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CO-ORDINATION BETWEEN HOUSING CENSUSES AND POPULATION  
CENSUSES AND OF THESE CENSUSES WITH OTHER STATISTICAL  
INQUIRIES AND COMPILATION

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AND OF THESE CENSUSES WITH OTHER STATISTICAL INQUIRIES AND COMPILATIONS

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## CO-ORDINATION BETWEEN HOUSING CENSUSES AND POPULATION CENSUSES AND OF THESE CENSUSES WITH OTHER STATISTICAL INQUIRIES AND COMPILATIONS

### I. INTRODUCTION

1. The question of co-ordination between censuses of population and housing, and of these with other types of field inquiries and current statistics systems, should be considered within the context of an integrated system of data collection. Because of the amount and diversity of information which can be collected within a single country by means of the various censuses, sample surveys and record based systems, it is necessary to determine the conceptual and operational relationships which should be established and maintained among them and to co-ordinate the various activities in accordance with these relationships within the over-all system. The relationships established will depend upon the most efficient and economic use that can be made of available resources to provide the information most urgently required in its most useful form.

2. One of the first considerations in regard to the operational framework is the timing of statistical field inquiries with respect to one another. The principal statistical field inquiries carried out in a particular country may all be taken at one time, they may be spaced over a certain period, or they may be grouped according to the relationship of the data which they are designed to obtain. Certain information obtained in one inquiry may be more significant and more useful if it can be related to data obtained by means of another, or one inquiry may be used to collect information which will subsequently serve as a basis for another. In both these cases, these advantages will only accrue if both the inquiries are carried out simultaneously or at least close together in time.

3. It may be considered that the additional effort required to accomplish this will be offset by the advantage of collecting combined or easily related data. However, it may also be that the burden of conducting several inquiries at one time or during the same short period of time will undermine the efficiency of all the operations because of inadequacy of resources. Furthermore, there are sometimes advantages in keeping a census

organization continuously strong and this may be accomplished best by spreading the major inquiries rather than bunching them together. Also, the purpose of some inquiries, such as the up dating of periodic censuses, makes it mandatory that the inter-censal inquiry be undertaken only after a period of time has elapsed since the bench-mark data were collected.

4. The use of consistent concepts and definitions and of the same or related geographic divisions throughout an integrated system of data collection is essential if the advantages of careful timing with respect to the use of combined or related data are to be fully realized. However, irrespective of the timing of the various inquiries, statistical series covering a wide range of topics and obtained from a variety of sources are becoming increasingly necessary for planning economic and social development; consistency of concepts is, therefore becoming increasingly important. For example, in many countries there is a growing awareness of the need for a periodic and comprehensive assessment of living conditions and an increased emphasis on the use of planning as a tool for economic and social advancement. In this connexion, statistical series of various kinds are brought together for such operations as the measurement of levels of living<sup>1/</sup>, the formulation of national plans for economic development and social advancement<sup>2/</sup>, the preparation of plans for the development of urban areas<sup>3/</sup>,

1/ International Definition and Measurement of Levels of Living, An Interim Guide (United Nations publication, Sales No.:61.IV.7).

2/ Statistical Series for Use of Less Developed Countries in Programmes of Economic and Social Development (United Nations publication, Sales No.:59.XVII.10).

Basic Statistics for Formulating and Implementing Plans of Economic and Social Development in Countries of Asia and the Far East (United Nations publication, Sales No.:65.II.F.8).

Conclusions of the VIII Session of COINS I. Inter-American Programme of Basic Statistics (IASI document 4921); Inter-American Programme of Basic Statistics (IASI document 5031).

"Statistical Development in Africa", a draft revision of Use of the Revised List of Basic Statistics for Programming Statistical Development (United Nations document E/CN.11/CAS.3/9).

3/ Ibid.

the formulation of housing<sup>4/</sup> and health programmes, and so forth.

5. In the following text, attention will first be given to the relationship between the population census and the housing census. The relationship between each of these censuses and other statistical inquiries and compilations will then be examined.

## II. RELATIONSHIP BETWEEN THE CENSUS OF POPULATION AND THE CENSUS OF HOUSING

6. An especially close association exists between housing censuses and population censuses. The two censuses may comprise one statistical operation or they may be two separate but well co-ordinated activities; however, they should never be considered completely independently of each other because essential elements of each census are common to both. For example, an essential feature of a population census is the identification of each occupied set of living quarters and of the persons living therein and an essential feature of a housing census is the collection of information on the characteristics of each set of living quarters in association with the number and characteristics of its occupants.

7. In many countries, the population and housing censuses are taken concurrently, often with the use of a single schedule. In this way information on population and living quarters can be more readily matched, processing is facilitated and extensive analysis can be carried out. This also makes it possible to relate to the housing census data the information on demographic and economic characteristics of each household member which is routinely collected in the population census; if this information cannot be taken from the population census, it has to be collected in the housing census. At the 10th session of the United Nations Statistical Commission, in 1958, it was generally felt that, if possible, the two censuses should be held at the same time.<sup>5/</sup>

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4/ Report of the Latin American Seminar on Housing Statistics and Programmes (United Nations publication, Sales No.: 63.II.9.14);  
Report of the Seminar on Housing Statistics and Programmes for Asia and the Far East (United Nations publication, Sales No.: 59.XVII.10);  
Report of the Seminar on Housing Statistics and Programmes for Africa (United Nations document E/ON.14/CAS.5/16).

5/ Official Records of the Economic and Social Council, Twenty-sixth session, Supplement No.10, para. 124.

8. The advantages of simultaneous investigation may be offset to some extent by the additional burden on the respondent and the enumerator resulting from the increased amount of information which must be collected at one time. When a population census and a housing census are carried out together the combined operation is, for the period of its duration, likely to constitute the major statistical undertaking of the Government and care should be taken that it does not unduly interfere with the other statistical activities which might be going on at the same time. In countries where the extra burden imposed by the combined operation is likely to be a serious problem, consideration might be given to collecting data for a limited number of topics on the basis of a complete enumeration in the population and housing census, with more complex data in both fields being collected on a sample basis only, either concurrently with, or immediately following, the full enumeration.

9. The relationship between the population and the housing census will affect the means by which data on homeless persons are obtained. In the case of simultaneous censuses of population and housing, arrangements should be made to obtain data on homeless persons from the population census. Where the housing census is being carried out independently of the population census, arrangements should be made to enumerate them as part of the housing census.

10. In determining the co-ordination to be established between the census of housing and that of population, account should be taken of the necessary and desirable inter-comparisons and collation of data from the two censuses, the extent to which simultaneous operations will facilitate these and the economy of a combined operation as compared with separate undertakings.

11. Even an established pattern of timing and co-ordination of the two censuses should not be taken for granted but should be reviewed in light of the above mentioned considerations. Hence, all countries should consider:

- (a) What inter-comparisons and collation of data are needed? What methods have been found useful in the past, in the stages of planning, collection of data and processing, to accomplish this?
- (b) Can this be accomplished if the censuses are spaced or only if they are taken simultaneously?
- (c) What are the comparative costs of simultaneous and spaced censuses?
- (d) Would simultaneous censuses create competition for the same resources (such as personnel, equipment, space) between the two censuses? If this is likely, what steps could be taken to make the best use of the resources and to eliminate the competition, or at least minimize it?
- (e) If the two censuses are to be spaced, what is the best relative timing?
- (f) Are there any special conditions which would either re-inforce or invalidate the decision reached after considering (a) to (e) above?

12. Annex I shows, for 122 countries or territories in which a housing census was taken during the period 1955-1964, if it was taken (a) simultaneously with a population census and by the use of a combined questionnaire, (b) simultaneously with a population census but with the use of separate population and housing questionnaires, (c) as part of the same operation as a population census but with housing census enumeration taking place at the pre-enumeration phase of the population census or (d) as an entirely separate operation.

13. Of the total of 122 countries, 111 carried out the housing census concurrently with the census of population, 31 using separate schedules for population and housing and 77 using a combined schedule (for 3 countries questionnaires were not available). Even where different schedules were used, both censuses were carried out with the same organization and staff and one enumerator collected information for both population and housing.

14. Another 7 countries which did not carry out the census of housing concurrently with the population census, carried it out as part of the same operation but during the preparation of control listings prior to the census of population. Only 4 countries for which information was available carried out a housing census which was a completely independent operation.



15. In view of the above it seems most likely that, if a housing census is carried out at all, it will be as a combined operation with the census of population and it will be useful therefore, to consider how the two censuses can be most effectively co-ordinated. Close co-ordination is essential at all stages of the census operation but it is especially important during the following: (1) cartographic work (mapping), (2) preparation of census control listings, (3) enumeration and (4) data processing. The significance of co-ordination during these operations is discussed very briefly below.

A. Cartographic work (mapping) for censuses of population and housing

16. For the purpose of the census, cartographic work involves the determination and demarcation of the national and internal territorial boundaries of the administrative divisions and of the smaller ad hoc sub-divisions to be utilized as enumeration districts.

17. Normally, the boundaries of civil divisions within a country are already established and for census purposes need only to be verified and delineated. Enumeration areas, however, are determined primarily for the purposes of taking the censuses<sup>6/</sup> and their coverage and boundaries should be considered in relation to the requirements of at least the population and housing censuses. In addition to the enumeration areas, certain larger areas which are not civil divisions may be distinguished for census purposes according to the characteristics of living quarters or population which are of special significance for the analysis of census results. These may be, for example, economic regions of the country or they may be small homogeneous sub-divisions of localities, known in English as "census tracts". The boundaries of enumeration areas must be set so that they do not conflict with the boundaries of any areas to be used for tabulation purposes in either census.

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<sup>6/</sup> Nevertheless, it will be useful, in establishing enumeration areas, to keep in mind their use for subsequent sample surveys.

18. In some countries, the prevailing types of living quarters correspond to readily identifiable areas and where these are clearly delineated, as is often the case, for example, with squatter settlements, it may facilitate the preparation of subsequent housing programmes if the boundaries of the enumeration districts at the margin of these settlements could be drawn so as to avoid as much as possible the drawing of enumeration districts which incorporate living quarters of widely divergent types, such as conventional dwellings and improvised housing units. It may be useful to identify such settlements in order to permit tabulation and analysis of separate data for the living quarters and population located within them.

