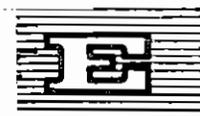


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STATISTICS OF THE DEVELOPING COUNTRIES IN THE  
SECOND UNITED NATIONS DEVELOPMENT DECADE

African Census Programme

Report by the Secretary-General

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INTRODUCTION

1. Population and housing censuses have long been recognized as forming one critical element of a co-ordinated programme of national statistical activities. These censuses, by providing data for the nation and for each of its subdivisions on a generally comparable basis, assist the policy maker and the administrator in making rational decisions about matters of urgent national concern. Moreover, if such censuses are conducted at periodic intervals, their results permit changes in the distribution and characteristics of the population to be readily identified and progress in achieving a variety of national goals to be assessed in a uniform manner.
2. The Statistical Commission has long recognized the important role that population and housing censuses play in building a national statistical infrastructure and knowledge base. Pursuant to a recommendation at the Commission's thirteenth session<sup>1/</sup>, the Economic and Social Council on 16 July 1965 adopted resolution 1054 B (XXXIX) which requested the Secretary-General "to proceed with the development of 1970 World Population and Housing Census Programmes". At its fourteenth session, the Commission "stressed the need for increased and continuing assistance to countries, under the 1970 World Population and Housing Census Programmes"<sup>2/</sup> and, on its recommendation, the Council on 1 June 1967 adopted resolution 1215 (XLII) which requested the Secretary-General "to give assistance to Governments in the implementation of these population and housing census/principles and recommendations by mobilizing all available resources to help in the very large task of meeting the needs of countries in this area...."
3. Subsequently it became apparent that, although in most regions participation in the 1970 World Programmes would be widespread, many African countries might again be unable to carry out population and housing censuses. For these countries, the problems of organizing population and housing censuses were numerous and substantial. Most had never conducted a full-scale census previously and, hence, had little national experience to draw on. The resources needed to carry out a census--administrative, financial, and technical--were lacking or were required for other urgent development tasks. The African Census Programme originated as a concerted response to these long-standing and hitherto unyielding difficulties.
4. This report describes the principal features of this Programme, reviews some of the lessons learned and, in large part drawing on these lessons, presents some recommendations for action that the Commission may wish to consider with respect to both the African Census Programme and the initiation of a 1980 World Population and

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<sup>1/</sup> Official Records of the Economic and Social Council, Thirty-Ninth Session Supplement No. 13 (E/4045), para. 149.

<sup>2/</sup> Ibid., Forty-second Session, Supplement No. 3 (E/4283), para. 85.

Housing Census Programme.

## I. ACTION BY THE COMMISSION

5. In light of the material presented in this document, the Statistical Commission may wish to:

(a) endorse the continuing activities of the Statistical Office of the United Nations and of the Statistics Division of the Economic Commission for Africa (ECA) in support of the African Census Programme,

(b) stress the need for continuing support of the African Census Programme by the Secretary-General and by Governments so as to bring the programme to a successful and expeditious conclusion,

(c) conclude that careful planning is essential if large statistical undertakings, such as population and housing censuses, are to produce results of the desired scope and quality as economically as possible, and

(d) endorse the usefulness of a 1980 World Population and Housing Census Programme to be carried out during the period 1975-1984 and request the Secretary-General to make all necessary preparations with a view to encouraging and assisting Member States to plan and carry out improved censuses in the 1980 census decade including: (i) the preparation, in close collaboration with the work of the several regional commissions, of draft recommendations for the 1980 population and housing censuses for consideration by the Commission at its 20th (1978) session, (ii) the completion of the Handbook of Population and Housing Census Methods<sup>3/</sup> and the preparation of additional methodological publications of use to national statistical agencies, giving particular attention to the organization, timing, staffing and costs of various census operations and the evaluation of census results, (iii) the convening of meetings of experts, working groups and seminars, (iv) the organization of training programmes and workshops in various aspects of census methodology and (v) the provision of fellowships and other forms of technical assistance.

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<sup>3/</sup> The following parts have already been issued: part III, Topics and tabulations for housing censuses (United Nations publication, Sales No. E.70.XVII.6); part IV, Survey of population and housing census experience, 1955-1964, ~~United Nations publication, Sales No. E.70.XVII.7~~<sup>Section I</sup>; part VI, Sampling in connexion with population and housing censuses (United Nations publication, Sales No. E.70.XVII.9).

## II. ORIGIN AND SCOPE OF THE AFRICAN CENSUS PROGRAMME

### A. Origin and objectives

6. The African Census Programme was undertaken in accordance with recommendations made at the Second Meeting of the ECA Technical Committee of Experts and approved by the First Conference of Ministers in February 1971. Subsequently the Programme was endorsed by the Conference of African Statisticians and the Conference of African Demographers (Accra, October and December 1971, respectively). It was also discussed at the sixteenth session of the Population Commission (Geneva, November 1971)<sup>4/</sup>.

7. The primary objective of the Programme is to assist those countries which have not had a recent census of population and which would not be able to participate in the current round of censuses without external assistance. It is designed to provide information not only on the present structure of the population - age, sex, urban/rural residence, etc. - but also on the elements of population change - fertility, mortality and migration.

8. A secondary objective of the Programme is to provide a cadre of experienced technicians in each country who will be able to plan and conduct future censuses and surveys and compile the basic statistical data required for national and regional development programmes.

### B. Scope of the programme

9. Twenty-two countries are presently participating in the African Census Programme, including 15 which have never carried out a complete population census before - (see annex I.) The combined population of the 22 countries is estimated at 167 million inhabitants, or approximately 45 per cent of the total population of Africa. Several other countries, not now included in the Programme, are expected to undertake census activities at a later date.

10. The total cost of the 22 censuses scheduled for the first half of the decade is estimated at US\$41 million, or approximately US\$0.25 per person. The UNFPA contribution is estimated at US\$16 million, or about 39 per cent of the total.

## III. ORGANIZATION

### A. Headquarters component

11. The African Census Programme is supported by the United Nations Fund for

<sup>4/</sup> Official Records of the Economic and Social Council, Fifty-second Session, Supplement No. 3, para. 48.

Population Activities, with the United Nations Secretariat serving as executing agency. Within the Secretariat, primary responsibility is shared by the Office of Technical Co-operation, the Statistical Office and the Population Division. The Office of Technical Co-operation is responsible for general administration including the disbursement of funds, the procurement of major items of equipment, and (in co-operation with the Technical Assistance Recruitment Service) the recruitment and assignment of staff. The Statistical Office and the Population Division share responsibility for monitoring programme content, methodology employed and the analysis and evaluation of results. To facilitate co-ordination among all Headquarters activities relating to the Programme, a Steering Committee for the African Census Programme was established in early 1974.

