; also COTA expanded tabulation 8; CES tabulation 29, first priority.

Occupation by status and sex: United Nations tabulation 20, first priority; also COTA expanded tabulation 9; CES tabulation 28, first priority.

Industry by occupation: COTA expanded tabulation 7.

25/ Industry, sex, and age: United Nations tabulation 19, first priority; also COTA minimum tabulation 14; CES tabulation 25, first priority.

Occupation, sex, and age: United Nations tabulation 21, first priority; also COTA minimum tabulation 13; CES tabulation 22, first priority.

26/ For a discussion of the usefulness of a more elaborate tabulation by level of educational attainment, see section VII below.

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## VII. STUDIES RELATING TO CONDITIONS AND PROBLEMS OF EDUCATION

### A. Scope and purposes

Studies based on population census data and other demographic statistics, together with statistics of enrolments and of other operations of educational institutions, are means of assessing a nation's situation and progress as regards education, the effectiveness of its educational system, needs for educational development, and for investments in school construction, teacher training, etc.

The nation's educational situation can be assessed by means of census data on literacy and educational attainments of the population. These data can be analysed to measure differences of the situation in different parts of the country and among different categories of the population, and to estimate changes of the situation during past decades. Data on school enrolments as well as census data on school attendance, in relation to the size and composition of the school age population, can be analysed to obtain statistical measures of the coverage and efficiency of operations of the educational system. Educational development needs can be studied with the help of an analysis of current and anticipated future educational requirements for workers in various types of economic activities, in relation to educational attainments of the population and labour force. Projections of the school age population, derived from the studies of population growth and structure mentioned in section IV above, can be analysed in relation to school-enrolment trends and expectations or goals, to obtain estimates of future changes in the numbers of pupils to be enrolled and their distribution by age and educational level. These estimates furnish a basis for calculations relating to requirements for the construction of schools and class-rooms and the training of teachers. Such calculations are especially important for the orderly and efficient development of a national programme of education in countries where the population is growing rapidly or where the number of births is changing rapidly from year to year, thus causing large variations in the numbers of children who will come of school age in future years.

It is especially important in demographic studies relevant to problems of education to consider the geographical distribution within the country of the present and expected future school population, and variations of enrolments and educational level, as well as educational needs, of the population in different areas. Area classifications are therefore of particular importance in the census tabulations relevant to studies in this field.

### B. Requirements of data

#### 1. Data for measurement and projection of school age population

It is obviously important, for studies relating to education to carry out the census tabulations of sex-age structure of the population in such a way as to obtain the numbers of males and females within the legal and customary ranges of school-going age for as many different areas of the country as possible. The classification by single years of age within this range is likewise very important,

because it furnishes the basis for analyses relevant to the educational level of enrolments. Furthermore, the single year age classification of pre-school children is important as a basis for estimates of expected annual numbers of children who will reach school-starting age in the near future. 27/ In countries where there are important linguistic minorities which are identified by questions in the census, it is valuable for educational planning to tabulate the data on sex-age structure separately for such linguistic groups. 28/

The census tabulations that are useful for analyses of factors of population growth as a basis for population projections have been discussed in section IV above. In connexion with the derivation of projections of school age population from such studies, special importance attaches to the study of fertility, its trends, and factors influencing it. When projections of school age population are carried more than a few years into the future, fertility rapidly becomes the main determinant of the trend.

## 2. Data for studies of school attendance

In a country where comprehensive, detailed statistics of enrolments in all educational institutions are compiled currently, it may not be necessary to rely on census tabulations for studies of the extent of school attendance. In fact, however, enrolment statistics derived from institutional records are not adequate, in many countries, to provide an exact measure of total attendance or all the classifications of characteristics of the school-going population that are valuable for such purposes. In particular, the age classification of persons attending schools is commonly difficult to obtain from enrolment records, and where this is the case, the classification of persons attending and not attending school, by sex and age, 29/ as a part of the census tabulation programme, is

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27/ A tabulation of population of each sex by single years of age up to 99 years is included in the internationally recommended standard census tabulation programmes (United Nations tabulation 5, first priority; also COTA minimum tabulation 4; CES tabulation 5, first priority). It is unlikely to prove feasible, however, to carry this out with a very detailed classification of areas; thus, more detailed area classifications in the portion of the single-year age tabulation which is relevant to analysis of the school population may be considered for inclusion in national tabulation programmes. See indications below relating to tabulations of school attendance data.

28/ United Nations tabulation 25, first priority; CES tabulation 36, first priority.

29/ United Nations tabulation 29, second priority:  
Population included: All persons 5-24 years of age.  
Classifications:  
School attendance: attending school, not attending school, not stated.  
Sex: Male, female.  
Age: single years 5 to 14, 15-19, 20-24, not stated.

See also CES tabulation 40, second priority; COTA minimum tabulation 11.

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essential for studies of the numerical relationships between the population of school age and its changes on the one hand, and the population actually in school, on the other hand.

