

45955



UNITED NATIONS  
ECONOMIC  
AND  
SOCIAL COUNCIL



E/CN.14/Stat/L.14  
20 April 1961  
ENGLISH

ECONOMIC COMMISSION FOR AFRICA  
Second Conference of  
African Statisticians  
26 June 1961, Tunis,  
Agenda item 7 (b)

DOCUMENTS OFFICE  
**FILE COPY**  
NO TO BE TAKEN OUT

3

REPORT OF THE STUDY TOUR AND OF THE  
TRAINING CENTRE ON POPULATION CENSUS TECHNIQUES

Report of the Study Tour and of the  
Training Centre on Population Census Techniques

1. Since the last meeting of the Conference of African Statisticians a large number of countries in the region have undertaken, or have set in motion action for the purpose of undertaking, population censuses within their territory. Such action of the governments which follow closely on the lines of the recommendations of the First Conference of African Statisticians and that of the United Nations recommendations for a census programme around 1960, presents the most important development for a fuller knowledge of demographic statistics in the region. It is hoped that in another two to three years sufficient statistical knowledge on the distribution and characteristics of population for most of the countries of the African region will be available.

2. The Economic Commission for Africa has tried to follow and help in the development of this programme. Some aspects of the support given to the problem of data collection by censuses or sample surveys have been dealt in the paper relating to regional cooperation (E/CN.14/Stat/L.11) which has been presented to this Conference. During the 18 months since the first Conference, the Commission has undertaken two projects in West Africa, with a view to supplementing the efforts of governments in the population census field. This note tries to summarize the work done in connection with a study tour of West African statisticians carried out in Accra, Ghana, between 3 to 20 June 1960 and a 3 month intensive training centre for middle grade personnel employed in census work held between 15 March and 14 June 1961 at Accra.

3. The Executive Secretary would like to point out that the organization of the study tour and of the training centre would not have been possible without the generous host facilities provided by the Government of Ghana and the keen interest taken in these two projects by the participating governments. In particular he would like to express his appreciation of

the personal interest shown in these projects by the President of Ghana, the Hon. Mr. K. Nkrumah and the Finance Minister, the Hon. Mr. Gbedemah.

A. STUDY TOUR OF WEST AFRICAN STATISTICIANS  
ON POPULATION CENSUS TECHNIQUES  
(Accra, 3-20 June 1960)

4. The study tour of West African Statisticians was organized in Accra from 3rd to 20th June 1960 by the Economic Commission for Africa in close co-operation with the Government of Ghana, to observe the methods used in the 1960 Ghana Population Census. The Executive Secretary of the Commission obtained the approval of the Government of Ghana to the study tour in accordance with the recommendations of the First Conference of African Statisticians on the exchange of experience in the conduct of field surveys (para.58 of the report). Earlier discussions between the Secretariat, the Ghana census office and the statistical offices of several West African countries had indicated an interest in an exchange of experience on the Ghana experiment and the Executive Secretary decided that it would usefully serve as a demonstration project in problems relating to the collection of demographic data in West African countries.

5. The Study Tour was attended by twelve participants from the following ten countries of West Africa: Cameroun, Guinea, Ivory Coast, Liberia, Mali Federation, the Niger, Nigeria, Sierra Leone, Togo and the Upper Volta. <sup>1/</sup> The participating group consisted of eight statisticians, three administrators and one sociologist-ethnographer.

6. The organisation of the tour in the first three weeks of June made it possible for the visiting group to observe at close quarters the

---

<sup>1/</sup> While all countries, except Nigeria and Sierra Leone, sent one participant to the Study Tour, two participants were present, Nigeria and Sierra Leone. The participant from Ivory Coast was invited in his personal capacity.

Post-Enumeration Survey which represented the second phase of the Ghana Census operations and which was initiated on 8th June 1960. While the demonstration aspects of the Study Tour were oriented to this phase of census activity, the programme was organized in such a manner as to include detailed discussions on the planning and operational aspects of the complete enumeration of population carried out in March 1960.