#### B. Regional component

12. At the regional level, the programme is under the general supervision of a Project Officer, who in addition to directing the work of the regional component, is responsible for maintaining close liaison within ECA and with Headquarters. The authorized regional staff includes three demographic statistics advisers, two demographers, one census cartography adviser, one sampling adviser, and one data processing adviser. These experts are available for assignment on a short-term basis (usually, one to four weeks) to any country in the region. Their job is to assist with the development of census plans and the formulation of individual country projects; to advise on organizational, administrative and technical aspects of the census programme; to evaluate progress in relation to established time schedules; and to assist with the analysis, interpretation and utilization of census data.

#### C. Country component

13. At the country level, one or more census experts has been provided to assist with the initial planning, questionnaire design, preparation of instructions and procedures, table design, training of field and central office staff and other activities related to the census programme. Being specially oriented to the principles and recommendations adopted for the African Census Programme, the experts are in a position to direct the attention of country officials to international standards whenever questions arise.

14. At present, 26 census experts are in post in 17 countries. These include 15 general census experts, 4 cartographers, 2 sampling experts, 4 data processing experts and 1 demographer.

#### D. Consultative group

15. Early in 1971, the Economic Commission for Africa, in co-operation with the

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United Nations Fund for Population Activities and the United Nations Secretariat, established a Consultative Group on the African Census Programme with the purpose of formulating a comprehensive programme of assistance to Member States for the collection of population data and their analysis in relation to economic and social development. The Group consists of representatives of individual countries and international organizations interested in the development of demographic data systems within the region. The first meeting of the Group was held in Addis Ababa in January 1971 and was attended by representatives of the United Nations Secretariat, by representatives of the Governments of Canada, the Federal Republic of Germany and the United States of America, and by a representative of the German Foundation for Developing Countries. At subsequent meetings, held in February 1972 and May 1973, representatives from France, the United Kingdom, the Canadian International Development Agency (CIDA), and the Swedish International Development Authority (SIDA) also participated. For future meetings of the Group, it is proposed to invite representatives from a limited number of ECA Member States.

16. When the Consultative Group met for the first time, a basic programme for the collection, tabulation and analysis of population data was proposed, and a list of minimum and additional recommended items for inclusion in national censuses of population was adopted. (The list is reproduced in annex II.) It was the consensus of the Group that a complete enumeration would be necessary to obtain reliable data on the total population by sex and geographic divisions, and that other items of information could be obtained by sampling. At subsequent meetings, the Group discussed the need for census experts and the problems involved in their recruitment, the urgent need for training technical and administrative personnel in the various countries, and other important aspects of the census programme.

#### IV. GENERAL PLAN OF OPERATIONS

##### A. Complete count of population supplemented by sample surveys

17. The general plan adopted by most countries participating in the African Census Programme includes a complete count of the population, household by household, with minimal subject coverage, plus a sample survey for the collection of detailed population characteristics. In some countries, the sample survey will be conducted simultaneously with the complete count operation, simply by using an expanded questionnaire for selected enumeration areas, while in other countries the sample survey will be carried out after the complete census count.

##### B. Minimum and additional recommended items

18. Most countries plan to include in their complete count questions on name, place where found at the time of enumeration, place of birth, sex and age

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(items 1-5 of the minimum list). Questions on fertility and mortality (items 6-9) will be asked on a complete-count basis in some of the countries, but on a sample basis in others. However, in either case, it is expected that national totals will be available for these items. Detailed characteristics of the population, including data on economic activity, occupation, education, marital status, relationship to the head of the household, ethnic group or citizenship, school attendance, migration and religion, will generally be obtained on a sample basis.

19. In addition to enumerating their population, several countries are obtaining information on housing. Mauritius had a full-scale housing census in March 1972, just preceding its census of population. The Libyan Arab Republic carried out a complete enumeration of structures and housing units, business establishments and agricultural holdings along with its census of population in July 1973. Several other countries have included a number of housing items on their census questionnaires.

#### C. Recommended tabulations

20. Annex III contains a list of the proposed standard tabulations based on the minimum and additional recommended items for inclusion in the African Census Programme. The tables to be prepared for any given country will, of course, depend upon the items included in the census questionnaire. However, it is expected that the first 14 tables (based on the minimum list of items) will be standard for all countries, and that tables 15-40 (based on the additional first- and second-priority items) will be prepared in standard format wherever information is available. The recommended format for most of these tables is given in "African recommendations for the 1970 population censuses" (E/CN.14/CAS.6/1), which has been distributed, along with other basic reference documents, to all ECA countries.

#### D. Technical and financial assistance available

21. Technical and financial assistance for the planning and conduct of population censuses and sample surveys is available to ECA member countries through the United Nations Fund for Population Activities. Requests for assistance are normally sent to the Fund through the Resident Representative of the United Nations Development Programme (UNDP) in the country. The assistance may include one or more census experts; special equipment required for the census programme, e.g. cartographic equipment, transport, and data processing equipment; and a share of local costs, including salary supplements. The amount and kind of assistance provided depend on the special circumstances in each country.

E. Co-ordination with other related programmes

22. Appropriate measures have been taken to co-ordinate the African Census Programme with other related activities in the region, particularly with the FAO-sponsored censuses and surveys of agriculture, and with the World Fertility Survey, conducted by the International Statistical Institute.

23. With regard to the agriculture census programme, ECA has already exchanged information with FAO on census dates and experts assigned to countries in the region. This information has been given to all of the population census experts and they have been requested to take into consideration any plans the country may have for a census or sample survey of agriculture.

24. Several meetings have been held during the past year with representatives of the World Fertility Survey, with a view to co-ordinating data collection activities in the field. It has generally been agreed that the censuses of population which are scheduled in the region during 1974 and 1975 should take priority over other data collection activities.

25. A United Nations-sponsored programme of integrated demographic and social statistics has been proposed as a follow-up to the African Census Programme. The new programme would be somewhat broader in scope than the population census programme and would ensure the continuous production of interrelated demographic, social and economic data throughout the region. The planning of this programme is being carefully co-ordinated with the African Census Programme, particularly with regard to timing, content and methodology.