19. With respect to the determination of geographic areas for censuses of population and housing, an expert committee on the demographic aspects of urbanization<sup>1/</sup> drew attention to the desirability of enumeration areas and urban areas being convertible to those used in previous censuses. Obviously such convertibility would permit many useful inter-censal comparisons with respect to changes in the extent of urban areas and with respect to the number and characteristics of statistical units within identifiable areas.

B. Preparation of control lists for censuses of population and housing

20. Usually, in carrying out a census of population and housing, a list of buildings, living quarters or households is prepared to control the completeness of the enumeration. In addition to ensuring that all living quarters and their occupants are included in the respective censuses, these lists frequently serve other purposes which may be of significance for the population census, the housing census or both of these inquiries. For example, they may be used as a control or frame for demographic surveys or housing surveys or for other statistical inquiries; they may be used for certain aspects of census planning, (if compiled sufficiently in advance of the enumeration), for the collection of statistical data concerning population or housing or other topics, or as a convenient means of providing

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<sup>1/</sup> Report of the Ad hoc Committee of Experts on Programmes in Demographic Aspects of Urbanization, Sydney, Australia, 29 August - 2 September 1967 (United Nations document E/CN.9/218), para. 53.

advance census results. These possible uses should be kept in mind in considering the kind of control list to be used and how it can most efficiently meet the needs of both the population and the housing census<sup>8/</sup>

C. Enumeration in censuses of population and housing

21. In cases where population and housing censuses are carried out as a single statistical operation, it will be necessary to consider the particular needs of the two censuses with respect to the method of enumeration (canvasser or householder) to be used, the training of enumerators, the timing for the collection of data (data for both censuses to be collected at one time or some housing data to be collected prior to the main enumeration etc.) and the controls to be employed for the enumeration (use of census control lists). These factors should be taken into account at an early stage since the decisions will affect personnel requirements, the training programme, and the design of the questionnaire(s).

D. Data processing in censuses of population and housing

22. Because of the volume of data to be processed in a combined population and housing census, a system of priorities will need to be established for the preparation of advance and final tabulations so that the data most urgently required will be made available as early as possible.

23. Demographic information is an essential part of many of the housing tabulations and it will be necessary to decide at what stage of processing population and housing data are to be integrated. Data collected on separate questionnaires may be combined during transcription to the processing document, tape, etc. or by matching data at a later stage of the processing. In either case, it is important to ensure that adequate identification is provided so that data for living quarters can be properly related to data for the corresponding occupants. It will also be necessary to decide whether data for the complete census should be matched or whether matching a sample of data from both censuses will serve the purpose.

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<sup>8/</sup> For more detailed information concerning census control lists, reference may be made to the working paper entitled Preparation and Use of Census Control Lists.

### III. RELATIONSHIP OF POPULATION AND HOUSING CENSUSES TO OTHER FIELD INQUIRIES AND TO CURRENT STATISTICS SYSTEMS

24. The relationship of population and housing censuses with other field inquiries and current statistics systems can lead to some complicated organizational arrangements and it is not feasible to consider every possibility. In order to simplify the discussion concerning the details of some of these arrangements they are considered in two separate sections, one dealing with the relationship of the population census to other field inquiries and current statistics systems and the other dealing with the relationship of the housing census to other field inquiries and current statistics systems. It should be remembered, however, that this is an over-simplification in terms of the relationships and the corresponding requirements for co-ordination. In most cases as noted in paragraph 13, if a housing census is carried out, it is as a combined operation with the population census and under these circumstances the relationships of both of these censuses to other statistical inquiries or compilations will have to be considered simultaneously. Before going into the details it may be useful to identify some of the more common types of interrelationships between the two censuses and other field inquiries which are encountered in practice.

- (i) A housing census and a population census are carried out with other inquiries as a single operation

25. As can be seen from annex I, the inquiries most frequently carried out with censuses of population and housing are censuses of buildings, establishments and agriculture, although a census of woodlands, a census of fisheries, and information concerning villages and vital statistics have also been the subject of inquiries carried out concurrently with a combined census of population and housing.

- (ii) Information which is to serve as a basis for, or as a supplement to, other inquiries is collected in the population and/or housing census

26. This occurs most frequently in connexion with censuses of agriculture and of establishments.

- (iii) Operational material from a census of population and/or housing is used for subsequent statistical inquiries

27. Maps showing population or housing census enumeration districts can sometimes be used in connexion with subsequent agricultural censuses. Lists of households or living quarters compiled during a census of population and housing and suitably updated provide a convenient frame for other censuses and for subsequent sample surveys.

- (iv) The census of population and/or housing is carried out on the basis of information collected in another inquiry

28. The most frequent example of this occurs when an inventory or census of buildings serves as a basis for the census of population and housing.

- A. Relationship of the population census to field inquiries other than the housing census<sup>9/</sup> to current statistics systems

- (i) Population census and census of agricultural<sup>10/</sup>

29. Population censuses and agricultural censuses do not have as close an association as that existing between population censuses and housing censuses because they do not have common essential aspects even though each census has sometimes been used to collect information usually obtained in the other.

30. Although both the population census and the agricultural census can provide information on persons engaged in agriculture, they do not have a common definition of this group of persons. For the agricultural census, the group (referred to as "persons employed in agricultural work") consists of persons employed in farm work or planning necessary to the operation of an agricultural holding. Because information on these persons is always collected in relationship to a given holding, persons working on more than

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<sup>9/</sup> The relationship between the population census and the housing census is discussed in paras. 6-23.

<sup>10/</sup> Paragraphs 20-35 are, for the most part, a summary of a document on the Relationship Between Population and Agricultural Censuses (United Nations document E/CN.3/352) prepared by the Statistical Office of the United Nations and the Statistics Division of the Food and Agriculture Organization, and presented to the Statistical Commission at its 14th session, in 1966. Because there is some evidence of rather wide-spread misunderstanding of the relationship between the two censuses, the document is reproduced in its entirety in annex II.

one holding during the census reference period may be counted more than once in the census. In a population census, information is obtained on persons principally engaged in the agricultural industry or at least on persons engaged in an agricultural occupation. Persons who worked on an agricultural holding only incidentally during the reference period might not be included in either of these categories. Precisely because of the difference in definition, however, it is useful for a country to have both types of information for comparative purposes.

31. Two other concepts which at first appear to be similar but which in fact are even less closely related are those of the "farm population" and the "agricultural population". The former, as defined for the agricultural census, consists of members of the holder's household and all other persons living on the agricultural holding. It thus includes (a) the holder and all the members of his household, whether or not they live or work on the holding and (b) all other persons living on the holding, regardless of whether they work on it or not. It excludes persons who are not members of the holder's household but who work on the holding without living on any agricultural holding. The agricultural population, as used for population census purposes, should preferably consist of all economically active persons engaged in the agricultural industry, irrespective of where they live or work, and their dependants, or if this is not obtainable, at least the economically active population engaged in an agricultural occupation and their dependants. The "farm population" and the "agricultural population" are, therefore not fully comparable.

32. Despite these differences in concepts, it is sometimes considered that simultaneous enumeration of the two censuses is advantageous because it might lead to certain economies and provide an occasion for relating some characteristics of the agricultural holdings to characteristics of the population and of households associated with these holdings. Annex I shows, in fact, that 44 countries conducted an agricultural census simultaneously with a population and housing census during the 1960 census decade.

33. Although it is true that the relationship between a holding and the population and households associated with the holding can only be established if the censuses are taken at the same time (unless, of course, many demographic, social and economic characteristics of the farm population are investigated in the agricultural census), the Statistical Commission has come to the conclusion "that efforts to take the two types of censuses together should not be recommended for linking purposes only, because of the burden this would place on the statistical services involved, the risk of lowering enumerator reliability, the timing problem, the potential delay in processing the large amount of material which would result and the inability of countries to analyse the results of such a large-scale inquiry<sup>11/</sup>

34. When the two censuses are not held simultaneously, information from a recent population census can be utilized in the preparation of an agricultural census for demarcation of enumeration areas, the preparation of the frame for the census and the designing of the sample if a complete agricultural enumeration is not undertaken. In planning for a population census, consideration might be given to the possibility of collecting some agricultural information which would facilitate the preparation of a subsequent agricultural census.

35. If it is desired to collect information in an agricultural census on some demographic or social characteristics of persons employed in agricultural work or of the farm population, it would be useful to employ the same definitions and classifications of such characteristics as are used in the population census, in order to permit as high a degree of comparability as possible between the results of the two censuses. In some cases, the utilization of supplementary surveys in connexion with either census may serve to provide the information desired on the relationship between the characteristics of the population of holdings and the characteristics of the holdings.

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<sup>11/</sup> Official Records of the Economic and Social Council, Forty-second Session, Supplement No. 3, para. 28.

(2) Population census and census and register of establishments

36. Information from a population census and that from a census of establishments or from a register of establishments can each be of benefit to the other. Although the collection of information on industrial and commercial establishments is not an integral part of the population census, some information may be collected in connexion with the inquiry into economic characteristics of the population, which can be used in the preparation of listings of proprietors of industrial and commercial establishments and/or of the establishments themselves. These listings can be used directly in preparing for a subsequent census of establishments or for supplementing the registers of establishments which are maintained by many countries and utilized in their establishment censuses. Conversely, a register of establishments may be used to check the accuracy of the industry reported by economically active persons in the population census, to correct erroneous entries.

37. Since most registers of establishments cover at least all establishments in which more than a minimum number of persons (e.g., five or ten) are employed, it is usually only necessary for the population census to obtain information on smaller establishments, particularly those operated by own-account workers, but the information can also be collected without regard to the number of employees. It should be obtained for persons identified in the population census as employers and as own-account workers. This, of course, means that it is possible to collect the information only for establishments connected with private unincorporated enterprises, i.e., those belonging to individual owners and partnerships. Information on establishments belonging to private or public corporations and to public unincorporated enterprises will not be obtained because all persons connected with such establishments are considered to be "employees".

38. The information on establishments required from the population census is the name and address of each establishment and the industry in which it is principally engaged. If this is wanted without regard to size of



establishment, it must be collected for all persons reported as employers and as own-account workers. If it is required only for small establishments, it need be collected only for own-account workers and for employers with less than a specified number of employees in any one establishment. In the latter case, it may be necessary first to determine, for each employer, the number of his employees, in order to know if further information must be obtained; alternatively, however, all the data, including the number of employees in each establishment, can be collected for all employers and the information for the relevant group can be extracted at the processing stage.