7. The programme included group discussions regarding the organisational and planning aspects of the census, visits to the regions to observe training centres and field operations of the post-enumeration survey as well as individual discussions at the various sections of the Census Office. A brief summary of the discussions that were held are given in a later section. In as much as the purpose of these meetings were to compare the experience of the countries represented in the problems of collection of demographic data, this summary is likely to stress the differences in methodology which have been practised in West Africa. However, it must be pointed out that throughout the discussions, there was general concensus on the thorough and efficient manner in which the Ghana Census was organized and conducted and it was fully recognized that the Ghana approach had been unique and a useful example for the countries of West Africa.

#### 1. Preliminary Organizational Arrangements

8. Since the Study Tour had to be organized within a very short time and the Study Group was expected to include some administrators and non-statisticians, it was necessary to organize a programme of maximum flexibility in terms of content to be useful for officials with varied background. In view of this, the emphasis given in the programme tended to be in the direction of census techniques and operations.

9. The discussions were in two parts. The first was intended to bring the participants in contact with every aspect of the Ghana Census programme. Such aspects as central office organisation, geographical

preparations, etc., were introduced in a paper presented by the person who had been largely responsible for it at the census. In general, nearly three-fourths of the time allocated for the subject was reserved for discussion. The second part of the discussion which followed the field visits was utilized in an examination of the Study Tour experience and its applications to the participating countries. The scope of these discussions was later, at the request of the participants, enlarged to include the problems of collection and analysis of demographic data in the countries represented at the Study Tour.

10. Since eight of the twelve countries invited to send participants were French-speaking, consecutive interpretation services were made available during the course of the Study Tour. Unfortunately the lack of high-level translation services prevented the complete translation of all documents.

## 2. The Discussion Programme

11. Three different methods of collection of demographic data have been followed in West Africa. First, there has been a number of censuses like the one in Nigeria in 1952-53 and in Ghana in 1948 where a complete enumeration of the population was attempted. Secondly, such data have been maintained by means of administrative registers as in a number of French-speaking countries. Finally in the last decade, several sample surveys on a national level have been carried out. The Ghana census, combining as it did aspects of both complete enumeration and sample inquiry within its frame of reference could therefore provide a useful guide to some of the advantages and shortcomings of these different methods.

12. The discussion programme, though it used the Ghana census procedure and operations as the starting point of reference with regard to each topic, permitted an examination of various methods and techniques used in the countries represented and of their relationships to the recommendation

for population censuses drawn up by the United Nations. <sup>2/</sup> Emphasis will be given below to some of those areas which were discussed in detail and in which different approaches were considered by the participants at the Study Tour.

(a) General problems of census organization. In general discussions on the principles governing census programming the following aspects attracted considerable interest: the time required for planning, budget implications and the need for continuity in demographic work.

14. It was generally felt that the period of planning between the time of setting up the central office and the actual enumeration should be between 1½ to 2 years in West African countries, since the geographical and other administrative background did not exist at the moment. In this connexion it was felt that in spite of the 9 month period during which the Ghana census had to be prepared, an efficient and scientifically prepared programme had been undertaken.

15. The budgetary implications of the programme came up again and again for discussion. Most technicians present felt that, while the cumulative and broad use accruing from a census programme cannot be denied, it may be difficult to undertake an overall operation like the Ghana one in most countries at the present time. In this connexion, a detailed discussion was held of the reliability and utility of complete censuses in contrast to sample surveys. It was felt that the Ghana approach of a two-stage process coupling a complete country enumeration on a minimal number of characteristics with a more detailed post-enumeration survey would be desirable one.

16. The need for building up a small staff nucleus which would provide continuity in census work in each country was emphasized at most of the

---

<sup>2/</sup> United Nations, Handbook of Population Census Methods, New York.

discussions. It was felt that, if allowance were made for the time required in completion of tabulations and analytical utilization of the results, such staff would be essential.

