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REPORT OF THE MEETING OF AFRICAN CENSUS PROGRAMME  
COUNTRY EXPERTS

Addis Ababa, 19-23 August 1974

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## ORGANIZATION OF THE MEETING

### Opening and duration of the meeting

1. The second meeting of United Nations country experts assigned to the African Census Programme was opened on Monday, 19 August 1974, at 10:30 a.m. by the ECA Deputy Executive Secretary, Mr. Mamadou A. Aw, on behalf of the Executive Secretary who was away from Addis Ababa on mission.
2. The meeting took place from 19 to 23 August 1974 under the chairmanship of Mr. Sigmund Schor, Technical Adviser in the United Nations Statistical Office in New York.

### Opening address

3. In his opening address, the Deputy Executive Secretary expressed pleasure of welcoming the participants, who were engaged in the implementation of a very large programme which involved general problems of co-ordination and management. Thus, it was important to the solution of their individual difficulties that they should meet with one another as well as with United Nations Headquarters and regional staff.
4. The first meeting of country census experts in 1973 had been useful in that a number of problems had been identified in a constructive manner, but the second meeting should aim to specify the action needed to ensure the successful implementation of all the projects within the programme. The African Census Programme was primarily designed to assist those countries which had found it difficult to participate in the 1970 World Programme of Population and Housing Censuses. Its current objectives were to assist the processing and analysis of the seven censuses already completed and to ensure the successful implementation of censuses in the remaining fifteen countries in the programme. He appreciated the difficulty of the task confronting the experts responsible for these projects and urged them to examine the causes of their current problems and to recommend appropriate remedial measures. In conclusion, he expressed confidence in the ability of the United Nations experts to make the censuses as complete and accurate as possible and wished them success in their deliberations.

### Participation

5. The meeting was attended by 17 experts from 14 countries, the 6 regional advisers currently assigned to the programme, representatives of the United Nations Statistical Office, the Office of Technical Cooperation (OTC), the ECA Statistics Division and the ECA Technical Assistance and Programme Co-ordination Office (TAPCO).

### Agenda and Organization of work

6. The meeting had the following agenda:

1. Individual country review of 1975 budgets and long-range work plans and budgets for subsequent years.
  2. Discussion of the technical and organizational problems of the African Census Programme (prepared by the Regional Advisers of the Economic Commission for Africa).
  3. Experts' reports on individual census operations.
  4. Detailed discussions by selected experts of individual project experiences.
  5. Review of monthly progress reports to be completed by census experts.
  6. Other business.
7. Work under Agenda Item 1 took the form of individual discussions with the OTC representative. All other topics were examined in full sessions of the meeting.

### SUMMARY OF PROCEEDINGS

#### Individual country review of 1975 budgets and long-range work plans and budgets for subsequent years

8. In his introductory remarks, the representative of the United Nations Office of Technical Cooperation stated that a project document, based on document UNFPA/19, was needed for each census project. The project document should mention all project activities, set out the comprehensive project budgets of UNFPA and the Government concerned and indicate precisely all obligations of the three parties concerned (the Government, OTC, as the executing agency, and UNFPA). The project budget should be related to the original request for assistance by the Government, even if, as in most cases, it was formulated before the arrival of the country expert because it constituted the original budget estimate submitted by OTC to UNFPA. In preparing a project budget, the country expert should stay within the limit of the original budget estimate. Any proposed augmentation of the original budget total should be fully and precisely justified. He cautioned that, because of financial constraints, UNFPA would scrutinize very closely any project budget which exceeded the original budget estimate.

9. He touched upon some major problem points in the project document, as follows. The administrative assistance referred to in line 13 should be utilized only for (1) a full-time project secretary and (2) a project chauffeur, if there was one; i.e. for personnel who were engaged and paid by the local UNDP office and were therefore under contract to the United Nations. On the other hand, the incentive payments mentioned in line 16 applied to all national personnel, such as cartographic agents and enumerators, who were under contract to and paid by the Government. OTC would advance 50 per cent of the approved

allocation for incentive payments to the Resident Representative for "reimbursement" to the Government shortly before the census enumeration date. The remaining 50 per cent would be authorized to the Resident Representative after the census enumeration with instructions to reimburse it to the Government upon the receipt of a duly audited Government account of its disbursement of payments to national staff. Where equipment was concerned, the United Nations regulations required international bidding. Requests for local purchase of equipment should therefore be considered exceptional and shall be fully justified. Sufficient lead time was obviously essential in ordering equipment and detailed specifications were invariably required. Line 53 should be understood to include the renting of computer time as well as unforeseen miscellaneous expenditure.