The classification of level of education attained by persons of school age attending and not attending school, by sex and single years of age, 30/ is a rather complex cross-tabulation which may not be practicable to include in the census tabulation programmes of many countries. Such a tabulation, however, is exceedingly valuable for analysing the efficiency of the educational system with reference to the extent of retardation of promotion of pupils through the successive school grades, and to the frequency with which children drop out of school before completing certain standards.

If it is feasible to make a cross-tabulation showing the numbers of economically active and inactive young people among those attending and not attending school in each sex-age group, these data will be valuable for measuring the importance of economic activity as a factor affecting school attendance and vice versa, and for indicating the numbers of young people who are neither in school nor economically active - a group which may constitute a serious social problem in some countries. Such a tabulation is not included in the internationally recommended standards. Data on reasons for non-attendance at school and classifications of families by numbers of children attending and not attending school are also helpful for analysing school-attendance problems, but these are better considered as possible topics for investigation in sample surveys rather than in censuses.

### 3. Data for studies of the literacy and educational level of the adult population

Census data on the literacy and level of education attained by the adult population are measures of an important component of the national level of living as well as an important indication of the quality of human resources and capacity of the nation for economic and cultural development. Tabulations of these data by sex for various areas within the country and ethnic groups of the population serve to identify areas and population groups which are handicapped in various degrees in the matter of education. When the data are cross-classified by age groups, they can be used to trace the progress in educational attainments of successive generations in the past, and form a basis for projections of future

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30/ COTA expanded tabulation 4.

trends in the numbers of literates and illiterates in the adult population, and in the distribution by educational level. 31/

It is useful to compare the present and projected future distribution by educational level of the population and labour force with estimates of present and anticipated future requirements of educated manpower for various types of economic activities. Such a comparison may serve as a guide both to national policy for the development of the educational system and to the planning of economic development programmes that it would be feasible to carry out in view of manpower requirements. For the analysis of these requirements and of the extent to which they are satisfied by existing manpower resources, it is useful to have census data showing the distribution by educational level of workers in various occupations. 32/

31/ United Nations tabulation 27, first priority:

Population included: all persons 15 years of age and over.

Classifications:

Literacy: literate, illiterate, not stated.

Sex: Male, female.

Age: Five-year groups 15-19 to 70-74, 75 and over, not stated.

United Nations tabulation 28, first priority:

Population included: all persons above the minimum age of usual or compulsory entrance into school.

Classifications:

Highest year or grade completed within the most advanced educational level achieved (nursery, infant school, or kindergarten; elementary or primary; secondary, high school or middle; university or higher professional), by single years or grades.

Sex: Male, female.

Age: Under 10 years, 10-14 15-19, 20-24, 25 and over, not stated.

See also CES tabulation 38 and 39, first priority; COTA minimum tabulations 9 and 10.

The age classification recommended for United Nations tabulation 28 and for the corresponding tabulations in the CES and COTA programmes, with no subdivision of the age group 25 years and over, does not provide an adequate basis for analysis of past trends and future projections of the distribution of adult population by educational level. A classification by 10-year age groups from 25-34 to 55-64, 65 years and over, would serve these analytical purposes adequately.

32/ CES tabulation 24, second priority:

Population included: Economically active males and females.

Classifications:

Educational level: Highest of the following levels completed:

- (1) elementary or primary; (2) high school or middle school; and (3) university or higher professional;
- (4) not stated.

Occupation: according to, or convertible to at least the minor groups of the International Standard Classification of Occupations.

Sex: Male, female.

Age: Under 25, 25-44, 45-64, 65 and over, not stated.

Where it is not feasible to carry out this tabulation in full, it may be feasible to do it without the cross-classification by age, thus providing the most essential data on the relationship between occupation and educational level.

4. Local data on educational problems and needs

For a comprehensive assessment of a country's position with regard to education and the development needs of its educational system, the study of statistics for the country as a whole and for its major component areas is not sufficient without some consideration of local variations. Of course, it is impracticable to carry out detailed tabulations of the census data relating to education for all the minor territorial units of the country, but it is useful, so far as possible, to make abridged tabulations for such units, showing such items as the total number of children of school age, number or percentage attending school, number or percentage of illiterates of each sex in the population aged 15 years and over, and number or percentage of the adult population having attained a specified educational level. Thus educational deficiencies and development needs can be pinpointed.

## VIII. STUDIES OF NEEDS FOR HOUSING AND OTHER CONSUMERS' GOODS AND SERVICES

### A. Scope and purposes

In assessing a nation's present and future needs for consumers' goods and services and in planning for their satisfaction, it is useful to consider the numbers and composition of households and families, and future trends in this request as well as the numbers of individuals, since the household or family is the unit of consumption of many items. Especially in assessing housing needs and in planning housing programmes, it is important to take account of trends in the number and composition of households and their relation to the growth and structure of the population.