17. (b) Census organization. The machinery for co-ordination of intra-governmental effort and for eliciting public co-operation should be representative of the highest level of responsibility and influence in the country to make a nation-wide operation like the census successful. In this connexion the organization of the census committees which brought together the ministers of Finance, Education, Health and Social Welfare and Local Government and the Regional Commissioners was examined. The similar approach adopted for census education with its regional and district committees built up 20,000 voluntary agents to ensure public co-operation. This method was recognised by most participants as useful and likely to have general applicability to their countries.

18. A strong organization of planners and organizers at various levels to support the census organization was considered essential for the carrying out of a census operation. In this context, it was pointed out that some of the countries which did not possess such personnel have problems of training, transportation, etc., and that it may be difficult for them to conform to such a unitary system of control. The need for training of personnel to man the supervisory and planning level was emphasized.

19. (c) Concepts, Definitions and Questionnaires. While every aspect of the questionnaire used in the Main Census and in the Post-Enumeration Survey was examined in detail, questions relating to the concept of simultaneity, age determination, migration and enumeration of floating population evoked special attention.

20. While the principle of simultaneity is an internationally accepted one, the method by which it was brought to the attention of the people of Ghana was both unique and interesting. By a continued education drive which kept reminding the people of the Census date (20 March 1960) and of their

duty to give information in the national interest and by celebrating the date itself more or less on the level of a national holiday, the census organization had sought to put a firm impress on the people minds the date of reference of the Census.<sup>3/</sup> The Study Tour examined this question in detail to see whether this procedure would have any related effect on the type of information collected.

21. An attempt was made also to get a more accurate determination of age by using lists of historical dates. It must be pointed out that this was one of the few occasions when such an attempt has been made in a complete enumeration. The Study Group also examined the relative merits of asking for completed age as against provision of broad age group and the general opinion was that completed ages should be sought.

22. Techniques used in the Post-Enumeration Survey to study migration were highly commended. The methods used could give very valuable information on internal and international migration to Ghana and could provide some answers for a question which is of great interest to most West African countries.

23. The enumeration of the floating population came in for critical study and it was felt that the procedure of filling in the form on the midnight of a specified date may not have prevented omissions and thereby limited its utility for qualitative appraisals.

24. (d) Other procedural problems. The methods of recruitment of staff and the problems concerned with staffing and training of the various levels of field staff were examined. While Ghana had been able to secure the bulk of the staff from within the existing government services, doubts were expressed about similar possibilities in most of the other countries of

---

<sup>3/</sup> To some extent, the success of this operation in achieving complete coverage can be judged by the results of the Post-Enumeration Survey held in June.



West Africa. Though it was felt that the period of training was generally smaller than in countries where sample surveys had been conducted instead of complete censuses, it was recognised that the method of providing training in small groups for all levels of field staff and the provision of residential training courses represented an advanced approach to training.

25. The problems of maintaining continuing contact between the Central Office and the field, the checking of enumeration efficiency, the reliability of various estimates obtained in the sample post-enumeration survey were among some of the other questions considered.

### 3. Field Visits

26. The field trips arranged during the Study Tour included a one-day visit to a training centre for observing the recapitulation exercises of field staff and a five-day visit to regional and district centre. The field visits provided an opportunity of observing the organization of field work and an observation of the various approaches adopted for the enumeration of persons living under different social and economic conditions. Finally, the Study Group observed the enumeration of the "floating population", i.e. pavement dwellers and other migrant population with no local addresses at Accra between 12 and 3 a.m. on 13 June 1960.

## B. WEST AFRICAN TRAINING CENTRE IN POPULATION

### CENSUS TECHNIQUES

(Accra, 15 March 1961 to 14 June 1961).