V. PRESENT STATUS

A. Censuses planned or taken

26. As annex I indicates, of the 22 countries participating in the Programme, seven have already completed the general enumeration, three more are projected to begin general enumeration in 1974 and 10 are projected to begin general enumeration in 1975 or possibly 1976. Census activities have been temporarily suspended in two participating countries. Preliminary census results have already been released for three countries (Gambia, the Libyan Arab Republic and Nigeria) and similar data should be available soon for several other countries.

27. It is apparent that the next 12-18 months are critical for the success of the African Census Programme. To date, progress on this large and complex Programme has been marked by both noteworthy accomplishments and numerous delays. Nevertheless, if the present momentum can be maintained it is likely that, by mid-1976, either preliminary or final data should be available for most of the

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22 countries participating in the Programme.

#### B. Recruitment of experts

28. A cumulative total of 46 country experts have been requested to date by the participating 22 countries. So far, 31 of these posts have been filled. As indicated above, 26 of these experts are now in post, while five others have either completed their assignment or are expected to report for duty over the next few months. Of the 15 remaining posts, five require no active recruitment efforts, either because recruitment activities have been suspended at the request of the country or because the post is not needed for at least another year. Active recruitment is continuing for 10 posts and, in six cases, candidates' names have been submitted for consideration by the Governments concerned. A list of posts and the status of recruitment, by country is presented in annex IV. Members of the Commission are invited to suggest candidates for any posts which are presently vacant, or which may become vacant during the next year.

#### C. Missions undertaken by regional advisers

29. During the past two and one half years, the regional advisers of the African Census Programme, assisted by staff members of the Population Programme Centre and the Statistics Division of ECA, have carried out 71 missions to 24 countries (Cameroon, Central African Republic, Chad, Congo, Dahomey, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ivory Coast, Kenya, Liberia, Libyan Arab Republic, Madagascar, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo and Upper Volta). In addition, a number of missions were undertaken to the secretariat of the Liptako-Gourma Development Authority in Ouagadougou (Upper Volta) to advise on statistical requirements for development planning at the subregional level.

30. Many of the missions carried out in 1972 and 1973 were undertaken for the purpose of assisting country officials in the development of census plans and the formulation of project requests. Most of the missions currently being undertaken by the regional advisers have been requested to provide assistance on specific problems of organization and administration, census mapping operations, sampling applications, data processing, tabulation and analysis.

#### D. Work programme for 1975-1976

31. For the next two years, the work programme for the African Census Programme will cover a great variety of activities. Many countries will still be involved in data collection operations; another group will have completed the field enumeration and will be concerned with the processing of their data; others will have reached the stage of publication and analysis. The activities of the

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regional advisers will, of course, reflect the actual state of development of the individual country programmes.

32. In addition to the 22 countries participating in the African Census Programme, a number of other African countries have indicated their intention to take censuses of population in 1976 and 1977. Requests for assistance, including the services of one or more census experts, have already been submitted to the United Nations Fund for Population Activities by several of these. Although most of them have already had one or more general censuses, they have requested assistance to improve the quality of the data collected and to benefit from recent technological advances in data processing and analysis. These requests point to the need to initiate co-ordinated activities for a 1980 World Population and Housing Census Programme.

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## VI. TRAINING PROGRAMME

### A. Training courses in support of the African Census Programme

33. An important objective of the African Census Programme is the training of technical and administrative personnel in the region not only to carry out the present census, but to undertake any future censuses and surveys required. To accomplish this objective, a number of workshops and training courses have been conducted and, in addition, special emphasis has been placed on in-service training by country experts and regional advisers assigned to the African Census Programme. To date, approximately 125 technicians from 37 countries have participated in the workshops and training courses offered in support of the African Census Programme but available to all ECA member States.

34. The following workshops have been conducted during the past two years:

Population Inquiries (for French-speaking participants), Rabat, Morocco, October-November 1972

Pre-tabulation Processing of Census Data (for English-speaking participants), Addis Ababa, Ethiopia, November 1972

Computer Processing of Census Data with special emphasis on the CENTS system (separate sections in French and English), Yaoundé, Cameroon, May-June 1973

Computer Processing of Census Data with emphasis on the COCENTS system (separate sections in French and English), Addis Ababa, March-April 1974

35. Additional training courses planned for 1975 and 1976 include the following:

Tabulation, Presentation and Publication of Census Data, Addis Ababa, February 1975

Analysis and Interpretation of Population Census Data, Addis Ababa, October-November 1975

Utilization of Census Data for Development Planning, Addis Ababa, 1976

### B. Study tours

36. An effective method of training for the planning and conduct of census programmes is the arrangement of study tours which permit census administrative and technical staff from one country to observe the various activities connected with the census in another country. The observation at close range of training sessions, field enumeration procedures, quality control operations and general office organization can be a very valuable experience for someone who has had little or no previous census experience. Several countries have already benefited from participation in study tours within the region.

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37. Occasionally, government officials are reluctant to accept observers at a time when their staff is fully occupied with their own census activities. However, if a regional adviser can accompany the observers, this should minimize the burden on the host government with respect to administrative arrangements.

#### C. In-service training

38. In order to provide practical training and experience on sampling aspects of the census programme, it has been proposed that a limited number of young statisticians be provided with fellowships to work directly with the regional sampling adviser in Addis Ababa for periods of about six months each. The individuals would be scheduled one at a time and would assist the regional adviser in the development of sampling plans, research on sampling problems within the region and other related activities. For practical field experience, they would accompany the regional adviser on any missions undertaken during the period of their training.

39. This proposal appears to have considerable merit, and it is hoped that arrangements can be made soon for the first participant to begin training. If this technique proves feasible, it may also be applied to fields such as census cartography, data processing and demographic analysis.

#### D. Regional institutes

40. Two regional institutes have recently been established to provide training for African students in demography and demographic statistics. One of these institutes is located in Accra, Ghana, and provides instruction in English; the other is located in Yaoundé, Cameroon, and serves primarily the francophone countries. While the curricula of both institutes include some practical field work in data collection, the primary emphasis is on demographic analysis and research. A third demographic training institute, located in Cairo, Egypt, has existed for some time. In addition, training in statistical methods, including demographic statistics and field work, is provided at three other regional institutes: one in Kampala, Uganda, one in Rabat, Morocco, and one in Yaoundé.