As chronic shortages of housing exist in most countries, a first problem in establishing the statistical basis for housing policies and programmes is to assess the magnitude of the present shortage in the country as a whole and its various parts. One method of doing so is to compare the inventory of existing housing units, as shown by a housing census or survey, with an estimate of the numbers of units of various sizes and types that would be required to accommodate the present population in accordance with given standards of satisfactory housing. In this connexion it is relevant to study the data which a population census may provide on the classification of existing households by size and composition; such data may be used to estimate the frequency of "doubling up" in shared living quarters of family groups that should be housed separately, as well as the distribution of the needed numbers of housing units by number of rooms or amount of floor-space, etc. The study of census data on the structure of the existing population in terms of sex, age, marital status, and household-relationship classifications of individuals is also a possible means of estimating the number of housing units required, in accordance with given standards for the separate housing of persons in various categories of these classifications and their dependants. Data on the facilities of existing housing units, on their quality in general, and on the numbers of vacant units, also need to be considered in assessing the deficiencies of the nation's stock of housing. Obviously, it is important to carry out studies in this field separately for various areas of the country, and in as much geographical detail as possible.

A future projection of the number of households or families is highly valuable for estimating future changes in the demands for housing and certain other goods and services. Such a projection may be derived from a projection of the population classified by sex and age groups, with the assumption that the number of households or families will vary approximately in proportion to the number of adult males in a certain age-range that comprises the great majority of family and household heads. It may be possible to refine and improve the projection of number of households or families by studying past trends in the ratio of the total number of households or families to the male population in the selected age-range, or by analysing the specific percentages of household or family heads among men and women of particular ages and the trends of these percentages. Studies of the trends in age at marriage and in the frequency of celibacy, widowhood, and divorce, and their relation to the formation and dissolution of families and households are also relevant to this problem of forecasting. The problem of projecting trends in the



distribution of households and families by size and composition is more complex, and is not considered here.

Internal migration, especially between rural and urban areas of a country, is an influential factor in housing needs. To the extent that housing units are left vacant in the areas of out-migration, the effect of the movement is to increase the number of units required in the country as a whole. Furthermore, the problem of meeting housing needs in urban areas is generally very different from that in rural areas. The study of internal migration and its relation to housing requirements is therefore an important item in a programme of demographic studies relevant to problems of housing.

## B. Requirements of Data

### 1. Data for studies of the adequacy of existing housing arrangements and estimation of present housing needs

Statistics of households classified by size<sup>33/</sup> can be used to calculate the number and size-distribution of housing units required to accommodate the present population in accordance with given standards so far as the number of persons per room or amount of space per person is concerned. The results of this calculation, compared with statistics on the size-distribution of existing housing units, yield an estimate of the number of additional units of each size required to meet the given standard.

A classification of households by structural types<sup>34/</sup> permits a more discriminating calculation of housing needs, with reference to standards which take account of both the composition and the size of the group of persons to be housed together. The structural types to be identified in this classification may be defined with a view to norms of health and social welfare as well as to prevailing customs with regard to the sharing of housing accommodations; the usefulness of the classification for various sociological and economic analyses other than those relating to problems of housing should also be considered. A classification of the individuals by household relationships (head of household,

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#### <sup>33/</sup> United Nations tabulation 13, first priority:

Numbers of households, and aggregate numbers of persons in households, classified by type and size of household as follows: private households of 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 or more persons, institutional households, and not specified.

See also CES tabulation 14, first priority; COTA minimum tabulation 16.

#### <sup>34/</sup> United Nations tabulation 14, second priority:

Numbers of households, and aggregate numbers of persons in households, classified by structural types (such as: I. Married couples without children, II. Either or both parents with unmarried children, III. Either or both parents and married children without grandchildren as well as unmarried children if any; IV. Either or both parents with married children and grandchildren as well as unmarried children if any; V. All other types), by size of household.

wife of head, son or daughters, etc.) in combination with sex and marital status<sup>35/</sup> is also useful for studies of housing needs along this line, since it serves to identify biological families not separately housed, such as those of married sons and daughters and their children. The latter tabulation may be easier to carry out than a detailed classification of households by structural types, but it provides no information on the size and composition of the family units.

Another type of data which may be used for studies along this line is the tabulation, carried out in some censuses, of families rather than of households, classified by size and composition of the family.<sup>36/</sup> In this connexion, a family is defined as a group of persons related to each other in one way or another who live in the same household. The definitions and types of families identified in census tabulations may vary, and their relevance to the study of housing adequacy and housing needs will vary accordingly.

The number of housing units needed to accommodate the existing population may also be estimated by means of the tabulation of the population classified by marital status, sex and age, with the use of norms for the percentages of persons in each category of this classification who should have a separate housing unit for themselves and their dependants. Such calculations, however, do not bear on the question of the sizes of the units needed.

Sample surveys may be carried out as a means of investigating the acceptability of existing housing arrangements from the point of view of the people concerned, and as a means of estimating the proportions of persons in various categories of household relationships, marital status, sex, age, etc., who would prefer to be housed with their dependants, in separate units, as well as the proportions of persons for whom such separate housing would be desirable on grounds of health and welfare.

The United Nations publication, General Principles for a Housing Census<sup>37/</sup> contains recommendations for the tabulation of housing census data which are relevant to the study of deficiencies in the quality of existing housing units, vacancy rates and overcrowding. Where a housing census is taken simultaneously with the census of population, or where questions relating to the characteristics of housing are included in the population census questionnaire, it is important to co-ordinate the processing, tabulations and analysis of the population and housing data so as to obtain information on the characteristics of the household in relation to those of the housing unit which it occupies. For instance, cross-tabulations of size and other characteristics of dwelling units by structural type and number of persons in the household are highly valuable for an analysis of housing needs.