39. If provision is made for all the information collected to appear on the census questionnaire, the data can be extracted from the questionnaire or from the processing documents after the enumeration. If it is considered not feasible to enter anything beyond the industry on the census questionnaire, the name and address of each establishment and the number of employees may be recorded on a separate schedule.

40. It may, however, be an advantage to the population census to have the names and addresses of related establishments entered on the questionnaire, not only for employers and own-account workers but also for all employees. This information can help to achieve greater co-ordination of industrial classification between the population census and the census of establishments. Experience has shown that some employees will report their industry on an enterprise level, some on the level of the establishment in which they work and others merely in terms of their occupation. For example, of three persons employed as carpenters performing building maintenance in a large industrial complex, one may state his industry in terms of the major activity of the entire enterprise, the second may name the activity of the establishment at which he works and the third may merely give "carpentry" as his industry. This kind of confusion in the responses may be rectified, and other mistakes corrected to some extent, if the name and address of the place of work of each economically active person is on the questionnaire and is checked against a register of establishments to determine the correct

industrial category. If this procedure is considered to be too expensive or time-consuming, it may at least be done for a sample of the population census returns in order to obtain an estimate of the level of accuracy of the census information on industry.

(3) Population census and demographic and labour force sample surveys

41. The rapidity of current changes in the size and other characteristics of populations and the demand for additional detailed data on social and economic characteristics which are not appropriate for collection in a full-scale census, have brought about the need for continuing programmes of intercensal sample surveys to collect current and detailed information on many topics which are usually investigated only at ten-year intervals in the population censuses.

42. Demographic sample surveys may be utilized, for example to obtain information on the current age-sex-marital status composition of the population, on current school-attendance rates, on fertility and mortality during the twelve months preceding the survey and on life-time fertility. While the primary purpose of labour force sample surveys is to investigate the current economic characteristics of the population, certain demographic data (such as age, sex and marital status) are usually also collected and cross-classified with economic characteristics.

43. Both kinds of surveys are also used to collect detailed data on topics which are only broadly investigated in the population census. If a survey is held immediately after the census, the survey results may be used to supplement the regular census results. This may occur, for instance, if the labour-force survey investigates underemployment by inquiring about the number of hours worked per week or per month, the operation of subsistence or semi-subsistence farms, or the number of persons who are both working and looking for work.

44. The census can provide the frame for scientific sample design in connexion with such surveys; at the same time, it provides benchmark data for evaluating the reasonableness of the overall survey results as well as

a base against which changes in the characteristics investigated in both inquiries can be measured. To permit comparison of census and survey results, the definitions and classifications employed should be as nearly alike as possible, consistent with the aims of each investigation.

(4) Population census and housing sample surveys

45. If a housing sample survey is held at the same time as a population census, the relationship between the two investigations is the same as that between a population census and a housing census held simultaneously (see part II). There is, therefore, no need for the collection in the survey of the information on the size and composition of the households and on the demographic and economic characteristics of each household member which is routinely collected in the population census. In a post-censal housing survey, however, this information must be collected, just as it must in a housing census taken apart from a population census.

46. For the housing sample survey to fulfil the functions of updating and supplementing data from a previous housing census (see para 66), it is important that the topics considered in both these inquiries should be defined in the same way. Since, however, most housing censuses make use of the information on demographic and economic characteristics of the population collected in a simultaneous population census, this means, in effect, that the housing survey should utilize the same definitions of these topics as were used in the previous population census.

47. An additional point of contact between the population census and a subsequent survey of housing conditions lies in the use of the list of households obtained in the population census as a frame, or part of a frame, for the selection of a sample of households about which information on housing conditions can be collected in the survey. (see para. 72.)

(5) Population census and multi-subject sample surveys

48. Multi-subject sample household surveys are generally aimed at measuring several different aspects of the levels-of-living conditions of the population. Hence, they must invariably include many of the topics investigated at the population census. If, therefore, the results of the survey are intended to up-date census data, every effort should be made to ensure that the definitions of the topics included in both field investigations are as closely alike as possible.

49. Special attention should be given to the definition of the household, which is the general framework within which individuals are identified as well as being an additional unit of enumeration in its own right.<sup>12/</sup> Any differences in the household definition between the two inquiries will make it impossible to up-date the census results on household characteristics.

50. The list of households provided by a census can be a suitable frame for the selection of the sample of households to be included in the survey if the survey is taken shortly after the census. If, however, there is more than a short interval between the two field investigations, these lists may be obsolete, and use may have to be made of other, more current, sources of lists of heads of households.<sup>13/</sup>

(6) Population census and population registers

51. Population censuses have been used in some countries as the starting point for the establishment of a continuous population register.<sup>14/</sup>

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<sup>12/</sup> Principles and Recommendations for the 1970 Population Censuses (United Nations publication, Sales No.: 67.XVII.3), para. 144.

<sup>13/</sup> Handbook of Household Surveys (United Nations publication, Sales No.: 64.XVII.13), pp. 116-117.

<sup>14/</sup> Some countries have taken advantage of the enumeration for a population census to collect, at the same time, information needed for the establishment of electoral rolls. This procedure is not recommended because of the deleterious effect the secondary purpose might have on the quality of the census operations and results. It increases the burden on the enumerator and it may tempt some respondents deliberately to falsify their replies to some census questions (e.g., on age or citizenship) in order to appear eligible for placement on the electoral rolls.

Conversely, if a register is already in operation, it can furnish the frame for the census and returns from the census can be compared with register data as a check on the accuracy of both. Such concurrent use of a population register and the census is found in a number of European countries, where the registers are considered to be very reliable. It has also been employed in Israel and in China (Taiwan).

52. In some countries, consideration is being given to supplementing census-collected information for individuals with data extracted from the register, on the assumption that the register is complete and up-to-date. The register information to be used would, of course, have to pertain to characteristics of individuals which are not subject to rapid change or at least to characteristics on which changes are quickly reported to the register office and entered on the records.

53. An approach to this procedure has been used in Sweden for some time. In this country, the census is taken concurrently with an annual collection of information used to up-date and complete the register. For the 1960 census, information on age, sex, marital status, year of marriage, country of birth and citizenship was actually collected for the register rather than on the census questionnaire. After comparison with the information on these particulars for each person on the register, and correction of any discrepancies, the data were published as part of the census results.

#### (7) Population census and vital statistics system

54. Census data and data derived from the vital statistics system are linked in many ways. Perhaps the simplest association of the two sets of statistics is the use of the census data as denominators for the computation of vital rates, especially rates specific for characteristics of the population normally investigated only at the time of the census. Census results, time-adjusted by vital and migration statistics, can provide current population estimates and also estimates of the future size, distribution and other characteristics of the population of the total country and sub-national areas.

55. The census itself can be a mechanism for the direct investigation of current and life-time fertility, thus providing the opportunity for differential analysis based on variables not obtained in birth statistics. The census also provides material for indirect measurements of fertility, such as the "reverse-survival" method of estimating birth rates by increasing the number of children recorded in a given age group, by a life-table survival coefficient, so as to estimate the number of births from which these children are survivors. The census can, therefore, supplement birth statistics and also provide independent data for a check on the reliability of current birth statistics.

56. It may be noted that some countries have used the census of population to produce an independent list of infants under one year of age against which to check the completeness of the birth register. Similarly, where the birth registers are thought to be sufficiently complete, the same cross-checking procedure has been used to evaluate the completeness with which infants are enumerated at the census. However, the one-to-one matching involved poses many problems and these difficulties should not be overlooked in planning to utilize the census schedules and the birth records in this way.<sup>15/</sup>

57. Because of the many associations between the two sources of information, it is desirable that procedures for the collection of census data and vital statistics, as well as for the collection of internal migration statistics be closely co-ordinated with regard to coverage, concepts, definitions, classifications and tabulations. A simple example of the basic co-ordination required is provided by the computation of birth rates for sub-national areas; if births are classified by the usual residence of the mother, the census population figures must also be on a residence basis to permit the computation of meaningful sub-national birth rates. For analyzing urban-rural differentials in vital rates, urban and rural residence must be defined in the same way in the census and in the vital statistics system. Furthermore, the increasing interest in studies of internal migration and urban development points up the need for information

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<sup>15/</sup> See Handbook of Vital Statistics Methods (United Nations publication, Sales No.: 55.XVII.1), chapter XIV.

on the fertility and mortality differentials between, for example, urban-born population of urban areas and rural-born migrants into urban areas, or between non-migrant and migrant population within the country as a whole or within sub-national areas. Consideration should be given to standardization of the definition of an internal migrant and the use of the same type of geographic unit for measuring internal migration in connexion with the population census and with birth and death reporting.

(8) Population census and international migration statistics system

58. As mentioned in paragraph 54, current international migration statistics are needed for the time-adjustment of census results to provide inter-censal estimates of the size and other characteristics of the population. For national estimates, statistics of international emigrants and immigrants by sex and age, are required. These requirements should be brought to the attention of the officials in charge of the system of international migration statistics, so that provision may be made so far as possible, for statistics which (a) distinguish migrants from other arrivals and departures and (b) are not restricted to certain categories of migrants only, such as those arriving and departing by sea or those using only certain points of entry and egress.

B. Relationship of the housing census to field inquiries other than the population census and to current statistics systems

(1) Housing census and census of buildings

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

information on the use of buildings which is significant for other inquiries. For example, information on use may identify buildings used as schools for a subsequent census of school buildings and facilities, or buildings in which establishments are located may be identified to serve as a basis for later censuses of industry or distribution.

60. In some cases the census of buildings is carried out as a separate operation prior to the census of housing but it may be used, in much the same way as described above, to furnish information required for the housing census as well as for other censuses based on the use of buildings.

61. It should be noted that a list of "buildings" may be incomplete for the purposes of a housing census since living quarters are sometimes located in places which do not fall within the definition of "building". In some countries a significant proportion of the population occupies tents, trailers, caravans, boats etc., or they may be living under bridges or piers or in natural shelters such as caves. In cases such as these special steps would be necessary to supplement a list taken from a census of buildings with a record of living quarters which are not located in buildings. Similarly, where the list of buildings is compiled as part of the housing census operation, special instructions should be issued to ensure that places other than buildings which are occupied as living quarters are included in the list.