10. A country's draft census questionnaire should be sent to New York with a copy to ECA, for review before being finalized in the country.

11. Experts should ensure that a Government's commitment to the project was serious, and that its counterpart contribution was adequate; for instance, a sufficient central census office organization was obviously essential. All counterpart financial and other obligations should be defined in the project document.

12. The OTC representative concluded by saying that OTC was giving a great deal of attention to the census projects in Africa and had set up a Special Steering Committee to review and suggest resolution of outstanding operational problems.

13. During the week of the meeting, the OTC representative discussed the status of the implementation of each project with the country expert concerned. He reviewed draft project documents and budgets and examined the administrative problems of each census project. An ECA regional adviser was present at each meeting to provide technical input. A note on each discussion, and on the recommendations made in it in respect of project activities has been placed in the relevant ECA file.

#### Discussions of the technical and organizational problems of the African Census Programme

#### Census Calendar, planning and organizational responsibility in the different census phases

##### I. Introduction

14. The concepts of calendar, planning and organization could be said not only to be basic to the census project but also to have an overriding importance at every phase of the census implementation programme and at every step within each phase. Failure to recognize that fact might explain some of the difficulties experienced by many countries participating in the African Census Programme and might determine whether a census was good or bad or whether there was no census at all. The census calendar was, indeed, only an ordered and systematic transcription of the planning that had been made for its implementation. Such planning, on the other hand, was directly contingent on the

organization that had or would be created to carry it out. Up to a point, it could be said that the quality and competence of the census organization of a country determined the quality and realism of the planning, which, in turn, allowed for the preparation of a census calendar that thereafter acted as a guide line and control mechanism over the entire implementation of the project. A census could be compared to a vast plan of action that brought together over space and in a synchronized arrangement a broad and diversified range of expertise and activities that will involve thousands of people. The results of such an undertaking definitely depended on its planning and calendar, both of which were contingent on the existence of an adequate organization.

## II. The Legal base of a national census

15. A national census must have a legal base, which was outside the actual planning activities. It was, nevertheless, usually the first item on the list of elements entering into a census. In the Report of the Seminar on Organization and Conduct of Censuses of Population and Housing, held in Addis Ababa in June 1968, it was stated in the chapter on general census planning that:

"The preparation of the legal base for the census was considered a very important basic element of a census plan. It was agreed that without such legal authority clearly defined no step could or should be taken because it was only by virtue of this authority that the funds could legally be appropriated for the carrying out the census and administrative responsibility fixed". 1/

16. It would seem that that recommendation had been somewhat forgotten in the case of some countries and that its actual relevance, in relation to the planning of a census, had not always been fully appreciated. If looked at from the planning and the calendar point of view, a legal base was required from the start in order to set up the administrative bodies that will have the responsibility to determine the scope of the census and the nature of the political and financial commitment required by the country.

17. In brief, a realistic drafting of a census calendar and a budget which was related to it called for the prior existence of:

- (a) A national census commission or committee with the responsibility to develop an acceptable census programme;
- (b) A national central census office with the primary responsibility to prepare a detailed census programme covering the information to be solicited, the query model to be used, the operations to be performed, the timing of these operations, the equipment that would be required and the human and financial resources that would be needed.

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1/ Report on the Seminar on the Organization and Conduct of Census of Population and Housing, Addis Ababa, 17 - 28 June 1968, vol. 1, p. 4, para. 11.

18. It was on the basis of the work of the central census organization that the census calendar was in fact set up; and it was on that basis that Government, through its national census commission, could properly appreciate the extent of its commitment to the operation and the external support that would be required in one form or another. Finally, while the national census commission might have to be created before the central census organization could be established, the existence of the central census organization, was thereafter essential to the commission's deliberations on census matters.