35/ CES tabulation 13, first priority:

Population included: Population in private households.

Classifications:

Marital Status: Single, married, widowed, divorced, not stated.

Household Relationship: Relationship to main supporter (or head) of household, and (for persons living in family nuclei) relationship to main supporter (or head) of family nuclei.

Sex: Male, female.

See also COTA expanded tabulation 13.

36/ CES tabulation 15, second priority; COTA expanded tabulation 16.

37/ Sales No.: 58.XVII.8.

## 2. Data for projections of numbers of households or families

As already mentioned, projections of numbers of households or families can be derived from projections of population by sex and age groups, by assuming that the number of households or families will vary in proportion to the number of males in a suitably selected age range, or by projecting past tendencies of change in this numerical relationship. The basis of the projection may be improved, however, if a tabulation of census data is made showing the classification of heads of households or families by sex and age groups, 38/ which can be used in conjunction with the corresponding classification of the total population, to calculate sex-age-specific percentages of household or family heads. These percentages (or projections of them) can then be applied to the projected population figures by sex and age groups to obtain the projected numbers of households or families.

A still better basis may be obtained from a cross-classification of household or family heads by sex, age and marital status, 39/ where it is possible to include such a cross-classification in the census tabulation programme. In connexion with the corresponding classification by sex, age, and marital status of the total population, this provides material for studying the relation of changes in age at marriage and frequencies of non-marriage, widowhood and divorce to the formation and dissolution of families and households. The findings of studies on the trends of marriage, widowhood and divorce and on factors which may affect these trends in the future can then be brought to bear upon the problem of household or family projections. The tabulation and analyses are also useful in providing some of the essentials of a classification by composition of the households or families, which is relevant to the types of housing units needed and also to demands for some other kinds of commodities. If the marital-status classification of household or family heads is limited to the two categories, married and all other, in combination with sex and age, the most essential data may be obtained with a considerable simplification of the tabulation, though this will not permit a full analysis of the factors of widowhood, divorce and celibacy.

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38/ COTA expanded tabulations 14 and 15 provide the following classifications:  
Population included: Heads of private households.  
Classifications:  
Sex: Male, female.  
Age: Under 15, 15-19, 20-24, 25-34 ... 65-74, 75 and over.

These COTA tabulations call for further cross-classifications by occupations and industry groups, which are not essential for the analysis discussed here, though they are useful for dependency studies. See also CES tabulation 16, second priority.

39/ Some of the principal elements of this cross-classification are provided by CES tabulation 16, second priority:  
Population included: Main supporters (or heads) of private households.  
Classifications:  
Type of household: One-person or multi-person; one-family household or multi-family household.  
Sex: Male, female.  
Age: Age groupings not specified.

## IX. STUDIES OF THE LEVEL OF LIVING

Tabulations of results of a population census furnish materials for studies of certain components of the level of living and their variations in different parts of the country and among different ethnic or other groups of the population. Census data are especially valuable for this purpose in under-developed countries where other statistical measures of components of the level of living are scarce. Studies in this field are important aids for policy-making and the planning of balanced economic and social development programmes because they yield measures of progress toward the goals of development and indicate in what respects the progress has been more or less satisfactory. These studies also serve to identify areas and categories of the population that may need special consideration in the planning of developmental activities because they are below the national average with respect to the level of living in general or to certain of its components.

In addition to indicators of components of the level of living that are calculated by relating other data to population base-figures (such as death rates and measures of expectation of life, derived from death-registration statistics, income per head, food consumption per head, etc.), the following indicators may be obtained directly from population census data or from analyses based upon them:

- (a) Estimates of mortality measures, as discussed in section IV above;
- (b) Literacy and illiteracy rates;
- (c) Median level of education;
- (d) School-attendance ratios;
- (e) Distribution of the economically active population by industry groups, as an indicator of the degree of industrialization and economic development;
- (f) Unemployment rates, if data on unemployment are obtained in the census;
- (g) Indications of the extent of under-employment, derived from analyses of types of economic activities and other data sometimes obtained in connexion with population censuses, such as hours of work per week, weeks or months of work per year, earnings, amount of land cultivated, etc.

Census tabulations may also be used to compute other measures that are sometimes considered as indicators of components of the level of living, such as age composition of the population, fertility measures, and measures of urbanization. <sup>40/</sup>

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<sup>40/</sup> See the recommendations for statistical measures of the level of living and its components in International Definition and Measurement of Levels of Living (United Nations publication, Sales No.: 54.IV.5).

Statistics for major territorial divisions and urban and rural sectors may not provide enough material for a satisfactory study of variations of the level of living and its components within the country. It may therefore be found desirable to carry out tabulations of the data required for computation of some of the indicators mentioned above, separately for smaller territorial divisions. In such tabulations, the classifications of the relevant characteristics may be highly simplified. For instance, the median educational level of the population of both sexes above the age of twenty-five years may be tabulated for small areas without the details of numbers of persons at various levels of education and cross-classifications by sex and age-groups; likewise an indicator of variations in the degree of industrialization may be obtained from a small-area tabulation of the total number of economically active males and the number engaged in agriculture, without the full classification of industries or occupations of the active population of each sex.