## (2) Housing census and census of agriculture

62. The housing census may serve as a convenient means of identifying agricultural holdings for a subsequent census of agriculture and some countries include a question in the housing census to show whether the living quarters are located on an agricultural holding and the number of acres operated. The housing census also provides an opportunity to collect data concerning small-scale agricultural activity carried on in the vicinity of the housing unit or other living quarters where the area in question would not fall within the definition of an agricultural holding. These data sometimes refer to the keeping of poultry, bees and so forth.



63. Some of the discussion on the relationships between the population census and the census of agriculture contained in Part III A above also applies to the relationship between the census of housing and the census of agriculture. Special reference should be made to paragraphs 33 to 35.

(3) Housing census and censuses of establishments

64. As indicated above, in connexion with the census of buildings, a list of buildings compiled in the course of carrying out a housing census may serve as a basis for other inquiries. For this purpose it is not unusual, during the preparation of such lists, for establishments located within the buildings to be identified. Information may be obtained which describes the kind of activity carried on or the type of goods produced as well as the number of employees. On the basis of this information it is possible to select the units of enumeration for various types of inquiries such as a census of industry, a census of the distributive and service trades or other economic censuses.

65. During a housing census, the quantity and value of goods produced in the living quarters may be collected as a means of supplementing the information gathered in a census of industry. This may be an important function of the housing census in countries where "home" or "cottage" industry represents a significant proportion of industrial output.

(4) Housing census and housing sample surveys

66. Housing sample surveys may be used to supplement the data collected in a housing census. A survey may be carried out concurrently with or, so as to avoid overburdening the census schedule, subsequent to the census. It may be used to investigate the regular topics of the census or those which it is not possible to include in a general enumeration. Information relating to the quality of housing (such as the need for repair), the demand for certain types of dwellings, the floor space of housing units, represent topics which, in many countries, may require the participation of specially trained enumerators and, under these circumstances, they may be more appropriately included in housing sample surveys than in housing censuses. During intercensal period, sample inquiries may also be carried out as a means of up-dating the information obtained from the census.

67. The housing sample survey can only fulfil the functions of up-dating and supplementing housing census data if the same basic concepts are used in both inquiries. Where the sample survey is carried out as part of the census operation this should present no problem but it is a question which requires closer attention where the survey takes place during the intercensal period and personnel unconnected with the census operation are likely to be responsible for the survey.

68. The relationship between the housing census and possible intercensal surveys should be kept in mind during the planning of the housing census. If a national programme of statistical inquiries exists which establishes whether or not the housing census is to be followed by a housing sample survey this will enable the best use to be made of both inquiries. The fact that there will be an opportunity to collect housing information within a reasonable period following the census will take some of the pressure off the census with respect to the number and kind of topics to be collected, whereas, if it is not known whether or not the housing census is to be followed by a housing survey some questions which might be more efficiently collected from a sample of living quarters may be included in the census and there may be a tendency to overload the census questionnaire.

69. With respect to the mechanics of sampling it may be necessary in countries with widely divergent types of housing (for example those with a significant proportion of improvised housing) to select the sample for a housing survey from living quarters stratified by type. In these countries, as a means of facilitating the subsequent selection of a stratified sample, some consideration may be given to the possibility of distinguishing living quarters by type in census control lists.

(5) Housing census and demographic sample surveys

70. Demographic data are essential for the correct interpretation of housing census information. Therefore, any assumptions that may have been formulated on the basis of population and housing census results should be examined in the light of the new demographic data obtained from subsequent demographic surveys. Changes or trends since the previous censuses in the number or size of household, household income and expenditure, age at marriage et cetera, may require that past assumptions and the housing programmes based upon them be adjusted to take account of these changes. As a further indication of the link between housing censuses and demographic sample surveys it may be noted that a list of living quarters, compiled on the basis of the most recent housing census with suitable up-dating, not infrequently provides a frame from which the sample for a demographic survey is drawn.

71. For the proper utilization of data from a demographic sample survey, and for the best use to be made of census material in carrying out a demographic sample survey it is essential for the definition of household to be consistent with that used in censuses of housing and of population. The consistency of this and other topics included in the survey can only be attained through close co-ordination between census and survey personnel during the planning of demographic sample surveys.

(6) Housing census and multi-subject sample surveys

72. Housing information is sometimes collected as part of a multi-subject household sample inquiry. The data obtained may serve to up-date census data, or the multi-subject inquiry may be the only means available of obtaining bench-mark housing data. Normally, the topics investigated in such inquiries are similar to those included in housing censuses. Topics that require specially trained enumerators and which might therefore be collected by means of a housing sample survey would not generally be included in a multi-subject sample household survey.

73. If housing data obtained in a multi-subject household survey are to be used for up-dating data obtained in a housing census, it should be remembered that, unless special provisions are made, there will be no record in a household survey of living quarters which are unoccupied at the time of the inquiry. Furthermore, some living quarters will be occupied by more than one household and a household survey will typically record only items relating to the accommodation occupied by the household selected in the sample rather than the total accommodation available in the living quarters. For example, it must be remembered that in a household survey a question about the number of rooms occupied normally means "occupied by the household". If the number of rooms in the living quarters is wanted, that must be asked for separately. Similarly, a household survey normally seeks the number of persons in the household not the number occupying the living quarters, and so on.

74. Thus, unless special provisions are made, the data collected in a household survey may not be directly comparable to data collected in a housing census. These problems may be overcome in many cases by adopting special methods of selecting the sample; however, irrespective of the method of sample selection employed, the fact that the concepts of household and living quarters are separate and non-interchangeable must be kept in mind and special care must be taken to make clear whether the questions included in the survey relate to living quarters or to households. For example, when investigating the occupancy of living quarters, it will always be necessary to ask if the household being surveyed is the only occupant and, if not, how many other households share the accommodation and also whether the facilities being investigated are for the exclusive use of the household. The information obtained may then be adjusted, processed and analyzed separately for households and for living quarters. For more detailed information concerning multi-subject household sample surveys reference may be made to the Handbook of Household Surveys.<sup>16/</sup>

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<sup>16/</sup> Op. cit.

(7) Housing census and housing registers

75. Although some of the data included in housing registers may be of a more technical nature than that which is normally collected in a housing census, information from a census may provide a starting point for the establishment of a register. Thus close co-ordination is required between those responsible for carrying out the census and those responsible for maintaining the records in order that the same definitions and concepts may be utilized in the two operations. Since during the intercensal period, changes in the housing situation must be systematically recorded in the register there is also a close association between housing registers and a system of current housing statistics. Similarly close attention needs to be paid, therefore, to the use of consistent concepts and definitions in the register and in the system of current housing statistics. This would not present a problem if adequate co-ordination is maintained between the system of current housing statistics and the housing census operation (see para. 16).

(8) Housing census and a system of current housing statistics

76. Current housing statistics refer to housing activity. They reflect the number of dwellings constructed and certain related information such as value, number of rooms, floor space, et cetera, as well as the number of dwellings destroyed or demolished. These data are usually obtained from a system of data collection based on the administrative procedures which are required in connexion with the activity in question. For example, construction statistics may be derived from permits issued for the construction of dwellings, from records of dwelling starts or completions, from certificates of occupancy. Statistics on dwellings destroyed may be obtained from the records maintained for the levying and collection of rates and taxes.

77. Compiled monthly or quarterly, current housing statistics reflect changes in the housing inventory and although they may serve other purposes, they are also used to up-date the bench-mark data obtained from housing

censuses. A less direct but important link between a system of current housing statistics and a housing census results from the use of current housing statistics to evaluate the extent to which dwelling construction is meeting estimated housing needs. Since the housing census serves as the basis for arriving at estimated needs it is important that the concepts used in measuring construction activity should be consistent with those used in the census.

78. Because, in a system of current statistics, data from many sources must be brought together and because the data thus obtained are in turn used for a variety of purposes by a number of agencies (e.g., those concerned with national accounts, the construction industry, urban planning, housing programmes etc.), it is important that steps should be taken to ensure that consistent concepts and definitions are used by the various agencies responsible for producing the information and that these are also consistent with the purposes for which the data are to be used. An important first step in this direction would be to initiate and maintain close and continuous co-ordination between those responsible for carrying out housing censuses and the various agencies responsible for producing the information which contributes to the system of current housing statistics.

## ANNEX I

Table 1. Summary of an analysis of the relationship between population censuses and housing censuses carried out during the period 1955-1964, and the relationship of these censuses with other inquiries

Continent and Number of countries	Housing censuses taken with a census of population							Housing censuses carried out as separate operations
	Simultaneously		Same operation but housing census prior to popula- tion census	Other inquiries included				
	Same question- naire	Separate question- naire		Census of build- ings	Census of estab- lish- ments	Census of agri- cul- ture	Other	
Africa								
28	16	10	1	4	5	4	...	1
Americas								
42	29 <sup>1/</sup>	9 <sup>1/</sup>	-	...	2	25	2	1
Asia								
23	13	3	6	2	6	6	2	1
Europe								
24	16	8	-	5	9	6	1	...
Oceania								
4	3	1	-	...	...	3	...	...
USSR								
1	-	-	-	...	...	...	...	1
122	77 <sup>1/</sup>	31 <sup>1/</sup>	7	11	22	44	5	4

<sup>1/</sup> For three countries, questionnaires are not available.

Table 2. Countries according to the relationship between population censuses and housing censuses and the relationship of these censuses with other inquiries (1955-1964)

Country and date of housing census	Population census and housing census carried out as a single operation						Population census and housing census carried out as separate operations	
	Simultaneously		same operation but housing census prior to population census	Other inquiries included in operation				
	Same questionnaire	Separate questionnaire		census of buildings	census of establishments	census of agriculture		Other
AFRICA								
Algeria 1960	X	-	-	...	...	...	...	-
Angola 1960	X	-	-	X	X	...	...	-
Cape Verde Is. <sup>1/</sup> 1960	X	-	-	X	X	...	...	-
Chad 1962	-	X	-	...	...	...	...	-
Congo (Brazzaville) <sup>2/</sup> 1958	-	X	-	...	...	...	...	-
Equatorial Guinea 1960	-	X	-	...	...	X <sup>3/</sup>	...	-
Ethiopia <sup>4/</sup> 1961	X	-	-	...	...	...	...	-
Ifni 1960	-	X	-	...	...	X <sup>3/</sup>	...	-
Ivory Coast <sup>5/</sup> 1956-57	X	-	-	...	...	...	...	-
Liberia <sup>6/</sup> 1956	X	-	-	...	...	...	...	-
Libya 1964	X	-	-	...	X	...	...	-
Mauritius 1962	-	X	-	...	...	...	...	-
Morocco 1960	X	-	-	...	...	...	...	-
Mozambique 1960	-	X	-	X	X	...	...	-
Rhodesia (S), Zambia, <sup>7/</sup> Malawi 1956	X	-	-	...	...	...	...	-

<sup>1/</sup> Urban areas only.