### VII. METHODOLOGY EMPLOYED

#### A. Complete count supplemented by sample inquiries

41. One of the primary objectives of the African Census Programme is to obtain a complete count of the population, household by household, with at least minimum subject coverage. (See minimum list of items, annex II.) In most countries, sampling will be used to obtain supplemental information on a variety of topics, depending upon the special interests and requirements of the individual country. A list of items to be covered on a complete count or sample basis, by country, is shown in annex V. It should be noted that much of the information presented in annex V is based on preliminary planning documents and is subject to revision.

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B. Other uses of sampling

42. Sampling techniques will also be used in many countries for quality control in the data collection and data processing operations, as a means of providing advance tabulations of selected characteristics of the enumerated population, and in post-enumeration evaluation studies of the accuracy and reliability of the census results. The planned uses of sampling in the various countries is indicated in annex VI.

C. De facto and de jure counts

43. Of the 16 countries for which information is available, all plan to enumerate their population on a de facto basis. However, in about half of these countries, supplemental questions on residence status will be included, which theoretically, at least, will make it possible to obtain both the de facto and the de jure population of any given area.

D. Group enumeration

44. In one country, Ethiopia, it was originally planned to use group enumeration in the rural areas. Because of the difficult terrain, the lack of roads, and the dispersion of population in small settlements throughout the country, it was proposed to have each subdivision official (there are approximately 35 000 subdivisions in rural Ethiopia) assemble on a given day all of the household heads under his jurisdiction. The enumeration would then be carried out by personal interview with each household head, but without actually visiting the place of residence. Such a procedure was used in the past in some other countries of the region. In Ethiopia, the census plan called for the group enumeration to be followed by a house-to-house canvass of the population in about 5 per cent of the subdivisions. Based on the results of a pilot census covering 38 rural subdivisions as well as selected urban areas, the original census plan, budget and calendar are now under intensive review.

E. Use of maps and village lists

45. In nearly all countries, special attention has been given to the preparation of enumeration maps and village lists to ensure maximum coverage of the population. These maps and village lists serve not only to guide the enumerators and supervisors in the data collection operations but also to provide a basis for allocating the resulting data to their respective localities and to the appropriate urban-rural classification. In most countries, a geographic code scheme has been developed which links each enumeration area with an urban place, a village or the rural balance of a province. The geographic code scheme is designed in such a manner as to facilitate the aggregation of data for the various administrative divisions of the country.

#### F. Field organization

46. The field organization adopted for the data collection operation varies according to the administrative organization of each country, the use of sampling, the length of the enumeration period, the participating of school teachers and other factors.

47. In general, each enumerator can be expected to enumerate 300-600 persons in a week depending on whether the area is urban or rural and whether he is using a long-form or short-form questionnaire. In many countries, school teachers and administrative officials constitute the main source of recruitment for the field organization. Supervisors are generally provided on the basis of one supervisor for every 5 to 10 enumerators.

#### G. Selection of enumeration period

48. Weather is one of the most important factors in the selection of the enumeration period. In many countries, field operations are virtually impossible during the rainy season and consequently the choice of an enumeration date is limited to periods of generally good weather throughout the country. Another factor influencing the choice of the census enumeration period is the availability of teachers and other government workers who may be needed as enumerators and supervisors. These factors are in addition to such basic considerations as availability of funds, transport and equipment.

49. Although conditions vary within the region, many countries have found the months November, December, January and February the most favourable time for field work. (See annex I for a list of census dates.)

#### H. Types of questionnaires used

50. Most countries participating in the African Census Programme are using household-type questionnaires. Frequently there are separate questionnaires for urban areas, rural areas and nomadic groups. The urban area questionnaires generally contain more detailed inquiries than those for either the rural areas or nomadic groups. Annex V contains a list of items investigated or planned for investigation, by country, with an indication also of the coverage for each item.

#### I. Data processing

51. All of the 22 countries participating in the African Census Programme, except Gambia, either have or plan to have their own computers for processing their census data. Several countries - Mali, Niger and Upper Volta - have adopted a standard plan for data collection and processing. Other countries will probably adopt similar plans modified in each case to fit local conditions. To the extent possible, standardization of procedures will be encouraged by the regional advisers assisting the countries. This will include a standardized approach to the editing of the data prior to entry into the computer.

#### J. Basic definitions

52. While it has not been possible to adopt completely standard definitions for basic items, such as household, nomad, urban area, etc., the attention of participating countries has been directed to the definitions and specifications given in Principles and Recommendations for the 1970 Population Censuses. 5/

53. The definitions of household adopted by the countries appear to follow very closely the concept of household recommended by the United Nations. 6/ In many African countries, the concept of household is closely related to the concept of "extended family", sometimes consisting of several potentially separate households occupying separate living quarters but with a common head.

54. Most countries with a nomadic population distinguish three categories of population: sedentary, transhumant (or semi-nomadic) and nomadic. Definitions vary according to conditions in the particular country, but essentially the sedentary population consists of persons with a fixed place of residence which they normally occupy on a year-round basis; the transhumants or semi-nomadic people move with their livestock during certain seasons but have a fixed place of residence which they occupy during the rest of the year; while the nomads have no fixed residence.

55. With regard to the urban/rural classification, there appear to be no generally accepted definitions of urban and rural. A few countries have based their definition of urban on size of place (e.g. 5,000 or more inhabitants); others have defined as urban the central place in each administrative division or subdivision (e.g. provincial capital, prefectural centre); still others have adopted a definition of urban which is based on a combination of the above criteria. However, many of the countries participating in the African Census Programme have deferred any decision regarding their urban/rural classification until they have completed their **cartographic** and other preparatory work.

#### K. Pretesting of questionnaires, instructions and procedures

56. Included in the over-all census plan for most countries is at least one experimental census or pretest of the questionnaires, instructions and procedures planned for the national census. Several countries have conducted a series of experimental censuses designed to test the questionnaire content, the wording of questions on specific topics, the adequacy of field enumeration instructions, the effectiveness of the field organization, code schemes, tabulation procedures and so on. As a result of these pretests, questionnaires and procedures have often been substantially revised.

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5/ United Nations publication, Sales No. E.67.XVII.3.

6/ Ibid., para. 146.

57. The optimum utility of a pretest census is only realized when the exercise is conducted under conditions approximating the general census and carried through the stages of manual processing, tabulation, and analysis.

#### L. Training programmes and training materials

58. Most countries are organizing special programmes for the training of enumerators, supervisors and administrative personnel responsible for the data collection operations. A number of countries have also planned special training programmes for their central office staff on the editing, coding and tabulation of the resulting data.