In connexion with the census of population, it may also be possible to obtain some simple items of information concerning the characteristics of rural and small urban communities which are very useful as indicators of the level of living, such as the presence or absence in the community (or within a given distance) of a physician, a hospital or dispensary, a primary or secondary school, a motor road, a library, a cinema, a post office, etc. These data can be used in the tabulation of the census results, to determine what proportion of the population of the whole country or of a given territorial division is found in communities that meet a certain standard as regards these amenities.

Sample surveys are particularly useful for obtaining up-to-date information on changes in indicators of various components of the level of living during the intervals between censuses. They are also the most practical means of obtaining measures of the more complicated indicators, such as under-employment.

## X. THE USE OF CENSUS TABULATIONS FOR SAMPLING FRAMES

An increasingly important purpose of census tabulations is to provide information concerning characteristics of small geographical areas, for use in the selection of stratified samples for purposes of sample surveys. The efficiency of the census tabulations for this purpose depends heavily on the geographical detail in which the data are provided. Statistics for a large city, for example, are of little use in this respect unless they are made available for administrative or statistical divisions of the city, and preferably for city-blocks. Likewise, a detailed division of the rural territory by administrative or statistical areas is needed.

Census items tabulated for the purpose of sampling frames should be selected with a view to their relevance to a wide variety of demographic, economic and social questions which may be investigated by means of sample surveys.

In view of the fine geographical detail that is needed, the number of items and the number of categories for the classification of each item must be few.

Examples of items which may be considered in this connexion include:

- (1) Total population;
- (2) Ethnic groups (linguistic groups, religious groups, racial groups, foreign-born population, etc.);
- (3) Number of in-migrants from other parts of the country (defined with regard to place of birth or place of residence at a specified previous date). This item is most important, as a rule, in data for subdivisions of cities, but it may also be important for rural areas of in-migration, as a basis for stratification of samples for surveys aimed at obtaining more detailed data on characteristics of migrants;
- (4) Major occupational or industrial groups of the economically active population;
- (5) Number of literates or illiterates, or number of persons above or below a certain educational level.

Data from the censuses of housing and agriculture are also important for this purpose. The data on characteristics of local communities (possession of schools, hospitals, etc.) mentioned in section IX above are also useful for sampling frames.

## ANNEX 1

### SYNOPSIS OF PRINCIPAL TOPICS OF ANALYTICAL STUDIES AND RELEVANT TABULATIONS OF CENSUS DATA

#### I. Population growth and structure

##### A. Scope:

1. Studies of the growth and structure of the population.
2. Studies of the components of population growth: fertility, mortality, and migration.
3. Studies of factors influencing these components.

##### B. Purposes:

1. Assessment of present and expected future needs for various types of goods, services and installations as they relate to the size of the population or of various groups such as children of school age, as an aid in fixing goals of developmental plans and programmes.
2. Establishment of factual basis for decisions on questions of population policy and means of implementing such policy.
3. Provision of basic materials for further demographic studies (relating to economic activities, educational characteristics, members and characteristics of households and families, etc.)

##### C. Relevant census tabulations:

###### 1. Sex and age-groups:

- (a) As the basis for population projections by "component" methods;
- (b) With vital statistics, as the basis for calculation of age-specific fertility and mortality rates, reproduction rates, life-table functions, etc.;
- (c) Where vital statistics are lacking, as a basis for estimates of vital measures:

Estimates of age-specific mortality rates and life-table functions from data of two or more censuses;

Estimates of gross reproduction rates and crude birth rates from data of one census, given an estimate of the mortality level;

Estimates of variations of fertility by regions, etc., using child-woman ratios.

2. Sex and age groups of native and foreign-born population, as a means of improving the vital measures and estimates where immigration has been important, and studying effects of immigration on population growth and structure.
3. Marital status by sex and age:
  - (a) As the basis for studies of age at marriage and frequency of celibacy, widowhood, and divorce as factors affecting fertility and population growth;
  - (b) As basic materials for the study of factors affecting trends in numbers and characteristics of households and families and their relation to needs for housing and other goods and services;
4. Number of children born alive to each woman during her lifetime, by age of woman: as a means of measuring fertility and studying factors which influence it, especially where adequate birth registration data are lacking. (Possibilities of analysis are enriched by tabulating these data in relation to marital status, age at marriage, duration of marriage, and social and economic characteristics).

## II. Population distribution and internal migration

### A. Scope:

1. Studies of population distribution within the country and its changes in the course of time, in relation to economic opportunities.
2. Studies of internal migration as a factor of population redistribution, and of the factors influencing such migration.
3. Studies of demographic, social and economic effects of internal migration, and of problems of assimilation of migrants, as they relate to the characteristics of the migrants.

### B. Purposes:

1. To provide a basis for population projections for various parts of the country, urban and rural sectors, and principal cities, as an aid to planning for provision of needed services and employment opportunities.