<sup>2/</sup> Housing of African population in city of Pointe-Noire only

<sup>3/</sup> List of holdings compiled for census of agriculture.

<sup>4/</sup> City of Addis Ababa only.

<sup>5/</sup> City of Bouaké and urban centres of D'Abengourou, Agboville, Dibokro and Man.

<sup>6/</sup> City of Monrovia only.

<sup>7/</sup> Housing of non-African population plus African employees in the European money economy.



Table 2. (Cont'd)

Country and date of housing census	Population census and housing census carried out as a single operation							Population census and housing census carried out as separate operations
	Simul- taneously		Same operation but housing census prior to population census	Other inquiries included in operation				
	Same questionnaire	Separate questionnaire		census of buildings	census of establishments	census of agriculture	other	
AFRICA (CONT'D)								
St. Helena 1956	-	X	-	...	...	...	...	-
Sao Tomé & Príncipe 1960	X	-	-	X	X	...	...	-
Seychelles 1960	-	-	X	...	...	...	...	-
South Africa <sup>8/</sup> 1960	-	X	-	...	...	...	...	-
Southern Rhodesia <sup>9/</sup> 1962	X	-	-	...	...	...	...	-
Spanish North Africa 1960	-	X	-	...	...	X <sup>3/</sup>	...	-
Spanish Sahara 1960	-	X	-	...	...	X <sup>3/</sup>	...	-
Sudan <sup>10/</sup> 1960	-	-	-	...	...	...	...	X
Togo <sup>11/</sup> 1958-59	X	-	-	...	...	...	...	-
Tunisia 1956	X	-	-	...	...	...	...	-
Uganda <sup>12/</sup> 1959	X	-	-	...	...	...	...	-
United Rep. of Tanzania <sup>13/</sup> 1958	X	-	-	...	...	...	...	-
Zambia <sup>9/</sup> 1963	X	-	-	...	...	...	...	-
AMERICAS								
Antigua 1960	X	-	-	...	...	X <sup>14/</sup>	...	-

<sup>3/</sup> List of holdings compiled for census of agriculture.

<sup>8/</sup> Excluding housing of the Bantu population. <sup>13/</sup>

<sup>9/</sup> Housing of African population only.

<sup>10/</sup> City of Wadi Halfa only.

<sup>11/</sup> Communes of Lomé, Anécho, Tsévié, Palimé, Atalaoamé, Sokodé and Bassari only.

<sup>12/</sup> Housing of non-Africans and Africans residing on their premises in cities of Kampala, Jinja, Mbale, Tororo and Masaka only.

The census covered the former Zanzibar.

<sup>14/</sup> Information collected in the population census to identify farmers for the census of agriculture.

Table 2. (Cont'd)

Country and date of housing census		Population census and housing census carried out as a single operation						Population census and housing census carried out as separate operations	
		Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation				
		Same questionnaire	Separate questionnaire		census of buildings	census of establishments	census of agriculture		other
AMERICAS (CONT'D)									
Argentina	1960	X	-	-	...	...	X	...	-
Bahamas	1963	X	-	-	...	...	...	...	-
Barbados	1960	-	X	-	...	...	X <sup>14/</sup>	...	-
Bermuda	1960	X	-	-	...	...	...	...	-
Brazil	1960	-	X	-	...	...	...	...	-
British Honduras	1960	X	-	-	...	...	X <sup>14/</sup>	...	-
British Virgin Is.	1960	X	-	-	...	...	X <sup>14/</sup>	...	-
Canada	1961	-	X	-	...	X	X	X <sup>15/</sup>	-
Cayman Islands	1960	X	-	-	...	...	X <sup>14/</sup>	...	-
Chile	1960	X	-	-	...	...	X	...	-
Colombia	1964	X	-	-	...	X <sup>16/</sup>	...	...	-
Costa Rica	1963	X	-	-	...	...	X	...	-
Dominica	1960	-	X	-	...	...	X <sup>14/</sup>	...	-
Dominican Republic	1960	X	-	-	...	...	...	...	-
Ecuador	1962	X	-	-	...	...	...	...	-
El Salvador <sup>1/</sup>	1961	-	X	-	...	...	X <sup>17/</sup>	...	-
French Guiana	1961	18/	18/	-	...	...	...	...	-

<sup>1/</sup> Urban areas only.<sup>14/</sup> Information collected to the population census to identify farmers for the census of agriculture.<sup>15/</sup> Census of woodlands and irrigation.<sup>16/</sup> In the housing questionnaire, information was collected concerning products manufactured by the family either for sale or for some other establishment.<sup>17/</sup> Population and housing censuses carried out 1 May 1961, census of agriculture 1 June 1961.<sup>18/</sup> Housing and population censuses carried out together but questionnaire not available.

Table 2. (Cont'd)

Country and date of housing census		Population census and housing census carried out as a single operation						Population census and housing census carried out as separate operations	
		Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation				
		Same question-naire	Separate question-naire		census of buildings	census of establishments	census of agriculture		other
AMERICAS (CONT'D)									
Grenada	1960	-	X	-	...	...	X <sup>14/</sup>	...	-
Guadeloupe	1961	<u>18/</u>	<u>18/</u>	-	...	...	...	...	-
Guatemala	1964	X	-	-	...	...	X	...	-
Guyana	1960	-	X	-	...	...	X <sup>14/</sup>	...	-
Honduras	1961	X	-	-	...	...	X <sup>19/</sup>	...	-
Jamaica	1960	X	-	-	...	...	X <sup>14/</sup>	...	-
Martinique	1961	<u>18/</u>	<u>18/</u>	-	...	...	...	...	-
Mexico	1960	X	-	-	...	...	X <sup>20/</sup>	...	-
Montserrat	1960	X	-	-	...	...	X <sup>14/</sup>	...	-
Netherlands Antilles	1960	X	-	-	...	...	X <sup>21/</sup>	...	-
Nicaragua	1963	X <sup>22/</sup>	-	-	...	...	X	...	-
Panama	1960	X	-	-	...	...	...	...	-
Paraguay	1962	X	-	-	...	...	...	...	-
Peru	1961	X	-	-	...	...	X	X <sup>23/</sup>	-
Puerto Rico	1960	X	-	-	...	...	...	...	-
St. Kitts-Nevis-Anguilla	1960	X	-	-	...	...	X <sup>14/</sup>	...	-

\* <sup>14/</sup> Information collected in the population census to identify farmers for the census of agriculture

<sup>18/</sup> Housing and population censuses carried out together but questionnaire not available.

<sup>19/</sup> Information collected concerning agricultural holdings.

<sup>20/</sup> For urban and populated areas, agricultural information collected in the housing census as a supplement to census of agriculture which was carried out 2-15 June 1960. Census date of population and housing censuses 8 June 1960.

<sup>21/</sup> Information on live-stock collected with housing information.

<sup>22/</sup> Single questionnaire for census of population, housing and agriculture.

<sup>23/</sup> Census of fisheries.

Table 2. (Cont'd)

Country and date of housing census	Population census and housing census carried out as a single operation							Population census and housing census carried out as separate operations
	Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation				
	same question-naire	same question-naire		census of buildings	census of establishments	census of agriculture	other	
AMERICAS (CONT'D)								
St. Lucia 1960	-	X	-	...	...	X <sup>14/</sup>	...	-
St. Vincent 1960	-	X	-	...	...	X <sup>14/</sup>	...	-
Trinidad & Tobago 1957-58	-	-	-	...	...	X <sup>14/</sup>	...	X
Turks & Caicos Is. 1960	X	-	-	...	...	X <sup>14/</sup>	...	-
United States 1960	X	-	-	...	...	...	...	-
Uruguay 1963	X	-	-	...	...	...	...	-
Venezuela 1961	X	-	-	...	...	...	...	-
United States Virgin Is. 1960	X	-	-	...	...	...	...	-
ASIA								
Bahrain 1959	X	-	-	...	...	...	...	-
Brunei <sup>24/</sup> 1960	-	-	X	...	...	X <sup>25/</sup>	...	-
Cambodia 1962	X	-	-	...	...	...	...	-
Ceylon 1963	-	-	X	...	...	...	...	-
Cyprus 1960	-	X	-	...	...	X	...	-
Hong Kong 1961	X	-	-	...	...	...	...	-
India 1960	-	-	X	...	X <sup>26/</sup>	...	...	-
Indonesia 1961	-	-	X	...	X	X	...	-
Iran 1956	X	-	-	...	X <sup>27/</sup>	X	X <sup>28/</sup>	-

<sup>14/</sup> Information collected in the population census to identify farmers for the census of agriculture.

<sup>24/</sup> Towns of Brunei, Tutong, Seria and Belait only.

<sup>25/</sup> Information for the census of agriculture collected with the census of housing (during pre-census listing operation).

<sup>26/</sup> Information collected on buildings used as factories, workshops or establishments.

<sup>27/</sup> Household industries.

<sup>28/</sup> Information concerning villages.