59. In at least one country, tapes were used to record a sample of interviews during the census pretest. The information entered on the questionnaires was then compared with the actual exchange of questions and answers by the interviewer and respondent, and appropriate changes were made in the working of some questions. The use of recorded interviews for the training of the field enumeration staff is under consideration in several other countries throughout the region.

60. In addition, most countries are preparing instruction manuals for both enumerators and supervisors, model interviews and illustrative questionnaires for use in training programmes.

#### M. Publicity and propaganda

61. At least one country plans to prepare a short film on the census to be shown throughout the country before the enumeration date. Nearly all of the countries are using posters, radio announcements, newspaper and magazine articles, public meetings and special programmes in the schools to publicize their census activities. The United Nations Fund for Population Activities has engaged several communications experts to advise individual countries on the planning and conduct of publicity programmes specially designed to enlist public co-operation in the census effort.

#### N. Quality control and evaluation

62. Although, quite properly most efforts nationally and internationally have concentrated on the basic task of enabling participating countries to carry out sound censuses, the importance of evaluating census results and procedures has also been recognized. The need for evaluation in the context of the African Census Programme was stressed at the eighth session of the Conference of African Statisticians, November 1973 (E/CN.14/611, para. 223 g). The census plans for three countries (Ethiopia, Liberia and Nigeria) call for reenumerating a sample of the population for purposes of evaluation (see annex VI). In addition, an expert in census evaluation methods plans to visit five participating countries in July and August 1974, along with the regional adviser in sampling, to discuss with national census authorities plans for carrying out census evaluation studies.

## VIII. EXPERIENCE OF USE TO FUTURE CENSUS AND SURVEY PROGRAMMES

63. Although it is rather early to gauge performance on the African Census Programme, since only seven of the 22 participating countries have actually taken their censuses, it may be appropriate to review developments to date in order to see how the present experience may be applied to future census and survey programmes, especially the 1980 programme of population and housing censuses.

64. In many respects, the African Census Programme is unique in the history of statistical development and technical assistance. Never before has such a far-reaching programme of data collection, tabulation and analysis been attempted in so many countries -- each with its own census organization and census calendar. Considering the fact that 15 of the 22 participating countries are conducting their first census of population, it is not surprising that problems and delays have been encountered in the implementation of the programme. As indicated in paragraph 3 above, the need for an African Census Programme arose precisely because long-standing difficulties deterred many countries in the region from attempting to conduct a population and housing census in the first place.

65. Perhaps the major flaw in planning for the African Census Programme was an underestimation of the volume and the complexity of the task. This problem affected the United Nations programme of technical and financial assistance as well as the census programmes in many of the individual participating countries. In both cases, many new procedures -- administrative and technical -- had to be developed in the absence of relevant experience.

66. With respect to the United Nations component, major administrative challenges were faced in (a) developing a mechanism for assisting countries in the direct costs of field enumeration, (b) recruiting and placing the very large number of census experts required by the programme, (c) purchasing and delivering needed equipment, especially vehicles, and (d) preparing annual budgets for the country projects of the required specificity. By now, the first two problems have been substantially solved.

67. In order to deal with the latter two problems the following steps have been taken:

(a) A small Steering Committee has been set up, chaired by a representative of the Office of Technical Co-operation. This committee composed of representatives of organizational units involved, meets once every two weeks in order to identify problems as they arise, and reduce the time involved in solving them. Close communication continues to be maintained with the Project Officer in Addis Ababa. As required, Headquarters missions are sent to provide technical and administrative assistance to countries, over and above that made available by the regional advisers

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through the Project Officer in Addis Ababa.

(b) In the early stages of the African Census Programme, it was necessary to receive approval of funds before vehicles could be ordered, experts recruited or fellowships granted. Each of these steps, including the pre-condition of approval of funds, was a time-consuming operation. To expedite matters, a revolving fund was first established from which experts could be hired as available, prior to the approval of the country budget. A block allocation was then initiated exclusively for the granting of fellowships, eliminating the need to wait for approval of funds. A similar block allocation was then established for vehicles, which is soon to be converted to a more flexible revolving fund arrangement. These special funding arrangements have expedited the logistics of the programme considerably.

(c) Census experts were recruited primarily for their technical expertise and their previous technical operational experience. Very few had managed to gain equivalent competence in the very necessary administrative areas of budgeting, the purchase of equipment and the like, particularly within the framework of UNFPA policy and procedures. Although there was a concerted effort to "train" census experts in these administrative matters during their short briefing, the usual Government desire to have the experts in post as soon as possible and, in part, the sheer magnitude of the Programme, resulted in diluting this operation. Also, even where the census expert had the proper administrative experience, the workload of the technical aspects of the Programme frequently did not allow sufficient time for the administrative operations. Accordingly, an administrative assistant, with expertise in the preparation of budgets and other administrative matters, is being provided to the census experts where required. In some instances, the Office of the Resident Representative of UNDP can provide such assistance without additional staff.

68. These measures appear to have eased the two remaining administrative problems enumerated in para. 66, but continued alertness is required if new problems are to be avoided. Moreover, it should be noted that there are certain factors which are beyond the purview of the United Nations, namely, those emanating from the countries. In some cases the governments concerned have delayed, for example, the installation of necessary facilities, or the supply of rudimentary means of work; or have not initiated indispensable contacts between the various agencies involved in the census operation; or have delayed the promulgation of census legislation or regulations; or have **suspended** census operations after a substantial amount of work has been initiated. Other major factors beyond control are the energy crisis and the high rates of inflation, with not only attendant increases in costs but with the consequent difficulties in obtaining vehicles, paper and other goods needed for census work. However, it must be stressed that these untoward developments will not be permitted to serve as excuses for actions that

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are within the control of the United Nations.

69. The following observations relating to technical aspects of data collection and data processing may also be useful in considering plans for future census and survey programmes in Africa.

(a) The programme should be suited to both the technical and administrative capabilities of the country, so that there may be a reasonable expectation of success. External assistance may be used to supplement a country's own resources, but ultimate responsibility for the execution of the census or survey must rest with the officials of the country. Therefore, it is important that the programme not be overly ambitious or unduly complicated.

(b) Definitions should be simple, applicable to country conditions, and readily understood in the language(s) or dialect(s) used for the enumeration. International comparability, while clearly desirable in the context of long-term national interests, should not influence a country to use definitions which are either misleading or otherwise unsuitable in the national circumstances.