27. The Study Tour of West African Statisticians had provided an opportunity for some of the senior workers in statistical and related fields to observe and discuss the census procedures and techniques used at the Ghana Census and Post Enumeration Survey in relation to the problems of collection of demographic data in other countries of West Africa. It was

recognised during the discussions that the magnitude and complexity of modern census operations require a scientific approach to the problems of planning of such activities as field operations and efficient tabulation and analysis of census results. The need for building up a nucleus of trained personnel, who will help in the planning, organizing and carrying out of census programmes in the countries, with experience of census procedures and related problems was emphasized. It was also recognized that a training programme for this purpose was urgent since a number of West African countries were planning to take censuses in 1961/62.

28. On the basis of contacts with the Governments of West Africa to ascertain their needs and requirements for such a training programme, a scheme for training of English-speaking participants from West African countries was evolved. The initiation of the programme was made possible by the generous offer of the President of Ghana to place at the disposal of the project the technical resources developed in that country during the 1960 Population Census of Ghana. A Centre sponsored by the participating Governments, the Government of Ghana, the United Nations Bureau of Technical Assistance Operations, the UN Statistical Office and the United Nations Economic Commission for Africa, was opened in Accra on 15 March 1961.

#### 1. Organization

29. The training centre was developed as a co-operative project between the Government of Ghana, other West African countries and the United Nations. The Government of Ghana, the host government, made the major contribution to the organisation of the course by providing the services of most of the lectures, the office and clerical facilities for the scheme. The responsibility for contacting the government of the region and for the scope of the programme developed on the Economic Commission for Africa. The participating government co-operated in sharing part of the fellowship

costs at the Centre.

Lecturers were provided by the following agencies:

- (i) Government of Ghana including: The 1960 Population Census Office, Central Bureau of Statistics, University College of Ghana.
- (ii) United Nations Headquarters and Economic Commission for Africa.
- (iii) United Nations Food and Agricultural Organisation.
- (iv) United States Operations Mission to Ghana.

30. The programme at the Centre was under the direction of Dr. B.Z.Gil, Population Census Expert assigned to Ghana under the United Nations Technical Assistance Programme. A list of lecturers is given as appendix "A".

31. Ten participants from the countries of Nigeria, Sierra Leone and Liberia, which plan to take census in the first half of 1962, attended the Centre.

## 2. The Course Programme

32. The course programme followed at the Centre consisted of three types of instructions. The students were given over 500 hours of training of which nearly two-thirds of the time was devoted to class room lectures. The remainder of the time was spent in practical training involving participation in field exercises. One of the major aspects of this aspect of work was the planning organisation and carrying out of an experimental census including actual field enumeration and processing of census returns. Even though the programme was basically oriented to the executive and operational aspects of census taking, an attempt was made to show the problems of inter-relationship between the various stages of census procedure and the organisational and procedural aspects of the operation. A detailed outline of the training programme is given as Appendix "B".

### C. CONCLUSION

33. The Study Tour and the Training Centre in Population Census techniques were intended to serve two different types of personnel who would be required to man the organisational set-up of census offices. The Study Tour was intended to provide an exchange of experience among persons who had already had experience in census or survey work. The primary purpose of the Study Tour was to use the Ghana census experience as a demonstration project for a detailed discussion of the problems of collecting demographic data in West Africa. The Training Centre was, however, intended to train a nucleus of staff at the intermediate level needed to supplement the existing personnel of countries on the verge of carrying out a large scale count of human populations in their territory.

34. It is hoped that these two sub-regional projects undertaken since the First Conference of African Statisticians will help towards the use of better techniques and operational procedures in the programmes for collection of demographic statistics planned in the future in West Africa. The scope and scale of operations in the demographic field are likely to be affected by such limitations as scarcity of financial resources lack of administrative bases and organizational facilities. Even so there is a great consciousness of the importance of demographic data as a basis for social and economic development programmes and the desire to carry on demographic work as a continuing governmental activity in most parts of Africa. The response to regional programmes in the field of census training carried out in the past eighteen months seems to indicate that the time is appropriate to initiate facilities for training high level analysts of demographic data.