Table 2. (Cont'd)

Country and date of housing census	Population census and housing census carried out as a single operation							Population census and housing census carried out as separate operations	
	Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation					
	same question-naire	separate question-naire		census of buildings	census of establishments	census of agriculture	other		
ASIA (CONT'D)									
Iraq	1957	X	-	-	...	...	...	...	-
Israel	1961	X	-	-	...	...	...	...	-
Japan	1960	X <sup>29/</sup>	-	-	...	...	...	...	-
Jordan	1961	X <sup>30/</sup>	-	-	...	...	...	...	-
Korea, Rep. of	1960	X	-	-	...	...	...	...	-
Kuwait	1957	X	-	-	...	X	...	...	-
Macau	1960	-	X	-	X	X	...	...	-
Malaysia									
East Malaysia <sup>31/</sup>	1960	-	-	X	...	...	X <sup>25/</sup>	...	-
Pakistan	1960	-	-	X	...	X <sup>32/</sup>	...	X <sup>33/</sup>	-
Philippines	1960	-	X	-	...	...	X <sup>34/</sup>	...	-
Portuguese Timor	1960	X	-	-	...	...	...	...	-
Ryukyu Islands	1960	X	-	-	...	...	...	...	-
Syria <sup>35/</sup>	1958	-	-	-	X	...	...	...	X
Turkey	1960	X	-	-	...	...	...	...	-

<sup>25/</sup> Information for the census of agriculture collected with the census of housing (during pre-census listing operation).

<sup>29/</sup> Although some housing information is collected with the census of population, most housing information in Japan is obtained by means of periodic sample surveys.

<sup>30/</sup> Some housing information collected during pre-census listing.

<sup>31/</sup> In Sarawak, towns of Kuching, Simanggang, Sarikei, Sibul, Bintulu, Miri, Lutong and Limbang. In Sabah, towns of Jesselton, Sandakan, Tawau and Victoria (Labuan).

<sup>32/</sup> Information on cottage industries.

<sup>33/</sup> Information on births and deaths.

<sup>34/</sup> Information on agricultural holdings - census of agriculture was carried out in May 1960. Census of population and housing, 1 February 1960.

<sup>35/</sup> Cities only.

Table 2. (Cont'd)

Country and date of housing census		Population census and housing census carried out as a single operation						Population census and housing census carried out as separate operations	
		Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation				
		same questionnaire	separate questionnaire		census of buildings	census of establishments	census of agriculture		other
EUROPE									
Austria	1961	-	X	-	X	X	...	...	
Belgium	1961	-	X	-	...	X <sup>36/</sup>	...	...	
Bulgaria	1956	-	X	-	...	...	...	...	
Czechoslovakia	1961	X	-	-	...	...	...	...	
Denmark	1960	X	-	-	...	...	...	...	
Finland	1960	X	-	-	X	X	...	...	
France	1962	-	X	-	...	...	X <sup>19/</sup>	...	
Germany									
Fed. Rep. of Germany	1961	-	X	-	X	X	...	...	
Greece	1961	X	-	-	...	...	X	...	
Hungary	1960	X	-	-	X <sup>37/</sup>	...	...	...	
Iceland	1960	X	-	-	...	...	...	...	
Ireland	1961	X	-	-	...	...	X <sup>19/</sup>	...	
Italy	1961	X	-	-	...	X <sup>36/</sup>	...	...	
Netherlands	1960	X	-	-	...	...	...	...	
Norway	1960	X	-	-	...	...	...	X <sup>23/</sup>	
Poland	1960	X	-	-	...	...	X	...	
Portugal	1960	X	-	-	X	X	...	...	
Spain	1960	-	X	-	...	...	X <sup>19/</sup>	...	

<sup>19/</sup> Information collected concerning agricultural holdings.

<sup>23/</sup> Census of fisheries.

<sup>36/</sup> Census of commerce and industry.

<sup>37/</sup> Building information were collected with separate questionnaire.

Table 2. (Cont'd)

Country and date of housing census	Population census and housing census carried out as a single operation							Population census and housing census carried out as separate operations
	Simultaneously		Same operation but housing census prior to population census	Other inquiries included in operation				
	same questionnaire	separate questionnaire		census of buildings	census of establishments	census of agriculture	other	
EUROPE (CONT'D)								
Sweden 1960	X	-	-	...	...	X <sup>19/</sup>	...	-
Switzerland 1960	-	X	-	...	...	...	...	-
United Kingdom								
England & Wales 1961	X	-	-	...	X <sup>38/</sup>	...	...	-
Northern Ireland 1961	X	-	-	...	X <sup>38/</sup>	...	...	-
Scotland 1961	X	-	-	...	X <sup>38/</sup>	...	...	-
Yugoslavia 1961	-	X	-	...	...	...	...	-
OCEANIA								
Australia 1961	X	-	-	...	...	X <sup>39/</sup>	...	-
Fiji 1956	X	-	-	...	...	X <sup>40/</sup>	...	-
Guam 1960	X	-	-	...	...	...	...	-
New Zealand 1961	-	X	-	...	...	X <sup>41/</sup>	...	-
USS								
USSR 1960	-	-	-	...	...	...	...	X

<sup>19/</sup> Information collected concerning agricultural holdings.

<sup>38/</sup> Information collected to compile a register of establishments for the census of distribution.

<sup>39/</sup> Housing section of the questionnaire included a question as to whether housing unit was located on an agricultural holding together with size and location of holding.

<sup>40/</sup> Information concerning live-stock included in "Record Compilation Book".

<sup>41/</sup> Information concerning number of poultry included in housing questionnaire

## ANNEX II

### RELATIONSHIP BETWEEN POPULATION AND AGRICULTURAL CENSUSES\*

(Report prepared by the Statistical Office of the United Nations and the Statistics Division of the Food and Agriculture Organization)

#### INTRODUCTION

1. At its thirteenth session, the Statistical Commission requested that a progress report on co-ordination of the international statistical programme, including the relationship between the 1970 recommendations for the two censuses, be presented to it at its fourteenth session.<sup>1/</sup> The Conference of the Food and Agriculture Organization, at its thirteenth session, considered<sup>2/</sup> that, in further programming work for the census, particular attention should be given to the co-ordination of the sections "Employment in agriculture" and "Farm population" in the Food and Agriculture Organization Census Programme with the relevant sections of the United Nations draft recommendations for the 1970 population censuses.
2. The present paper deals with the relationship between the two types of censuses and the relationship between the recommendations for the 1970 population censuses and those for the 1970 agricultural censuses, and considers the possibility of increasing the complementary use of the results of each census.
3. The draft recommendations for the 1970 population censuses contain a section dealing with the relationship between the two censuses, which reads:

"Population censuses and agricultural censuses do not have as close an association as that existing between population censuses and housing censuses because they do not have common essential aspects.

"Although both the population census and the agricultural census can provide information on persons engaged in agriculture, they do not

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\* United Nations document E/CN.3/352, 14 July 1966.

1/ Official Records of the Economic and Social Council, Thirty-Ninth Session, Supplement No. 13, paragraph 182.

2/ Food and Agriculture Organization of the United Nations, Provisional Report of the Thirteenth Session of the Conference, 20 November - 9 December 1965, Rome, 1966, paragraph 305.



have a common definition of this group of persons. For the agricultural census, the group consists of persons employed in farm work or planning necessary to the operation of an agricultural holding; information on these persons is always collected in relationship to a given holding. Persons working on more than one holding during the census reference period, may, therefore, be counted more than once in the census. In a population census, information is obtained on persons principally engaged in the agricultural industry or at least on persons engaged in an agricultural occupation. Persons who worked on an agricultural holding only incidentally during the reference period might not be included in either of these categories. Precisely because of the difference in definition, however, it may be useful for a country to have both types of information for comparative purposes.

"In the preparation of an agricultural census, information from a recent population census can be utilized for demarcation of enumeration areas, the preparation of the frame for the census, and the designing of the sample if a complete agricultural enumeration is not undertaken. In planning for a population census, consideration might be given to the possibility of collecting some agricultural information which would facilitate the preparation of a subsequent agricultural census.

"If it is desired to collect information in the agricultural census on some demographic or social characteristics of the agricultural population or of the farm population, it would be useful to employ the same definitions and classifications in the two censuses. In some cases, the utilization of supplementary sample surveys in connexion with either census may serve to provide the information desired on the relationship between the population and the holding."<sup>3/</sup>

4. Section N of the Introduction to the Program for the 1970 World Census of Agriculture, approved by resolution 3/65 of the thirteenth session of the FAO Conference, reads:

"The 1970 World Census of Agriculture includes in its scope information on employment in agriculture. The same topic can be investigated in the population census. The census of population, covering all branches of economy, provides data on employment in all occupations and branches of industry. It also provides, therefore, a count of the persons working in agriculture. It eliminates the duplicate enumeration which occurs in the agricultural census in relation to persons engaged on different holdings; these holdings;

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<sup>3/</sup> Principles and Recommendations for a Population Census: Draft Recommendations for the 1970 Censuses, E/CN.3/342, paragraphs 28-31.

these persons are reported in the census of agriculture by each holder for whom they work. However, the population census does not always give a good account of the persons working in agriculture, as the results depend largely on the time reference adopted for the census. The time reference of the population census frequently overlaps the period when agricultural work is on the ebb, and then the population census figures may seriously underestimate the population engaged in agriculture.

"Censuses of agriculture and censuses of population have both been used to secure information on the persons who are connected with agriculture. However, the concepts used in both censuses necessarily vary. Because of different enumeration units in both censuses, their criterion for enumerating the agricultural population differs. A census of agriculture as a census of agricultural holdings uses the residence criterion. Hence, it enumerates as the agricultural population those people who are living on the agricultural holdings or in the households of the agricultural holders. This population is therefore called 'farm population'. A census of agriculture, however, cannot be the means of enumerating also the agricultural labourers and their dependents who live outside the agricultural holdings, because information on these persons, specifically on their dependents, cannot be generally obtained from respondents in the agricultural census. A census of population using the occupational affiliation with agriculture as a criterion for enumerating agricultural population would include these persons. Nevertheless, a number of people living on and operating small holdings, but whose main economic activity is outside agriculture, would usually be excluded from the agricultural population together with persons dependent on them, even though they are connected with agriculture. Moreover, it is often not feasible to include in the population census information on holdings necessary to relate agricultural population data to the characteristics of agricultural holdings with which they are associated.

"Thus, both censuses produce meaningful though different series of population data connected with agriculture. Where the two censuses are taken simultaneously, it is possible to secure information about the population connected with agriculture in such a way that the characteristics of the population can be related directly to the characteristics of the holdings. In the case where population and agricultural censuses are taken separately but close in time, there would be a possibility of matching a sample of the population census returns with the information obtained from the agricultural census and to relate population census data to the characteristics of agricultural holdings. However, this operation is rather difficult and costly.