(c) Plans for the field enumeration must take full account of migratory movements both within and between countries. Various techniques for the enumeration of nomadic groups are being tested in connexion with the censuses of Chad, Ethiopia, Mali, Mauritania, Niger, Somalia and the Sudan. The experience of these countries in dealing with nomads and semi-nomads, including migrant labour, should be carefully analysed.

(d) To the extent possible, enumerators and supervisors should be familiar with their respective areas of assignment, including geographic features, language and social customs. An enumerator who knows the area is much more likely to obtain reliable information than one who is not familiar with it.

(e) Special efforts must be made to develop and strengthen the infrastructure of the statistical organizations in the various countries, giving special attention to cartography, the use of sampling, pre-listing and post-enumeration survey checks and the training of central office and field enumeration staff, as well as the logistics and costs involved in data collection and data processing.

(f) Some arrangements should be made for the periodic updating of maps prepared for the census in order that the substantial investment in the cartographic work yield maximum benefits.

(g) The use of sampling for the quality control in the data collection and data processing operations and for obtaining supplemental information, as well as advance tabulations of the collected data, should be encouraged. Various sampling

plans are being tried in the countries and the collective experience should be carefully analysed.

(h) Greater use should probably be made of prelisting and post-enumeration survey checks to measure and control the accuracy of census results. At a later date, the experience of the various countries participating in the African Census Programme needs to be analysed with a view to formulating specific recommendations for future census and survey programmes.

(i) Once the enumeration activities have been completed, it is important that the momentum generated on the African Census Programme be maintained for the future development of census and statistical programmes in Africa. This can best be accomplished by a follow-up programme of analysis and utilization of the data available from the census and by a co-ordinated programme of establishing continued household sample survey capabilities designed to update and supplement, within the context of a longer-term plan, the information gathered in the census and related economic and social statistics. Programmes along these lines are already under consideration and should be given high priority during the next few years.

70. A number of the administrative and technical issues dealt with in the African Census Programme are unique to this effort. However, many others are of wider applicability. These lead to some general points about the nature of future United Nations population and housing census programmes. They include:

(a) the need for early and thorough planning of national and international census programmes and, related to this, a need for information concerning national experiences with respect to the organization, timing, staffing, costs of various census operations and the quality of census results,

(b) the value of fully utilizing the knowledge and experience within the several regions early in the process of developing a set of international recommendations for the 1980 Population and Housing Census Programme,

(c) the importance of establishing close and continuing links between the appropriate administrative and substantive units that are essential to the success of a census programme,

(d) the need for expanded efforts in training census personnel as well as in recruiting and placing census experts, and

(e) the value of phasing operations over a period of years in any large technical assistance programme in the statistical field.

ANNEX I. ACTUAL OR PROJECTED DATES OF GENERAL ENUMERATION

	<u>Country</u>	<u>Actual date of enumeration</u>	<u>Projected date of enumeration a/</u>
1.	Burundi <sup>b/</sup>		<u>c/</u>
2.	Cameroon <sup>b/</sup>		December 1974
3.	Central African Republic <sup>b/</sup>		December 1974
4.	Chad <sup>b/</sup>		December 1975
5.	Congo <sup>b/</sup>	February 1974	
6.	Dahomey <sup>b/</sup>		March 1975
7.	Ethiopia <sup>b/</sup>		March 1975 <sup>d/</sup>
8.	Gambia	April 1973	
9.	Ivory Coast <sup>b/</sup>		February 1975
10.	Liberia	February 1974	
11.	Libyan Arab Republic	July 1973	
12.	Madagascar <sup>b/</sup>		<u>c/</u>
13.	Mali <sup>b/</sup>		April 1975
14.	Mauritania <sup>b/</sup>		January 1975
15.	Mauritius	June 1972	
16.	Niger <sup>b/</sup>		April 1975
17.	Nigeria	November 1973	
18.	Senegal <sup>b/</sup>		April 1975
19.	Sierra Leone		December 1974
20.	Somalia <sup>b/</sup>		January 1975
21.	Sudan	April 1973	
22.	Upper Volta <sup>b/</sup>		April 1975

- a/ As of 15 May 1974.
- b/ No previous full-scale population census involving general enumeration.
- c/ Programme activities temporarily suspended.
- d/ The census plan and calendar of operations is now under intensive review, and consequence of this review may be a postponement of the scheduled enumeration date to January 1976.

ANNEX II

MINIMUM LIST OF ITEMS AND ADDITIONAL RECOMMENDED ITEMS

I. Minimum list of items recommended

1. Name
2. Place where found at the time of enumeration
3. Place of birth
4. Sex
5. Age
6. Children born alive
7. Children living
8. Live births in past 12 months (by sex)
9. Deaths in past 12 months (by sex and age).

II. Additional list of items recommended

(i) First priority

1. Type of (economic) activity
2. Occupation
3. Educational attainment
4. Marital status

(ii) Second priority

1. Relationship to head of household
2. Ethnic group (or citizenship)
3. Literacy
4. School attendance
5. Industry
6. Status (employer, employee etc.)
7. Usual place of residence
8. Duration of residence
9. Previous place of residence
10. Religion
11. Number of wives
12. Number of years since first marriage
13. Children below school age
14. Worked any time in the past 12 months

ANNEX III

**RECOMMENDED TABULATIONS BASED ON THE MINIMUM AND ADDITIONAL  
RECOMMENDED ITEMS**

(Depending on the needs of individual countries, it is recommended that the following tables be prepared for the total population, urban and rural, and for any administrative or planning divisions which would be meaningful for the countries. Table numbers in parentheses after the table title refer to table numbers in the African Recommendations for the 1970 Population Censuses, (E/CN.14/CAS.6/1)

Tabulations based on the Minimum List of Recommended Items:

1. Total population and population of major and minor civil divisions, by sex. (Table 1)
2. Population in localities by size-class of locality and sex (Table 2)
3. Population of principal localities and their urban agglomerations by sex. (Table 3)
4. Number of households by size of household.
5. Population by single years of age and sex. (Table 5)
6. Population by 5-year age groups and sex (Table 6)
7. Population by place of birth, age, and sex. (Table 8)
8. Female population aged 15 years of age and over, by age and number of children born alive. (Table 20)
9. Female population 15 years of age and over by age and number of children now living. (Table 21)
10. Female population 15 years of age and over by age and number of children born alive but no longer living.
11. Female population 15 years of age and over by age and number of live births in last 12 months. (Table 28)
12. Female population 15 years of age and over by age and number of children born alive in last 12 months and still living.
13. Female population 15 years of age and over by age and number of children born alive in last 12 months but no longer living.
14. Number of deaths in last 12 months by sex and age of decedent (Table 29)

Tabulations Based on Additional First-Priority Items:

15. Population by marital status, age, and sex (Table 7)
16. Population 10 years of age and over by type of activity, age, and sex. (Table 9)
17. Economically active population by occupation, age, and sex. (Table 11)
18. Economically active population by occupation, educational attainment, age and sex. (Table 23)
19. Female population 15 years of age and over by age, number of children born alive, and educational attainment. (Table 24)
20. Number of households by size of household and occupation of head of household (by a maximum of 10 categories of occupations)
21. Occupation of head of household (by a maximum of 10 categories of occupation) by number of children in household and age of wife.