WEST AFRICAN TRAINING CENTRE ON POPULATION CENSUS TECHNIQUES

LIST OF LECTURERS AND INSTRUCTORS

A. From International Organizations

1. B. Gil, United Nations Bureau of Technical Assistance Operations.
2. Miss K. Jupp, Regional Advisor for Population and Vital Statistics, United Nations Bureau of Technical Assistance Operations, Addis Ababa.
3. Dr. Strong, Agricultural Economist to the Government of Ghana, United Nations Food and Agriculture Organization, Accra.

B. From Ghana Government

1. A.F.Aryee, Census Office, Accra.
2. T.A. Boye, Government Statistician's Office, Accra.
3. K.T. de Graft-Johnson, Census Office, Accra.
4. D.K. Ghansah, Census Office, Accra.
5. E.N. Omaboe, Government Statistician and Census Co-ordinator.
6. R.L. Prevett, Controller of Punch Card Section.
7. J. Riby-Williams, Principal Secretary, Ministry of Social Welfare, Accra.

C. From University College of Ghana

1. D. Friedlander, lecturer in Demography.
2. J. Hunter, lecturer in Geography.
3. Lecturer in Sociology.

D. Invited Lecturers.

1. A. Raz, Programming Advisor on Mechanical tabulation.
2. Mr. H. Nisselson, United States Bureau of the Census (Sampling, Statistical Standards and Quality Control).
3. Lecturer on Mechanical Processing and Equipment.

WEST AFRICAN TRAINING CENTRE ON POPULATION CENSUS TECHNIQUES

PROGRAMME OF LECTURES AND EXERCISES

A. PLANNING OF A MODERN POPULATION CENSUS

1. The Importance of Population Censuses.
2. The 1960 World Population Census and its relation to censuses in Africa.
3. History of Population counts in Africa - their concepts, methods, organization and results.
4. Essential Features of a Modern Census and the applicability of such principles to African conditions.
5. Importance of Census Planning
  - a. The old administrative approach vis-a-vis modern statistical methods.
  - b. Elements of a modern census plan in an African country.
6. The Adherence to a Time-Table
  - a. The determination of dates
  - b. Flexibility of the Time-Table and revisions.
7. Sampling in Population Censuses
  - a. Complete censuses - vis-a-vis sample enquiries.
  - b. Sample enquiries as supplements to complete enumeration.
  - c. Sampling applied in pre-tests and trial censuses, in quality control and census evaluation (measurement of census errors).

8. Relation of Population Censuses to other Censuses, Population Registers and to ad-hoc Inquiries

- a. Agricultural Census or national sample enquiry - objectives, field of enquiry and differences in concepts and techniques used: household - family, holding-farm; the definition of economic activity in agriculture; of under-employment and other labour force characteristics.
- b. The Housing Census as combined with the Population Census and its use for assessing level of living.
- c. Population Registers their tasks, methods of compilation and problems of their maintenance.
- d. Labour force censuses or sample enquiries - objectives, scope and methods vis-a-vis population censuses.

9. Census Legislation

B. POPULATION CENSUS CONCEPTS AND CLASSIFICATIONS

1. Units of Enumeration and Recording

Individual vis-a-vis group enumeration; the use of group enumeration in population counts in Africa and their usefulness; the advantages of individual enumeration from the point of view of census taking and statistics preparation. Possibility of post-enumeration checks and evaluation.

2. Units of Inquiry - Individual; family or household; household or compound - the various concepts, definitions and their uses with respect to additional or subsequent enquiries and data evaluation.

3. Questionnaire Layout and Recording

- a. Types of Questionnaire - Individual schedule; family or household or housing unit schedule; multi-household or house or compound schedule; institutional questionnaire; line questionnaire.

- b. Method of Recording - Open, closed or semi-closed questions.