/...



2. To contribute to the factual basis for policies relating to:
  - (a) The location of industries and balance in economic and social development of various areas and urban-rural sectors;
  - (b) Measures aimed at influencing the volume, directions, and composition of internal migration streams;
  - (c) Measures aimed at avoiding or reducing social and economic difficulties resulting from internal migration.

C. Relevant census tabulations:

1. Population of major, intermediate and minor territorial divisions and of major cities; urban and rural population; localities by number of inhabitants:
  - (a) For measures of population density and distribution;
  - (b) For calculations of rates of population growth; and
  - (c) With vital statistics, for measuring inter-censal net loss or gain in population due to internal migration.
2. Economically active population by branch of industry and sex; population dependent upon agriculture:

As basis for density measures (ratios of agricultural population and of males engaged in agriculture to area of cultivated or cultivable land, or to total rural area).

3. Major territorial division of birth and sex of native population:

For estimates of the magnitude of in- and out-migration during an indefinite period in the past. (Analyses can be extended by classifying persons as born in locality where enumerated, born elsewhere in same major territorial division, born in another territorial division).
4. Length of residence in present place and place of previous residence:

For measures of migratory movements during a specified period of time.
5. Migrants classified by sex, age, occupation, educational level, etc.,

For studies of factors influencing the movements and of their economic, social and demographic effects.

/...

### III. Manpower studies

#### A. Scope:

1. Studies of relationships between growth and structure of population and growth of manpower, and making of manpower projections.
2. Studies of characteristics of manpower as a productive resource, and of changes in these characteristics in the course of time.
3. Studies of utilization of manpower and of employment, unemployment and under-employment.

#### B. Purposes:

1. To aid determination of policies and planning of programmes aimed at development and effective utilization of manpower resources.
2. To contribute to the basis for estimates of labour productivity and productive capacity of the economy, at present and in the future.

#### C. Relevant census tabulations:

1. Economically active and inactive population by sex and age groups:
  - (a) For studies of labour force participation rates, their trends, and factors affecting them;
  - (b) With population projections by sex and age groups, for estimation of future manpower resources;
  - (c) With life-table functions, for studies of dynamics of manpower: length of working life, accession and withdrawal rates, etc.
2. Economically active and inactive population by marital status and other social and economic characteristics, by sex and age:
  - (a) For more detailed analyses of factors affecting trends of participation in economic activities;
  - (b) For studies of characteristics of manpower relating to productive capacity.
3. Economically active population by status (as employer, employee, etc.), occupation, and industry, by sex:
  - (a) For assessment of capacity for economic development;
  - (b) For study of the utilization of manpower resources;

- (c) For measurement of manpower in various economic sectors as a basis for productivity studies, etc.;
  - (d) With cross-classification by age groups, for studies of dynamics of manpower in various economic sectors.
4. Economically active population by length of time worked during a specified period:
    - (a) For studies of employment, unemployment, and under-employment;
    - (b) For measurement of labour input as an aid to productivity studies.
  5. Population not economically active, by functional categories (housewives, students, etc.), by sex and age:
    - (a) For studies of labour reserves;
    - (b) For evaluation of census data on economic activities.

#### IV. Studies relating to conditions and problems of education

##### A. Scope:

1. Studies of demographic and other factors affecting trends of school-age population and school enrolments.
2. Studies of literacy and educational attainments of the population and labour force, the trends of these characteristics, and their relation to requirements of manpower of given educational qualifications.

##### B. Purposes:

1. Assessment of the nation's situation as regards educational qualifications of the population and manpower, as a component of the level of living and a factor of capacity for economic and cultural development.
2. Assessment of needs for educational development and for investments in educational facilities.
3. Contribution to evaluation of the functioning of the educational system, as an aid to improvement of its efficiency.

##### C. Relevant census tabulations:

1. Persons of school age attending and not attending school, by sex and age groups:

- (a) For analysis of factors affecting extent of school attendance;
  - (b) With projections of school-age population, for projecting future school enrolments;
  - (c) Cross-tabulated by level of education:  
    - For studying extent of retardation and promotion through successive grades, and of drop-outs at various levels;
    - With projections of school-age population, for projecting enrolments at various levels;
  - (d) Cross-tabulated by economic activity status: for studying economic activity as a factor of non-attendance at school.
2. Literacy and/or educational level of the population by sex and age groups:
- (a) For assessing the nation's situation as regards educational qualifications of the population, and comparison of the qualifications of successive generations;
  - (b) With projections of population by sex and age and of school enrolments by educational level, for projections of future educational qualifications of the population.
3. Literacy and/or educational level of the economically active population by sex, age, and occupation:
- (a) For assessing the sufficiency of existing educational qualifications of manpower and degree of utilization of educated manpower resources;
  - (b) With projections of active population by occupations, for assessing future needs for educational development of manpower and studying contributions of education to economic development capacity.

V. Studies of needs for housing and other consumers' goods and services

A. Scope:

- 1. Studies of numbers and composition of households and families and of factors influencing their trends.
- 2. Studies of internal migration as a factor in needs for housing.