### III. The Central Census Organization

19. The question of the organization of the central census office would be looked into later in the report. For the present, it sufficed to say that until a central office was organized and adequately staffed, it would be difficult to prepare a valid census calendar and even more difficult to engage in the implementation of the census. One could in fact say that the census operation had truly started only when a central office had been created. In the literature dealing with the matter, there was general agreement in recognizing some seven main functions in the composition of a census central office <sup>1/</sup>. Those functions might vary in name and content depending on the countries, but they generally corresponded to the following main activities:

- (a) Cartography, for setting the census geographical frame;
- (b) Demography and statistics, for defining the content and enquiry model of the census operation;
- (c) Data processing, for deciding on data capture, storage and retrieval;
- (d) Administration, for assuring a systematic control over all activities that enter into a census and that call for extensive hiring of census personnel and supervision of material and equipment;
- (e) Accounting, for an effective budgeting of the operation and disbursement of funds over time and space and of the purchase and maintenance of equipment and payment of salaries;
- (f) Operations, for laying out the plan by means of which a high volume of personnel and documents can be handled effectively over space and in a timely fashion;
- (g) Communication and information, for resolving the problems which were related not only to publicity but also to the preparation of manuals and other documents required for training, which was an important factor in the implementation of a census.

20. The point to be made was that those functions had to be adequately represented at the planning stage of a census. Failure in that respect could result in omissions or miscalculations that could impair the entire operation and create difficulties over and above those which were normal for an undertaking of such magnitude.

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<sup>1/</sup> Ibid., p. 19, para. 55.

21. It was fully recognized that in developing countries very few national statistical offices could readily supply the census with the range of senior professionals required to plan and implement the census operation. That situation has been met in some countries by drawing heavily on the statistical office senior personnel and/or by counting on graduates of various schools expected to end their formal training in time to be utilized in the census operations.

22. Neither of those solutions could be said to be satisfactory. First of all, national central statistical offices usually did not have the full range of professionals needed to plan and carry out a census. Secondly, such a practice could dangerously impair the conduct of other statistical operations that would still have to be carried out in the course of the 2 to 3 years needed to prepare for and conduct a census. Newly trained professionals lacked practical experience, and the conduct of a census was quite demanding in that respect.

23. It should be remembered that not only was a census a national undertaking but also that it was one that called for a broad range of expertise and statistics and demography were only two of the fields in which expertise was required. Senior professionals in other fields could often be found more readily in other departments. The level of priority a government attached to its census operation in relation to other projects would determine whether or not recourse could be had to such personnel.

#### IV. The Census Calendar

24. In paragraph 50 on page 25 of part I of the second volume of the Report on the Seminar on the Organization and Conduct of a Census, reference was made to two different census calendars as follows:

"The first one has to be prepared during the first phase of the preparation, together with the general programme. The second, final and detailed calendar has to be prepared after the development of the census programme and census organization."

25. The first of the calendars mentioned corresponded to the work plan of the initial project request. It dealt with the general outline of the census operation and was initially needed for preparing evaluations of resources and cost estimates. The second calendar related directly to the actual planning of the census and could be designated as the calendar of operations. It corresponded to the first true census operation and could not be produced until a central organization had been created and staffed with the required senior professionals. The final census calendar was in fact the detailed census programme prepared in such a way "as to reveal the relationship of each element to the other elements in a time sequence as well as the minimum amount of time needed to complete that particular operation and the latest date at which it should be finished in order not to interfere with the activities of other operations" <sup>1/</sup>.

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<sup>1/</sup> Ibid., para. 19.

26. If that statement was analysed closely it could be seen immediately that the preparation of the census calendar, which provided for the implementation and control of the census, was an exacting operation that might well require some 2 to 4 months of continuous work. The following two basic conditions were required for the preparation of the census calendar.

- (a) The clear identification of each of the main functions that had to be performed over the 2 to 3 years it would take to implement the census;
- (b) The designation of senior census officers, who would be responsible for the implementation of each of the main functions.

27. In brief, a census calendar could not be prepared in isolation, nor could it be prepared by a team of experts who were not subsequently accountable for the conduct of the operation. United Nations country census experts could therefore advise on the preparation of the calendar, but they could not make final decisions.

28. The preparation of a census calendar was generally carried out in three phases, which in practice were not always fully separated.

- (a) In the first instance each officer accountable for one of the main functions must prepare that part of the census calendar which was related to his responsibility. Consequently, it was possible to think in terms of a "cartography calendar", a "demography calendar", a "training calendar", a "data processing calendar", etc.;
- (b) The series of individual calendars must subsequently be combined into a general census calendar that took into account the inter-relationships of the various operations over space and time;
- (c) Finally, the various administrative, financial and operational functions that were integral parts of a census must be incorporated into the general calendar. These operations included the purchase of supplies and equipment, the hiring and paying of enumerators, the printing of documents, making accommodations for training and shipping questionnaires and other documents to and from the central office.