"Information on employment in agriculture and on farm population obtained in an agricultural census can be easily related to size and other characteristics of the agricultural holdings. This can also be done to some extent in a population census by the inclusion of a few questions regarding the holdings. Countries should therefore examine to what extent it is feasible to incorporate in their population census programmes questions aimed at eliciting information on the economic and social characteristics of their agricultural population. Consideration should also be given to the possibility of including a few other questions, making it possible to relate this type of information to the size, tenure and type of holding.

"Since the census of agriculture is usually limited to holdings above a specified minimum size, some countries have found it useful to ask, in their population census, for some limited information concerning agricultural activities outside the holdings covered by the census of agriculture, in particular with regard to livestock and production of certain vegetables and horticultural specialities, in order to obtain additional agricultural data not collected in the agricultural census itself. Similarly, the population census may be the best source of information on persons who provide services directly to agriculture."<sup>4/</sup>

5. The statements quoted above make it clear that the relationship between two censuses can be described broadly under the following headings:
- (a) Complementary use of the results of population censuses and of agricultural censuses for analytical purposes;
  - (b) Feasibility of simultaneous enumeration for the two censuses;
  - (c) Comparison of related concepts in the world-wide recommendations for the 1970 censuses;
  - (d) Use of the population census in the preparation of the agricultural census;
  - (e) Use of the agricultural census in the preparation of the population census;
  - (f) Inclusion of agricultural questions in the population census;
  - (g) Collection of population information in the agricultural census;

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<sup>4/</sup> Food and Agriculture Organization of the United Nations, Program for the 1970 World Census of Agriculture, Rome, 1965.

6. Each of the relationships is examined under the respective headings below. Part I sets forth very briefly the two ways in which the results of the two censuses can theoretically complement each other for analytical purposes and indicates the prerequisites for each type of complementary use. Parts II and III consider the extent to which the prerequisites exist and possible means of achieving them. Parts IV-VII are concerned with other relationships between the two censuses, i.e., the use of either census to assist in the preparation of the other (parts IV and V) and the use of either census to collect information on topics usually investigated in the other (parts VI and VII). The conclusions reached on the relationship between the two types of censuses are set forth in part VIII.

I. COMPLEMENTARY USE OF THE RESULTS OF POPULATION CENSUSES  
AND OF AGRICULTURAL CENSUSES FOR ANALYTICAL PURPOSES

7. There are two major possible complementary uses of the results of the two censuses for analytical purposes.<sup>5/</sup> These are (a) relating information on certain characteristics of persons connected with agriculture which are obtained in the population census with information on characteristics of the agricultural units which they operate, on which they live or on which they work, which are obtained in the agricultural census, and (b) comparing information on specified characteristics of persons connected with agriculture obtained independently in each census.

8. A third possibility is to obtain some agricultural information in the population census for agricultural units not covered by the agricultural census, in order to complete the agricultural information needed by the country.

9. If the data on the characteristics of individuals or of their households, collected in the population census, are to be usefully collated with the data on the holdings with which these persons are connected, as collected in the agricultural census, the information must relate to the same reference period. If the two enumerations are separated in time, population data and agricultural data will refer to different points of time;

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<sup>5/</sup> The uses of information from a population census in the preparation of an agricultural census are discussed in part IV.

their complementary utilization. If the two enumerations take place simultaneously, information collected in either census could be collated with that from the other, no matter what might be the differences in the concepts applied independently for the purpose of each census.

10. The possibility of the comparison of information on specified characteristics of persons connected with agriculture, obtained from population censuses and from agricultural censuses held at different times, in order to measure changes in these characteristics over the time interval, is dependent upon the use of identical concepts, not only in defining the characteristics concerned, but especially in defining the group of persons to be identified. The differences between certain concepts used in the two censuses are a serious obstacle to the comparison of their results. These concepts are "farm population", "agricultural population" and "persons employed in agricultural work". Small differences in the definition of "household" should also be noted.

## II. FEASIBILITY OF SIMULTANEOUS ENUMERATION FOR THE TWO CENSUSES

11. In the 1960 censuses, population and housing were enumerated simultaneously with agricultural holdings in countries such as Brazil, Canada, Cyprus, Guatemala, Madagascar, Morocco, New Zealand (1965 census), Peru, Poland and the Virgin Islands (US).

12. The advantages and disadvantages of such simultaneous enumeration were considered at the FAO/ECAFE Seminar on the 1970 World Census of Agriculture, held in Bangkok in December 1964.<sup>6/</sup> It was recognized that simultaneous enumeration provides an occasion for relating some characteristics of the agricultural holdings to characteristics of population and of households connected with these holdings, and that, in certain cases, combining the two censuses would lead to economies, but some disadvantages were also pointed out. First of all, combination of the two enumerations might result in an increase of enumeration errors, especially those related to the agricultural part of the census, which is generally considered more

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<sup>6/</sup> Report of the FAO/ECAFE Seminar on the 1970 World Census of Agriculture, (United Nations document E/CN.11/ASTAT/Conf.6/L.11), paragraph 13.

difficult than the part on population. Secondly, special difficulties will arise if objective measurements have to be made to collect certain agricultural information; this presumably, would delay the completion of enumeration. Thirdly, experience shows that, in many cases where the agricultural enumeration was combined with that for the population census, the latter data were processed first, thus seriously delaying the processing of agricultural information. Finally, it would be difficult to use sampling in the enumeration because of the problems in evolving an efficient sampling design for the purposes of both types of censuses combined.

13. In addition to the points made by the Seminar, another consideration should also be taken into account. Combined enumeration is sometimes considered essential in countries where a substantial number of the agricultural holders live in the cities. Collecting information from these holders would add greatly to the cost of a separate agricultural census. The timing of combined censuses, however, raises an additional problem. In a number of countries, population censuses are taken at the end of the calendar year which, in many cases, is a period of low agricultural activity. Holding of an agricultural census during the active season in agriculture is particularly necessary when objective measurements of area and yields have to be carried out, which can only be done when the crops are in the field.

14. On balance, it appears that the disadvantages of simultaneous enumeration outweigh the advantages. Taking of the population census and the agricultural census at the same time cannot, therefore, be recommended even though it is the only method of relating different types of information from the two censuses.

### III. COMPARISON OF RELATED CONCEPTS IN THE WORLD-WIDE RECOMMENDATIONS FOR THE 1970 CENSUSES

#### A. "Farm population" and "agricultural population"

15. The "farm population" is defined in section 5 of the Program for the 1970 World Census of Agriculture as "members of the holder's household

and all other persons living on the agricultural holding". It thus includes (a) the holder and all the members of his household, whether or not they live or work on the holding and (b) all other persons living on the holding, regardless of whether they work on it or not. It excludes persons who are not members of the holder's household but who work on the holding without living on any agricultural holding.

16. The "agricultural population" should preferably consist of all economically active persons engaged in the agricultural industry, irrespective of where they live or work, and their dependants, or if this is not obtainable, at least the economically active population engaged in an agricultural occupation and their dependants.

17. The "farm population" and the "agricultural population" as now defined are, therefore, not fully comparable. The difference in the concepts appears to be the consequence of a difference in the unit of enumeration for each census.

18. The unit of enumeration for the population census is the individual but the household is the social unit within which individuals are identified. Enumerated persons may be counted as part of the household (and hence the geographic area) where they usually reside, or as part of the household (and hence the geographic area) where they were found at the time of the census. Therefore, the population of a holding which would be identified in the population census would consist either of the persons usually resident there or of the persons there at the time of the census.

19. The unit of enumeration in an agricultural census, on the other hand, is the holding and the living quarters occupied by the holder's household are always considered part of the holding, even when they are not physically located on it. Since, however, persons, other than the members of the holder's household, working on the holding but not living on it are excluded from the population of the holding, it is clear that the households and population included in any sub-national geographic unit may be different for the two censuses. This discrepancy can be avoided, of course, if the two censuses are conducted simultaneously, so that households can be allocated to geographic areas as required for the tabulation of each census.

20. The difference between the concepts of "farm population" and "agricultural population" affects the investigation in the agricultural census of three topics on which information is required for tabulations in the Program for the 1970 World Census of Agriculture and also for tabulations recommended in the draft Principles and Recommendations for a Population Census. The first of these topics is the main occupation of the holder ("agricultural", "non-agricultural"). This information is of special value for the analysis of the managerial situation of agricultural holdings. Since the population census recommendations call for the investigation of occupation of the economically active population, there would be no difficulty in deriving the information for holders from the population census if the holders could be suitably identified from the census results.

21. For the other two demographic topics on which information is required for the recommended tabulations of the "farm population" in the 1970 agricultural censuses, namely sex and age (under 15 years, 15-64 years, 65 years and over), the data from the population census could also be used readily.

22. The possibility of increased comparability between the respective groups of persons connected with agriculture identified in the two censuses would seem to depend on (a) a further delimitation of the "farm population" which would restrict it to persons in households actually located on a holding and (b) the identification in the population census of households actually located on a holding. This would, in effect, result in a third concept, to be applied in both censuses, i.e., the population in households living on agricultural holdings. This concept would not, however, satisfy the needs of the agricultural census for information on the households of all holders. It would, in fact, provide very little information in those countries where a large part of the holders live off their holding. Furthermore, as stated in part VI, the identification of holdings in a population census is considered to be accurate enough to guarantee that the holdings identified in each census would be comparable. It does not, therefore, appear to be possible to increase the comparability of the "farm population" and the "agricultural population".



B. "Economically active agricultural population" and "persons employed in agricultural work"

23. There is a closer relationship between the concept of the "economically active agricultural population", as defined for the population census, and that of "persons employed in agricultural work", as collected by the agricultural census, than there is between the "agricultural population" and the "farm population". The "economically active agricultural population" consists preferably of all economically active persons engaged in the agricultural industry, or, if this is not obtainable, at least the economically active population engaged in an agricultural occupation. "Persons employed in agricultural work" consist of persons employed in farm work or planning necessary to the operation of an agricultural holding. Because information on these persons is always collected in relationship to a given holding, however, persons working on more than one holding during the census reference period may be counted more than once in the census. On the other hand, the population census may not include in its "economically active agricultural population" persons who worked on an agricultural holding only incidentally during the reference period, because it usually collects information only on the principal activity of each person. Furthermore, a population census held (as is sometimes the case) during the slack season of agriculture may not give a good accounting of the persons working in agriculture.