Tabulations based on Additional Second-Priority Items:

22. Population in households/<sup>and</sup>number of family nuclei by size of household and number of persons not living in households. (Table 4)
23. Economically active population by ethnic group (or citizenship), industry and sex. (Table 10)
24. Economically active population by ethnic group or citizenship, occupation, age and sex. (Table 11)
25. Economically active population by ethnic group or citizenship, status, age, and sex. (Table 12)
26. Economically active population by ethnic group or citizenship, status, industry, and sex. (Table 13)
27. Economically active population by ethnic group or citizenship, status, occupation and sex. (Table 14)
28. Economically active population by ethnic group or citizenship, industry, occupation, and sex. (Table 15)
29. Population 10 years of age and over by literacy, ethnic group or citizenship, age, and sex. (Table 16)

30. Population 5-24 years of age by school attendance, educational attainment, age and sex. (Table 18)
31. Population 5-24 years of age by school attendance, single years of age, and sex. (Table 19)
32. Population not economically active by functional categories, age and sex. (Table 22)
33. Population by citizenship or ethnic group, by age and sex. (Table 25)
34. Female population aged 15 years of age and over by 5-year age groups, number of years since first marriage, and number of children born alive. (for rural and urban populations only) (Table 26)
35. Economically active females by 5-year/age groups, marital status, and number of children below school age. (for rural and urban populations only) (Table 27)
36. Population of urban agglomerations by duration of residence, age and sex. (Table 30)
37. Population of urban agglomerations by place of usual residence, place of previous residence and sex. (Table 31)
38. Population by religion, age and sex. (Table 32)
39. Married males by number of wives and age. (Table 33)
40. Population unemployed in the reference week by work status in the past 12 months, age and sex. (Table 34).

ANNEX IV

STATUS OF RECRUITMENT OF COUNTRY EXPERTS  
(as of 10 June 1974)

<u>Country and post</u>	<u>Status of recruitment</u>
BURUNDI	
Analyst/programmer	No candidate; project suspended
Sampling expert	No candidate; project suspended
CAMEROON	
Population census adviser	Candidates submitted to Resident Representative of the United Nations Development Programme (UNDP)
Cartographer	TARS awaiting candidate's Government clearance before submitting to Res. Rep.
Population census (Associate expert)	No candidate
CENTRAL AFRICAN REPUBLIC	
Population census adviser	Expert in post
Population census (Associate expert)	Expert expected to arrive July 1974
CHAD	
Population census adviser	Expert in post
Census cartography	Candidates submitted to Res. Rep.
CONGO	
Population census adviser	Expert in post
DAHOMY	
Population census adviser	Expert in post
Census cartography	Candidates submitted to Res. Rep.
ETHIOPIA	
Population census adviser	Expert in post

ETHIOPIA (Cont'd)

Sample surveys adviser	Expert in post
Census cartography	Expert in post
Data processing adviser	Expert in post
Demographer	No candidate; required late 1975 or 1976

GAMBIA <sup>a/</sup>

IVORY COAST

Population census adviser	Expert in post
Population census (Associate expert)	Expert recruited and expected to arrive Sept. 1974

LIBERIA

Population census adviser	Expert in post
Demographer/analyst	No candidate

LIBYAN ARAB REPUBLIC

Population census adviser	Expert in post
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MADAGASCAR

Population census adviser	No candidate; project suspended
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MALAWI

Population census adviser	Candidates submitted to Res. Rep.
Census cartographer	Expert in post

MALI

Population census adviser	Expert in post
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MAURITANIA

Population census adviser	Expert in post
Population census (Associate expert)	No candidate

MAURITIUS

Demographer/analyst	Expert in post
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<sup>a/</sup> No country experts required, assistance having been provided by the regional staff of the African Census Programme and by the United Kingdom.

NIGER

Population census adviser      Expert in post

NIGERIA

Systems analyst      Expert in post

Census cartographer      Assignment completed April 1974

SENEGAL

Population census adviser      Expert in post

SIERRA LEONE

Population census adviser      Expert in post

Systems analyst      No candidate; Govt. suspended recruitment

SOMALIA

Population census adviser      Expert in post

Sample surveys adviser      Expert in post

Census cartographer      Expert in post

Data processing manager      Candidates submitted to Res. Rep.

Programmer      No candidate

SUDAN

Population census adviser      Expert in post

Census cartographer      Expert in post

Systems analyst      Expert in post

Computer programmer      Expert in post

Demographer/analyst      Candidate accepted by Govt.

UPPER VOLTA

Population census adviser      Expert recruited and expected to arrive  
mid-June 1974

Sub-regional advisers

UDEAC (Union douanière et économique  
de l'Afrique centrale)

Demographic statistics/  
Coordinator      Expert in post

ANNEX V

ITEMS TO BE INCLUDED IN NATIONAL CENSUSES OF 22 COUNTRIES  
PARTICIPATING IN THE AFRICAN CENSUS PROGRAMME  
(BASED ON PRELIMINARY PLANNING DOCUMENTS)