29. Such a census calendar could be prepared only by a central census team working in very close co-operation. The complexity of the calendar and time required for preparing it would be directly proportionate to the scope of the census operation to be carried out.

30. The importance of the final calendar could not be exaggerated, and the implementation of the census programme should not be initiated until the calendar had been completed. It is indeed on the basis of the calendar that:

- (a) The initial census project request could be appraised more realistically and corrected accordingly;



- (b) The local government could be better informed as to the true magnitude of the operation and either reaffirm its intention of proceeding with it and of committing the various professional and financial resources that would be required or reduce its scope to conform with its capabilities;
- (c) The various census specialists could make known their requirements with regard to other aspects of the census model, such as the way in which the data processing related to the content, coding and format of the census questionnaire, the way in which the cartography element related to sampling, etc.

### Conclusion

31. In brief, a census calendar was the census in perspective. It took into account the plan by means of which each operation was to be implemented in relation to the series of operations included in the entire project. That plan must in turn conform to the organization that was to be accountable for its implementation. If that organization was to be effective, it must be created and staffed in a way which was legally recognized by the country concerned. It had been found that many countries had not yet produced their final census calendar. Most of those countries had been quite late in defining the legal base of their census and its central organization. In a number of countries some census operations such as cartography, the census questionnaire, sampling design or planning in data processing had, nevertheless, been underway for some time. The true nature and cause of the delays and difficulties experienced by such countries could not properly be evaluated and corrected without the existence of a true census calendar. Delays attributed to the United Nations which were due to the time lag in approving the project request, recruiting country experts and delivering supplies, though important, might still not be the most significant cause for postponement of the operation. While such delays were to be regretted, they could better be coped with or compensated for when a central census organization and related census calendar existed.

### Organization of a National Census Office

#### 32. Outline of National Census Office (NCO) - Divisions, responsibilities and suggested sources of key senior personnel

##### 1. Cartographic Division

###### A. Responsibilities

- (i) Map procurement
- (ii) Preparation of locality lists and place-naming
- (iii) Map reproduction
- (iv) Delimitation of enumeration areas
- (v) Development of the geographic identification code scheme
- (vi) Preparation of the source document for the geographic identification code list for the data input preparation section for the computerization of the master list.

B. Division Chief

The Division Chief should be a cartographer, with experience and background in the following areas:

- (i) Supervising the preparation of maps and charts
- (ii) Reading and evaluating aerial photographs and transforming them into maps
- (iii) Training personnel with or without cartographic experience in map preparation
- (iv) Planning and supervising the field cartographic operations for a census.

C. Suggested source of recruitment of Division Chief - An experienced cartographer from the national geographic institute, the lands surveys department, the Ministry of Agriculture or the geography faculty of the national university.

D. Organization of the Cartographic Division - The cartographic division could be an integral part of the NCO or of the national geographic institute or land surveys department if they existed in the country's governmental structure and if space was available in them for the cartographic operations related to the census.

E. Other key personnel

- a. Drivers
- b. Draftsmen or graphic artists
- c. File clerks.

2. Data Processing Division

A. Responsibilities

- (i) Design of the data processing system for census data, including clerical editing and coding, data input preparation, mechanical editing and correction, etc.
- (ii) Controlling the flow of documents through the data processing operation
- (iii) Data tabulation.

B. Division Chief

The Division Chief should be a systems analyst with experience and background in the following areas:

- (i) Data systems design
- (ii) Data conversion
- (iii) Organization of large data files
- (iv) Data validation and correction
- (v) Tabulation of large statistical data files
- (vi) Familiarity with data tabulation systems such as CENTS, COCENTS and CENTSAID.

C. Suggested Source of recruitment of Division Chief - An experienced system analyst from the National Statistical Office or Central Computer Center.

D. Other Personnel:

- (i) One intermediate-level statistical officer
- (ii) 2 experienced programmers
- (iii) Editing and coding clerks and verifiers
- (iv) Data input preparers and verifiers
- (v) Control clerk(s).

### 3. Census Methodology Division

#### A. Responsibilities

- (i) Development of the methodology of the census
- (ii) Determination of the items to be included in the census questionnaires
- (iii) Determination of the concepts and definitions to be used in the census
- (iv) Development of data tabulation and publication plans
- (v) Development of enumeration manuals and training programmes.

#### B. Division Chief

The Division Chief should be a senior statistician from the National Statistical Office with previous experience in the design and execution of all the operational phases in the conduct of small, medium-sized and large-scale statistical surveys.