24. Information on "persons employed in agricultural work" collected in an agricultural census is usually used in determining the degree of dependency of the holder on outside labour and the volume of work performed on the holding. The demographic characteristics of the population required for the tabulations of employment in agriculture recommended in the Programme for the 1970 World Census of Agriculture, in fact, are only age (in three broad groups) and sex, both of which are easily obtainable through the agricultural census enumeration. For this reason, and also because the population census cannot relate the "economically active agricultural population" to particular holdings, there does not appear to be a need to bring the two concepts closer together. In fact, it is probably preferable that they remain distinct because they supply different types of information needed by a country.

25. If, however, it is desired to achieve a greater degree of comparability, for measuring changes over time in the total number of persons whose work is connected with agriculture, or in their sex and age distribution, an additional question could be asked in the population census to determine if economically active persons reporting a non-agricultural occupation or industry also performed any agricultural work. Persons with such a secondary activity could be added to the "economically active agricultural population" for comparison with agricultural census results. Duplicate enumeration of "persons employed in agricultural work" in the agricultural census can hardly be avoided. It is, however, negligible for the category of "permanent workers".

C. Household

26. The concept of "household" is basic to the population census and is also used in the agricultural census. The definition of "household" in the Program for the 1970 World Census of Agriculture reads:

"The term 'household' means the aggregate of persons generally bound by ties of kinship who normally reside together, not necessarily under the same roof. This includes the holder, the relatives living with him, and the other persons who share that community of life for reasons of work or because of other connections. The other persons who share the rooms occupied by the holder's family or who use separate rooms in the same dwelling unit but take their meals with the family, should be considered as members of the household. Persons who live alone and lodgers who occupy separate rooms in the dwelling unit and do not take their meals with the holder's family, should not be considered as part of the holder's household."

27. The definition in the draft Principles and Recommendations for a Population Census (E/CN.3/342, paras. 141-145) is:

"(1) Household

"The concept of 'household' is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either: (a) a one-person household, that is, a person who makes provision for his own food or other essentials for living without combining with any other person to form part of a multi-person household or

(b) a multi-person household, that is, a group of two or more persons who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons, or a combination of both.

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

"Persons boarding or lodging with households should not be considered as part of the host household but should be classified as constituting separate one- or multi-person households, in accordance with their arrangements for supplying themselves with the essentials for living.

"(2) Persons not living in households

"Special provision must be made for the enumeration of persons who are not members of households. These include persons in military installations, in correctional and penal institutions, in the dormitories of schools and universities, in hospitals, in religious institutions, and so forth.

"Persons living in hotels or boarding houses should not be classified as not living in households but should be distinguished as members of one- or multi-person households on the basis of the arrangements which they make for providing themselves with the essentials for living. Personnel of institutions, not living in dormitories or similar accommodations, should be treated in the same way."

28. Aside from the differences in wording, the chief points of disagreement between the two definitions are (a) the fact that boarders are included in the host household according to the definition for the agricultural census but constitute separate households for the population census and (b) the lack of recognition in the agricultural census definition that there will be some persons not living in households.

29. The latter discrepancy will have no practical consequences since, in cases of holdings operated by military or other institutions, the holder is a juridical person and no data are then collected in the agricultural census on the holder's household. The difference in the treatment of boarders, however, might still result in small differences between the two censuses in the composition of a holder's household, even when the two enumerations take place simultaneously.

#### IV. USE OF THE POPULATION CENSUS IN THE PREPARATION OF THE AGRICULTURAL CENSUS

30. A population census taken not too long in advance of an agricultural census may provide assistance in organizing the latter. The agricultural census can, for example, use the same enumeration districts as have been demarcated for the population census. This saves the cost of separate demarcation for the agricultural census and, at the same time, makes it possible to utilize information on the enumeration districts in the preparation of the agricultural census.

31. In countries where lists of agricultural holdings are not maintained, lists of households, by enumeration districts, may be used for establishing the list of holdings needed for the agricultural census. A household list prepared in connexion with a recently held population census can be used for this purpose, particularly if it includes relevant information on cultivation of land and keeping of livestock. Although, as explained below, the data on land and livestock may not be sufficiently accurate for analytical purposes, they are useful indicators of the existence of a holding. Errors in the data can be corrected in the subsequent agricultural census.

32. The population census thus can provide a frame for a complete agricultural census or for one based on a sample of holdings. In the latter case, data from the population census can be used also for preparing the sample design.

#### V. USE OF THE AGRICULTURAL CENSUS IN THE PREPARATION OF THE POPULATION CENSUS

33. An agricultural census cannot ordinarily provide assistance in organizing a subsequent population census.

34. Enumeration districts for a population census must cover the whole country or smaller geographic area to be enumerated and should be established on the basis of the number of persons estimated to be contained in a given area and the degree of concentration or dispersion of the population. The enumeration districts for an agricultural census may not cover the entire country or smaller geographic area, because urban areas may be excluded from coverage, and they may not be related to the density of human settlement. Hence, they are not useful for purposes of the population census.

35. In order for lists of agricultural holdings prepared in connexion with a recently held agricultural census to be of help in the preparation of a population census, they would have to contain an indication of the households which actually reside on each of the holdings. The use of lists which do not distinguish between holdings on which the holder actually resides and those with non-resident holders might be a hindrance to the population census because such lists might indicate a different geographic distribution of the population than in fact exists.

#### VI. INCLUSION OF AGRICULTURAL QUESTIONS IN THE POPULATION CENSUS

36. A number of countries have included questions on specific agricultural topics in their 1960 population censuses.<sup>7/</sup> The topics investigated included agricultural holdings in general, land under cultivation, land tenure, persons engaged in agricultural work, farm residence, possession of livestock and poultry (and quantity of products derived from them), and farm buildings.

37. Some of the information collected was intended for use in preparing the frame for an agricultural census, as described above. In other cases,

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<sup>7/</sup> In a few cases, the questions were included on the housing questionnaire of a combined population and housing census.

the questions were introduced in order to obtain complete information on certain items when the agricultural census was taken by sampling. The population census has also been used to collect agricultural information from units below the minimum size or production limit established for inclusion of units in the agricultural census or from units which did not meet other requirements for inclusion in the latter census. Use of the population census to collect complementary agricultural information which, because of costs involved or other reasons, is not obtained through the regular agricultural census has the advantages and disadvantages of simultaneous enumeration of a combined population and agricultural census.

38. For the establishment of agricultural policy and programmes, it is necessary to analyse employment in agriculture and persons connected with agriculture by characteristics of the agricultural holdings. The required information comes from the agricultural census data on "persons employed in agricultural work", "farm population" and characteristics of holdings. To some extent, the relationship could instead be established from the results of a population census if the census collects information on characteristics of agricultural holdings in addition to the usual information on "agricultural population". If this could be done, it might obviate the need to obtain information in the agricultural census on employment in agriculture and persons connected with agriculture.

39. This procedure, however, is beset with many pitfalls. The identification of agricultural holdings, for instance, is far from being a simple matter and the information reported about the holding is, naturally, affected by the manner in which this unit of enumeration is identified. Enumerators of the agricultural census are particularly trained in this subject. Such special training may not be feasible if an enumerator must also be trained in the collection of data for the population census. Agricultural data derived from a population census are, therefore, generally less accurate than those obtained in an agricultural census and it is preferable that they not be used as final data.

40. Moreover, even though the procedure would eliminate the duplicate collection of data on employment in agriculture and persons connected with agriculture in the two censuses, it would result in the duplicate collection of information on the main characteristics of holdings because the latter can never be omitted from the agricultural census.

#### VII. COLLECTION OF POPULATION INFORMATION IN THE AGRICULTURAL CENSUS

41. In addition to sex and age and the occupation of holders (see part III), a number of other topics within the province of population censuses have also been investigated in agricultural censuses. These topics include race, citizenship, educational attainment, etc.,<sup>8/</sup> of the "farm population" and/or "persons engaged in agricultural work". The information<sup>9/</sup> is usually intended to be related to information on characteristics of agricultural holdings but it may be useful in itself for comparison with the results for the total population or the "agricultural population" obtained in a population census. For this purpose, the definitions of the topics should be the same in both censuses.

#### VIII. CONCLUSIONS

42. It is not possible at this time to resolve the differences between the concepts of "farm population" and "population employed in agricultural work", as used in the agricultural census, and "agricultural population" and "economically active agricultural population" as used in the population census. Although the elimination of these differences would facilitate the comparison of some results of the two censuses, it would not in itself make possible the simultaneous use of the results. The concepts are different and have separate uses.

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<sup>8/</sup> Housing facilities have also been investigated.

<sup>9/</sup> The Program for the 1970 World Census of Agriculture does not, however, include any recommendations on these topics.

43. Simultaneous use is only possible if the two censuses have the same time-reference, i.e., if the enumerations take place simultaneously. With simultaneous enumeration, of course, the differences in concepts are not important because any group of the population can be identified as required for the purposes of either census. However, the drawbacks of simultaneous enumeration preclude the recommendation of the use of this procedure.

44. The consequence of this situation is the necessity it imposes for the collection in the agricultural census of information on characteristics of the population which is also collected in the population census. However, although countries investigate in their agricultural censuses a variety of information on population characteristics, the only three of these characteristics on which data are required for the tabulations recommended in the Program for the 1970 World Census of Agriculture are main occupation of the holder and sex and age of persons connected with agricultural holdings. The two latter topics should not present any difficulties of collection in agricultural censuses. The greatest advantage of relating the results of the two censuses, therefore, lies only in the possibility of eliminating the need for the duplicate collection of data on occupation of economically active persons. Although this is unfortunate, it is no more so than the need to collect duplicate information on this and other topics in population and housing censuses which are not taken simultaneously.

45. The difference among the concepts mentioned above do not affect the most important present relationship between the two censuses, which is the use of the population census enumeration districts and household lists in the organization of a subsequent agricultural census. Information from the population census on the cultivation of land and the keeping of livestock by households, while usually not sufficiently accurate for analytical purposes, is of use in the preparation of the frame and possible sample design for a subsequent agricultural census. Countries may, therefore, find it useful to include this information in a population census if it is to be followed by an agricultural census after a short time interval.