4. Definition of Population - de facto and de-jure population (or present and resident population) and method of enumeration; advantages and disadvantages of their application to African societies with regard to completeness of coverage, size and character of population; combined method of enumeration.
5. Geographic Concepts - Place of birth, origin, home town, usual residence (with special reference to the study of migratory movements).
6. Demographic and Social Concepts and Classifications
  - a. Determination of age and the calendar of other events (e.g. migration).
  - b. Tribal and Regional Groups - Confusion with area of habitation or provenance; determination from father side or mother side; mixed tribal origin.
  - c. Education and Literacy - The definition of literacy; the determination of standard of education and its international comparability.
  - d. Size of Household - Family; pattern of household composition and its determination; pattern of household relationships.
  - e. Number of Children - determination with respect to fertility of women.
7. Economic Concepts and Classifications

Type of activity - economically active and non-active population; age limits; time reference period (one year, one month, one week). Measurement of under-employment and un-employment. Determination of industry. Primary and secondary occupations. Employment status. Combination of employment characteristics to indicate socio-economic groups.
8. Questionnaire Content - division of topics between "main" census and sample enquiries connected with the census.



9. Technical and Practical Problems in the Preparation of Code List (Discussion on experiences in Ghana and other countries).
  - a. General coding instructions.
  - b. Geographic demographic code list.
  - c. Economic code lists - with particular reference to the compilation of national indexes of industries and occupational classification.
  - d. The role of alphabetical code lists; and of coded lists of establishments; mechanical methods of their preparation.
  - e. Revision and improvement of code lists.

C. PLANNING CENSUS ANALYSIS, THE TABULATION AND PUBLICATION PROGRAMMES

1. Determination of Scope and Aspects of Analysis -
2. Preparation of Tabulation and Publication Programmes
3. Estimation of Rural Population
4. Determination and Description of Enumeration areas in urban, savannah and forest areas.
5. Preparation of Rural Enumeration and Supervision Areas in rural and urban areas.
6. Preparation of Maps for Publications
7. A General Plan of Geographic Census Preparations (seminar)
8. General Review of Geographical Problems in Census

**E. ORGANIZATION AND ADMINISTRATION**

**1. Structure of Census Organization**

- a. The need of a special organization within or outside the existing statistical or related agencies.
- b. The set-up depending on local conditions and example from other countries.
- c. Vertical cross-section - Ministry, Head Office, Regional and District Offices and levels of responsibility; decentralization and supervision; use of existing administrative set-up.
- d. Horizontal cross-section - Head Office sections; co-operation with scientific agencies and other Departments; Regional Offices and District Offices' set-up; ways of control and co-ordination.

**2. Policy Matters of Census Organization**

- a. Central Census Committee - composition and tasks.
- b. Census priority in various fields, e.g. staff secondment, transport, printing, telecommunication and other services.
- c. Special role of other Government Departments in census operations - delegation of tasks and responsibilities.
- d. Co-ordination of activities by inter-departmental working committees.

**3. Head Office Staff**

- a. Staff requirements and source of recruitment (special problems in African countries).
- b. Qualifications and skills required in various fields and ways of training.

4. Field Staff

- a. Staff Requirements - estimating personnel needs; factors which influence strength; grades and levels of responsibility; and qualifications.
- b. Selection and Recruitment - sources of recruitment in African countries; time table of recruitment; selection and registration of various grades of staff; systems of remuneration.
- c. System and Content of Training - snowball fashion; residential or extra-mural; intensive in short periods or extensive with longer intervals; theoretical and practical training and differences in approach in censuses and in small intensive enquires, method of instruction; control of instruction and classes; costs of various types of training.

5. Census Services - printing of documents; other census kits and personal equipment; despatch and distribution and means of communication with the field.

6. Budgeting and financial control - methods of estimating costs; remuneration system; staff transport and general control of expenses; revision of cost estimates (real costs as compared with direct expenses)

7. Census Education

- a. The concept of census education as compared with the concept of publicity. Census education as part of basic mass-education.
- b. Organization for eliciting public co-operation.
- c. Objectives, materials and fields of activity including customary and extraordinary communications media.
- d. Testing effectiveness of census education activities.