C. Other key personnel: One junior statistician from the National Statistical Office.

### 4. Field Operations Division

#### A. Responsibilities

- (i) Direction of the field operations involved in the census, including habitant listing and enumeration and pilot census questionnaire test.
- (ii) Recruitment and training of provincial, departmental, etc., supervisors and enumerators
- (iii) Control of census enumeration documents
- (iv) Assisting in the final check of the cartographic work for the census
- (v) Quality control of the enumeration process
- (vi) Implementation of the training plan developed.

B.1. Division Chief for Administration: Should be experienced in the administration of a country-wide operation. Possible choices for this position might be a civil administrator from the Ministry of Interior, Health or Education or a regional police or army chief.

B.2. Division Chief for Quality Control: This position should be filled by a statistician from the National Statistical Office. He would be responsible for directing the enumeration quality checks and for the final check of the cartographic field work before enumeration.

C. Relations with Administrative Division of NCO: The administrative procedures for this division should be confined to matters directly related to the collection of census data at the provincial, departmental, arrondissement, etc., levels in accordance with guidelines and procedures developed by the Administrative Division of the NCO. Each provincial field office should have an administrative aide who is responsible for the receipt and shipment of enumeration materials from and to the NCO.

D. Other Key Personnel

- (i) Provincial field supervisors
- (ii) Departmental field supervisors
- (iii) Head clerks
- (iv) Enumeration term leaders
- (v) Enumerators
- (vi) Administrative aides at the provincial level
- (vii) Drivers (from the cartographic division)
- (viii) One intermediate- or junior-level statistical officer

5. Administrative Division

A. Responsibilities

- (i) Development of administrative procedures and guidelines for the NCO and local field organization
- (ii) Planning and direction of the logistical procedures for the entire census operation
- (iii) Financial control of census funds
- (iv) Personnel
- (v) Communications
- (vi) Transport
- (vii) Reproduction of census documents
- (viii) Storage and distribution of census documents

B. Division Chief: This post should be filled by someone with experience in directing a large staff composed of persons representing diverse disciplines. A senior military, police or supply official or a senior officer in the Ministry of Finance, Territorial Administration, Health, Education or Agriculture would be ideal for this position. The Chief of this Division must be able to translate the census operations calendar into action in time and space.

C. Other Key Personnel

- (i) Secretaries for typing pool
- (ii) Financial controller
- (iii) Administrative aide (personnel, supplies and equipment, storage, motor fuel control, etc.)
- (iv) Logistician
- (v) Attendance and payroll officer

- (vi) Transport dispatcher
- (vii) Central files supervisor
- (viii) 3 central file clerks
- (ix) Transport mechanic
- (x) Translators.

#### 6. Data Analysis and Evaluation Division

##### A. Responsibilities

- (i) Checking the census data tabulations against errors of content
- (ii) Analysing the final results of the census
- (iii) Preparing the analytical text

##### B. Division Chief

The Division Chief should be a senior demographer from the National Statistical Office. He should be experienced in the analysis and evaluation of tabulated data from small-, medium- and/or large-scale statistical surveys.

##### C. Other key personnel

- a. One intermediate-level statistical officer
- b. One junior-level statistical officer

#### Cartographic preparation

33. Purpose of cartographic work. The immediate and underlying purpose of the cartographic preparations is to provide the census authorities in due course with a document giving the precise geographical location of all areas of habitation with their correct name and a clear indication of their administration affiliation.

34. Assessment of cartography in tropical Africa. Most of Africa is covered only by reconnaissance maps, which are inadequate for census purposes. The administrative divisions have never been plotted in the field, and lists of localities have been drawn up on the basis of information of only approximative value.

35. Basic documentation. Base maps have been hastily prepared, usually on a small-scale. Moreover, since they are prepared for the purpose more of making inventories of natural resources than of studying the human environment, it is not possible to locate inhabited areas on them, and they do not give the names of such areas with enough accuracy and detail.

36. On the other hand the aerial photographs on which these maps are based provide an incomparable amount of information both for locating inhabited areas and for delineating enumeration areas.

37. Methods: The work consists in utilizing the base map and the aerial photographs to prepare a horizontal sketch on an appropriate scale. Since these are only rough sketches, they must be filled in in the field by topographers rather than by surveyors.

38. This field work is the task which takes the most time to complete and is the most difficult and costly part of the operation. It has a direct effect on the quality of the census and on the accuracy of the enumeration.