Minimum Items

Country	Name	Place at time of enumeration	Birth place	Sex	Age	Children born alive*	Children living*	Live births past 12 months*	Deaths past 12 months
Burundi	No information								
Cameroon	X	X	X	X	X				XS
Gen. Afr. Rep.	X	X	X	X	X	U/RS	U/RS	RS	U/RS
Chad	X	X	X	X	X	X	X	X	X
Congo	X	X	X	X	X	X	X	X	X
Dahomey	X	X	U	X	X	XS	XS	XS	XS
Ethiopia	X	X	X	X	X	X	X	X	X
Gambia	X	X	X	X	X	X	X	X	X
Ivory Coast	X	X	X	X	X	XS	XS	XS	XS
Liberia	X	X	X	X	X	X	X	X	X
Libyan Arab R.	X	X	X	X	X	X	X	X	X
Madagascar	X		X	X	X				
Mali	X	X	X	X	X		X	X	X
Mauritania	X	X	X	X	X				
Mauritius	X	X	X	X	X	X	X		
Niger	X	X		X	X	X	X	X	X
Nigeria	X	X	X	X	X	X	X	XS	XS
Senegal	X	X	X	X	X	XS	XS	XS	XS
Sierra Leone	X	X	X	X	X	X	X		
Somalia	U/R/MS	U/R/MS	U/R/MS	U/R/MS	U/R/MS	U/R/MS	U/R/MS	U/R/MS	U/R/MS
Sudan	X	X	XS	X	X	XS	XS	XS	
Upper Volta	X	X	XS	X	X	XS	XS	XS	XS

\* Asked of females only

X - Whole country  
U - Urban  
R - Rural sedentary  
N - Nomadic

XS - Sample whole country  
US - Sample urban  
RS - Sample rural sedentary  
NS - Sample nomad

Additional Recommended Items (First Priority)

Country	Type of (economic) activity	Occupation	Educational attainment	Marital status
Burundi	No information			
Cameroon	U	X	X	X
Sen. Afr. Rep.	X	X	X	X
Chad	U	U		X
Congo		X	X	X
Dahomey	U	U	XS	XS
Ethiopia	X	X	X	X
Gambia			X	
Ivory Coast	X	X	X	X
Liberia	X	X	X	X
Libyan Arab Republic	X	X	X	X
Madagascar	X	X	X	X
Mali	X	X	X	X
Mauritania	X	X	X	
Mauritius	X	X	X	X
Niger	X	X	X	X
Nigeria		X	X	
Senegal	X	XS	X	XS
Sierra Leone		X	X	
Somalia	US	US	U	X
Sudan		XS	XS	XS
Upper Volta	X	X	X	X

X - whole country  
 U - Urban  
 R - Rural sedentary  
 N - Nomadic  
 XS - Sample whole country  
 US - Sample urban  
 RS - Sample rural sedentary  
 NS - Sample nomad

Additional Recommended Items (Second Priority)

Country	Relation-ship to head of household	Ethnic group (or citizenship)	Literacy	School attendance	Industry	Status (employer, employee, etc.)	Usual place of residence	Duration of residence	Previous place of residence	Religion	Number of wives	Number of years since first marriage	Children below school age	Worked any time past 12 months
Burundi	No information													
Cameroon	X	R												
Can. Afr. Rep.	X	X		X										
Chad	X	R												
Congo	X	X		X	X	X	X	U	U		X			
Dahomey	X	X		XS		U								
Ethiopia	X	X	X		X	X		X	X	X				
Gambia	X	X		X										
Ivory Coast	X	X	XS	XS	X	X	XS	XS			XS	XS		
Liberia	X	X	X	X	X	X	X	X			X			
Libyan Arab R	X	X	X	X	X	X	X	X	X	X				
Madagascar		X		X		X		X	X					
Mali	X		X		XS	XS	X	X	X					
Mauritania	X	X	X	X	X	X	X	X	X					
Mauritius		X	X							X				
Niger	X	X	X	XS	XS		X	X	X					
Nigeria	X	X	X	X			X	X	X	X				
Senegal		XS		X		XS	X	X	X	X				
Sierra Leone	X	X		X	X	X	X	X						
Somalia	X		US		US	US	UR							
Sudan	X	XS		XS	XS	XS	X							
Upper Volta	X	XS	X		XS	XS	XS	XS	XS	XS	XS	XS		

X - Whole country  
 U - Urban  
 R - Rural sedentary  
 N - Nomadic  
 XS - Sample whole country  
 US - Sample urban  
 RS - Sample rural sedentary  
 NS - Sample nomad sedentary

ANNEX VI

PLANNED USES OF SAMPLING IN THE AFRICAN CENSUS PROGRAMME

<u>Country</u>	<u>Use of Sampling</u> <sup>a/</sup>
Burundi	No information - Project suspended
Cameroon	Yes - details not available
Central African Rep. <sup>b/</sup>	Yes - supplemental information for rural areas
Chad	Yes - details not available
Congo	No sampling
Dahomey	Yes - details not available
Ethiopia <sup>c/</sup>	Yes - supplemental information for rural areas and nomadic groups
Gambia	No sampling
Ivory Coast	No information
Liberia	Yes - supplemental information for rural areas and PES quality check
Libyan Arab Republic	No sampling
Madagascar	No information - Project suspended
Mali <sup>d/</sup>	Yes - details not available
Mauritania	Yes - details not available
Mauritius	No sampling
Niger <sup>d/</sup>	Yes - details not available
Nigeria	Yes - PES quality check
Senegal	No information
Sierra Leone	No sampling
Somalia	Yes - nomadic population to be sample enumerated
Sudan <sup>e/</sup>	Yes - supplemental information for rural areas and nomadic groups
Upper Volta <sup>d/</sup>	Yes - details not available

<sup>a/</sup> Exclusive of sampling in processing and tabulation.

<sup>b/</sup> Sampling will be used in the rural areas for the collection of supplementary data, using a built-in sample in one-stage cluster sampling with enumeration areas (about 750 inhabitants) as sampling units.

- c/ The general enumeration will be followed by a 5% sample survey to collect supplementary data as well as to serve as a coverage evaluation survey for the general population census. The scheme is still under consideration and no details have yet been worked out.
- d/ These countries plan to collect supplementary data for both the urban and rural population through the use of sampling. A short questionnaire will be used exhaustively and at the same time a long questionnaire will be used for about 5% of the total population.
- e/ Sudan conducted its population census in April 1973. A long questionnaire was used exhaustively in the urban areas (population - 5,000 +). In the rural settled areas, a short questionnaire was used exhaustively and a long questionnaire was used on a sample basis (one-stage cluster sampling). The sampling unit was a supervisor's area, with an estimated population between 2,500 and 3,500. For the rural nomadic population the sampling unit was the "sheikhship", using one-stage cluster sampling with probability proportional to size for the larger sheikhships and equal probability for the smaller sheikhships. In all cases the sampling fraction was 1/10. When it was decided to reenumerate the population of the Blue Nile province, two-stage sampling was used to determine the average household size, with villages as the primary sampling units and the households as the secondary sampling units.