## F. CENSUS TESTS

1. The Objectives of Various Tests

Testing of draft questionnaires and other documents to obtain information on performance standards, costs, behaviour patterns of the population, etc; testing training systems, the efficiency of census field organization and other census operations, e.g. enumeration of institutions and non-stable populations, and night enumerations; testing processing procedures.

2. Types of Census Tests and Examples3. Selection of Areas and Population - Selection according to type and objectives of the test; purposive and sample selection.4. Costs and Timing - The economics of census tests; time table of tests in relation to their uses.

## G. CENSUS ENUMERATION

1. The Importance of Enumeration - The crucial moment of census taking; Census Day or Census Night; testing census preparedness.2. Methods of Enumeration - their Advantages and Disadvantages in African countries.

- a. Canvasser Method - The system of interviewing and recording; assisting respondents in working out replies in African countries; ensuring uniformity of interpretation of concepts, better records and control of coverage.
- b. Householder Method - financial and other advantages.
- c. Combination of the two methods in various areas according to differences in degree of education of the population; enumeration of institutional population.

3. Length of Enumeration Period - Advantages and disadvantages of lengthy enumeration period from the point of view of availability of enumerators, completeness of coverage and quality of information; reference to point of time of census count and population characteristics.
4. Selection of Census Date and Period - The need for advanced determination of date; factors determining selection of census date - constitutional, customary, economic and climatological, social.
5. Enumeration of Special Categories of Persons - Methods and Documents.  
Institutional stable population; institutional non-stable population; enumeration of special places and the problem of "out door sleepers"
6. Control of Coverage and Double Enumeration - Advanced listing of houses; fixing house numbers; special forms for and post-enumeration checks of non-stable population; the concepts of place of enumeration; place of stay during Census Night; place of residence. Revisits.

#### H. POST ENUMERATION OPERATIONS

1. Field Counts and their Reliability - The need for speedy publication of total population counts and by geographic or administrative areas; means of communication of results; report forms and methods of computation and presentation of results; tests of reliability of results (error measurement).
2. Assembly of Census Documents and Materials -
3. Checks and Acceptance of Documents and Materials -
  - a. Main Types of Checking - physical counts of documents and of materials and statistical check and screening.
  - b. The checks in the field and their reliability by type of check and level of responsibility.
  - c. The Physical Check in the Head Office (or Regional Office) - methods, reliability, importance and implications.

- d. The Statistical Check in the Head Office (or in the Regional Office) - methods of screening; acceptance levels; rejection and correction or re-enumeration.

## I. DATA PROCESSING - CLERICAL

1. Quick hand counts and summary compilations vis-a-vis extensive tabulation and intensive analysis. Hand processing and mechanical processing.
2. Editing - Purpose of editing as compared with screening; methods - clerical or visual and mechanical; time interval between editing and enumeration; assignment of codes to missing entries (in Coding Room, Punching Room, Machine Room).
3. Coding
  - a. Various aspects and sectors of coding - group entries, geographic and demographic coding, economic coding; individual item coding or group item coding.
  - b. Overall or specific coding - division of coding between various skills - advantages and disadvantages (cost, and quality).
  - c. Improvement of coding procedures - referral Slips, Supplements, Amendments, Notices.
4. Verification
  - a. Objectives in complete and sample verification; effectiveness, usefulness and cost.
  - b. Re-verification - sampling system; cumulative error of verification and re-verification.
  - c. Frequency of coding errors - source and type.
5. Work Measurement and Quality Control - Summary
6. Recruitment and Training

Selection of Coders and Verifiers; system and time length of training; labour turnover; costs.