/...

B. Purposes:

1. Assessment of present and future needs for housing and other consumers' goods and services.
2. Provision of statistical bases for programmes aimed at satisfying those needs, and for evaluation of the effectiveness of the policies and programmes that have been implemented.

C. Relevant census tabulations:

1. Households by number of persons:

For calculations of the number and size-distribution of housing units needed to accommodate the present population (by given standards), and of needs for other goods and services.

2. Households by structural type, or individuals in households, by household relationship, sex, age and marital status:

For estimating the number of units required, by given standards, for separate housing for various categories of individuals and their dependents, and needs for other goods and services.

3. Size and composition of families:

For estimates of number of separate housing units needed by various categories of persons and their dependants (based on given housing standards), and of needs for other goods and services.

4. Heads of households or families by sex and age:

(a) With population projections by sex and age, for projections of numbers of households or families;

(b) Cross-tabulated by marital status, with corresponding data for the total population:

For assessing the relationship of changes in age at marriage, frequencies of non-marriage, widowhood, etc., to the formation and dissolution of households and families, and improving the basis for projections.

VI. Studies of the level of living

A. Scope:

Studies of certain components of the level of living and their variations in different parts of the country and among various elements of the population.

B. Purpose:

To provide measures of progress toward goals of economic and social development.

C. Measures derived from census tabulations:

1. Estimates of mortality (from sex-age tabulations for successive census dates);
2. Literacy and illiteracy rates;
3. Median level of education;
4. School attendance rates;
5. Distribution of the economically active population by industry.

D. Measures for which population census data serve as a base:

1. Income per head;
2. Food consumption per head in relation to estimated food requirements;
3. Population per hospital, physician, etc.;
4. Distribution of population in different regions, in urban-rural sectors and principal cities according to availability of certain goods and services.

## ANNEX 2

INDEX OF INTERNATIONAL STANDARD PROGRAMMES  
OF TABULATIONS OF POPULATION CENSUS DATAA. United Nations standard for 1960 World Population  
Census Programme

United Nations List <sup>a/</sup>					
Tabulation Number	Topic	Priority	Corresponding CES Tabulations, Priority and No.b/	Corresponding COTA Tabula- tions. Programme and No.c/	References To Sections In This Text
1.	Population of major, intermediate and minor territorial divisions, by sex.	First	No. 1 First	No. 1 Minimum	V
2.	Population of capital and principal cities, by sex.	First	No. 2 First	No. 2 Minimum	V
3.	Urban and rural population by sex and age groups	First	No. 3 Second	None	IV, V
4.	Population by size of locality and by sex.	First	No. 4 Second	No. 3 Minimum	IV, V, VII
5.	Population by single years of age and sex.	First	No. 5 First	No. 4 Minimum	IV, VII
6.	Population by marital status, sex and age groups.	First	No. 6 First	No. 5 Minimum	IV
7.	Urban and rural population by marital status, sex and age groups.	Second	No. 7 Second	None	IV
8.	Native and foreign-born population by sex and age groups	First	No. 8 First	No. 6 Minimum	IV
9.	Foreign-born population by country of birth, sex, and age groups.	Second	No. 9 First	No. 1 Expanded	
10.	Native population by place of birth and sex.	First	No. 10 First	No. 7 Minimum	V
11.	National and alien population, by sex and age groups.	First	No. 11 First	No. 8 Minimum	
12.	Alien population by country of nationality, sex, and age groups.	Second	No. 12 Second	No. 2 Expanded <sup>d/</sup>	

a/ Principles and Recommendations for National Population Censuses, United Nations publication, Sales No.: 58.XVII.5.

b/ Conference of European Statisticians, Report of the Eleventh Plenary Session, United Nations, Conf/Eur/Stats/112, and European Programme for National Population Censuses, United Nations, Conf/Eur/Stats/WG/81.

c/ Latin American Statistical Institute, Programme of the 1960 Census of America (COTA 1960). Report of the Sixth Session of COINS (document 3841), Washington, April 1959.

d/ Not by age groups.

## ANNEX 2 (continued)

Tabulation Number	Topic	Priority	Corresponding CES Tabulations Priority and No.	Corresponding COTA Tabulations, Programme and No.	References To Sections In This Text
13.	Population in private households, by size of household, and population in institutional households.	First	No. 14 First	No. 16 Minimum	VIII
14.	Population in private households by structural type and size of household.	Second	None	None	VIII
15.	Economically active and inactive population by sex and age groups.	First	No. 19 First	No. 12 Minimum	VI
16.	Economically active population by sub-groups (e.g., employed and unemployed), sex and age groups.	Second	No. 20 Second	No. 10 Expanded	
17.	Population not economically active by sub-groups, sex and age groups.	Second	No. 21 Second	No. 11 Expanded	VI
18.	Economically active population by industry, status, and sex.	First	No. 29 First	No. 8 Expanded	V, VI
19.	Economically active population by industry, sex and age groups.	First	No. 25 First	No. 14 Minimum	V, VI
20.	Economically active population by occupation, status, and sex.	First	No. 28 First	No. 9 Expanded	VI
21.	Economically active population by occupation, sex and age.	First	No. 22 First	No. 13 Minimum	VI
22.	Economically active population by occupation, marital status, sex, and age.	Second	No. 23 Second	No. 5 Minimum Expanded <sup>e/</sup>	VI
23.	Economically active population by status, sex, and age.	Second	No. 27 Second	No. 5 Minimum	
24.	Population dependent upon each major industry group, by sex.	Second	No. 26 Second	No. 12 Expanded <sup>f/</sup>	V

<sup>e/</sup> By marital status, sex, and age groups, and by marital status, sex, and occupation.