J. DATA PROCESSING - MECHANICAL

1. Planning and Programming
2. Machines and their functions
3. Implementation and Controls
4. Personnel requirements

K. ANALYSIS OF CENSUS RESULTS

1. Old and New Systems of Data Presentation
  - a. The Traditional Approach - Overall description of characteristics and analysis of some aspects as an introduction to statistical tables of main volumes.
  - b. The New Approach to Intensive Analysis - division of publication into main volumes containing basic administrative and research data; selection of topics for more intensive analysis (monographs); advantages of the new system.
2. Some Selected Techniques of Demographic and Social Analysis - Sociological problems in census analysis; measuring mis-statements of age and their correction; measurements of fertility; model life tables; influence of birth and death rates on the ageing of the population; measurements of internal migration and the spatial distribution of the population; urbanization and its socio-economic implications; some notions on forecasting population trends; impact of rapid population changes on economic development and their inter-relationships.
3. The Analysis of the Characteristics of the Economically Active Population
  - a. Measurement of size and changes in the economically active population; the importance of studying the definitions and classifications used in various censuses.
  - b. Analysis of the economic structure and its changes based on the classification by industry and occupation; inter-regional and urban-rural differences.

- c. Some Specific Inquiries - measurement of unemployment and under-employment; the relevance and nature of secondary employment.
- d. Classification of the total population (or only of the economically active population) by socio-economic groups and its relevance to the study of socio-demographic and economic relationships.

#### L. POST ENUMERATION EVALUATION

1. The Relevance of Post-Enumeration Checks - Quality of census information and the need for measuring census errors; types of Census Errors (errors of coverage; response errors); the purposes of post-enumeration checks; the link between pre-enumeration tests and post-enumeration checks.
2. Checking Techniques
  - a. Techniques in checking coverage and their limitations in African societies.
  - b. Sample re-enumeration for measuring response errors and their applicability in African countries.
  - c. Office and field reconciliation checks of coverage and response.
  - d. Checks through comparison with data from other sources (e.g. from other independent enquiries; existing registration and current statistics (record checks); internal consistency checks.
3. Methods of Evaluation - Estimates of errors in coverage (household and individual; gross and net) and measurement of response errors by type and source.

#### M. EXERCISES AND SEMINARS

Below is a list of main exercises and seminars to be held either as part of the various lectures or at the end of the course.



Some of the exercises and seminars require an account of experiences gathered in the country of the participant. It is, therefore, helpful and advisable that participants gather the corresponding information before their departure for the course. (See particularly topics 1,2 and 6 below).

1. History of population censuses in the country of the participant - their concepts, organization and results. Prospects and reasons for taking in the near future a population census in the country of the participant.
2. Short account of a demographic enquiry or a social enquiry with demographic topics, carried out in the country of the participant - objectives of inquiry, scope, methods and results.
3.
  - a. Which of the two methods of enumeration: de-facto or de-jure would be the most suitable one to the country of participant? Give reasons especially with respect to ensuring completeness of coverage.
  - b. What would be the most suitable unit of enumeration: household (family) or house (housing unit)?
4. Design of a questionnaire and other forms (the content of questionnaire will be centered on specific population and social topics relevant to the participant's country).
5. Preparation of "Instructions to Enumerator" on a selected question(s) or operation.
6. Availability of maps for census enumeration purposes in the country of the participant - source, scale and date of compilation.
7. Drawing of chart showing the set-up of the national statistical and or census organization. Proposed set-up for census period.
8. Estimate of census staff requirements by level of responsibility and geographic distribution. Additional indications: qualifications, sources, dates of recruitment.
9. Preparation of a training programme for various levels of census staff.
10. Preparation of a time-table of census operations.
11. Experimental Census - this exercise will be carried out at the end of the lectures. Each participant will be responsible for a certain aspect of the operations and the experiment will serve as a practical rehearsal. The whole project will last about a fortnight. Two to

three days will be devoted to preparations and three to four days to actual enumeration. On the following week the screening, editing and clerical processing of the completed questionnaires and an office reconciliation check with 1960 Population Census questionnaires will be carried out.

12. Geographical preparation - practical exercises will be held as part of the lectures on geographical preparation and will include such aspects as mapping and identifying enumeration areas in rural and urban conditions.
13. Seminar on the best methods to ensure completeness of coverage.

.....