<sup>f/</sup> Population dependent upon agriculture only, classified as: (a) economically active; (b) economically inactive, under fifteen years of age; (c) economically inactive, fifteen years of age and over.



ANNEX 2 (continued)

Tabulation Number	Topic	Priority	Corresponding CES Tabulations Priority and No.	Corresponding COTA Tabulations, Programme and No.	References To Sections In This Text
25.	Population by language (mother tongue, language usually spoken, or ability to speak designated languages), by sex and age groups.	First	No. 36 First <sup>g/</sup>	None	VII
26.	Ethnic or nationality groups of the population, by sex and age groups.	First	No. 37 First	None	IV
27.	Population fifteen years of age and over by literacy, sex, and age groups.	First	No. 38 First	No. 9 Minimum	VII
28.	Population by level of education, sex, and age groups.	First	No. 39 First	No. 10 Minimum	VII
29.	Population by school attendance, sex and age groups.	Second	No. 40 Second	No. 11 Minimum	VII
30.	Women by number of live-born children, by age of women.	First	No. 41 First	No. 17 Expanded	IV

B. Tabulations included in the Conference of European Statisticians Programme but not in the United Nations standard

Tabulation number in the Conference of European Statisticians list, and topic	Priority	References to sections of this text
13. Population in private households by sex, marital status, relationship to main supporter (or head) of household and (for persons living in family nuclei) relationship to main supporter (or head) of family nuclei.	First	VIII
15. Population in family nuclei by type of household and type and size of family nucleus.	Second	VIII
16. Main supporters (or heads) of private households by type of household, sex and age.	Second	VIII
17. Population in family nuclei by type of family nucleus and number of children.	First	-
18. Population in family nuclei by type of family nucleus, sex and age of head of family nucleus and number of children.	Second	-

<sup>g/</sup> Total population by mother tongue, sex and age; or population 5 years of age and over by usual language or designated language, sex and age.

/...

# ANNEX 2 (continued)

Tabulation number in the Conference of European Statisticians list, and topic	Priority	References to sections of this text
24. Economically active population by occupation, sex, broad age group and level of education completed.	Second	VII
30. Total population by socio-economic category, sex and age.	First	
31. Population above the minimum school-leaving age by socio-economic category, sex, broad age group and level of education completed.	Second	V, VIII
32. Private households by type and size of household, socio-economic category of head of household and number of dependents.	First	-
34. Private households by type and size of household, socio-economic category of head of household and type and number of dependents.	Second	-
35. Private households, excluding persons not related to head of household, by size and number of dependent persons.	Second	-
42. Women by number of live-born children (of the current, or most recently dissolved marriage; or the current marriage if it is also the first marriage), type of activity (economically active not active, with subdivisions for those in agriculture and others) and number of years married	Second	IV

## C. Tabulations included in the COTA 1960 expanded programme but not in the United Nations standard

Expanded programme, tabulation number and topic	References to sections of this text
3. Population receiving specialized education, by type and level of education and sex	-
4. Population attending regular schools by level of education, sex, and age groups	VII
7. Economically active population by industry, occupation and sex	VI
13. Population in private households by household relationship, marital status, and sex	VIII
14. Heads of private households by major occupation groups, sex, and age groups	VIII
15. Heads of private households by major industry groups, sex, and age groups	VIII
16. Families and number of family members, by size of family	VIII

ANNEX 2 (continued)

D. Tabulations not included in the United Nations standard, the COTA 1960 programme or the CES programmes, but which can be derived from items included in international standards for census questionnaires

Topic	References to sections of this text
Women by number of live-born children, or "own children" ratios, by age of women and social-economic characteristics (such as literacy, level of education, occupation of the husband, nationality, and ethnic characteristics)	IV
Native population by place of birth, sex, and age groups	V, X
Data on employment, unemployment and under-employment by sex and status, by sex and occupation, and by sex and industry	VI, IX
Literacy by level of education, sex, and age groups	VII
Economically active and inactive population of school age, by school attendance and sex	VII
Heads of households by marital status, sex and age groups	VIII
Characteristics of population for small areas, such as populations dependent on agriculture or number of economically active males engaged in agriculture, percentage of illiterates, median level of education, percentage of children of school age attending school, number of immigrants, selected occupational and industrial groups of the economically active population, and household characteristics	V, VI, VII, VIII, IX, X

E. Tabulations of items not included in international standards for census questionnaires

Topic	Reference to sections of this text
Place of residence at a stated previous date	V, X
Length of residence in present place, and place of prior residence	V, X

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