39. Staff. Draughtsmen and assistants with enough elementary topographical training that they can make a detailed revision of the basic documentation in the field are required in preparing the maps of the enumeration areas.

40. Where national geographic offices exist, they should be given the first responsibility for preparing the census maps, at least in part. Otherwise, the work must be organized and supervised by an expert topographer, who must take responsibility for both the design and the topographical work done in the field.

41. Time required and cost. Preliminary estimates in this connexion have been far too low. The time required to bring the cartographic work to a successful conclusion is somewhere between 8 and 15 months, depending on the size of the country, and an allocation of between U.S.\$150,000 and U.S.\$450,000 is needed.

42. Observations. (1) The expert in Malawi asked whether the budget estimates included the amount allocated for field work. He also raised the difficult problem of delineating an enumeration area in a locality situated on both sides of a way of communication.

(2) The expert in the Sudan said that in the case of the Sudan the cartographer had arrived too late, which meant that only lists of localities had been used.

(3) One of the experts in Ethiopia touched on the difficulties he anticipated in obtaining the co-operation of the geographical Institute of that country. He also mentioned that in his opinion the use of photographs took too much time and required qualified personnel.

(4) The expert in Niger, on the other hand, said that only a new set of photographs would be of any help to him in finding localities and in giving him a clear idea of the way in which the population had been redistributed.

#### Discussion on the use of sampling

43. A brief description of the contents of the chapter on sampling in the methodology document was given by the Regional Adviser on Sampling. After an introductory statement, he discussed the use of long and short questionnaires during a census enumeration. Short questionnaires were for exhaustive count, and long ones were for use on a sample basis. In the countries where a population census was to be taken for the first time, the use of sampling for data collection was discouraged except in cases where it was felt that there would be a considerable amount of gain through its use. The use of sampling in

pilot censuses for quality control at all stages of the census operation, for advanced tabulation and for the post-census evaluation of the results was discussed. With respect to sample design, it was mentioned that in African countries a single-stage cluster sampling with enumeration areas as sampling units should be used instead of a two-stage design with households as second-stage sampling units. As for the size of the sampling units, it was suggested that feasibility was the most important factor to be taken into account. The meeting was told the general views of the African census evaluation mission that had visited four countries - Senegal, Liberia, Dahomey and Ethiopia. Verbal and written comments were then invited.

44. The United Nations expert in the Libyan Arab Republic said that in general he agreed with the contents of the chapter but added that he felt it should have included a brief description of the use of sampling in the household surveys which would follow the population censuses. It was pointed out that a working group on African household surveys would meet in September to discuss all aspects of the household surveys project. The United Nations Expert from the Libyan Arab Republic also pointed out that the use of electronic computers in data processing had greatly diminished the importance of sampling for advanced tabulation.

45. The United Nations expert in the Sudan described some of the problems faced by the census office in the Sudan in using sampling for data-collection in rural areas.

46. The United Nations expert in Ethiopia said it would be wise to spend money to improve the quality of the census during the actual census enumeration instead of spending it to judge the quality of the census after it had been taken. He was definitely opposed to conducting a post enumeration survey for evaluation instead of improving the quality of enumeration during the census.

#### Data Processing

47. The Regional Adviser in Data Processing presented his contribution regarding the technical problems of data processing, noting that such problems could be divided into two categories. There were problems of organization and problems of method. Organizational problems could in turn be divided into problems of planning and problems of implementation. Key points to be stressed included the need to review budgets and estimates, particularly those which depended on rates, such as the rate of editing, of coding and of recording, and also on quantities, such as the quantity of data, the quantity of time needed for computer processing and the quantity of other resources, such as systems and programming staff and supplies.

48. The practical need for assistance from a systems adviser, particularly in the early stages of an operation, was stressed. Advice was needed both for planning and for implementation. Considerable assistance could be derived from experience gained in the pilot census, and the objectives of the pilot census should specifically include the acquisition of such experience.

49. As far as method was concerned, there were two kinds of problems, one involving the major decisions on method which had to be taken and the other involving the detailed method specifications which were based on those decisions. Problems in the first category were clearly of critical importance. Choice of recording method was now becoming more difficult, because data capture methods other than the conventional one of card punching had now become more feasible and more competitive both in time and cost.

50. Specifications involved a good deal of the subject specialist's time and work. Such specifications included manuals for editing, for coding, for clerical handling of reports from the computer on verification procedures and for tabulation process details.

51. Two major needs at present were detailed advice concerning data capture in the African region and some measure of standardization of recommendations concerning pretabulation processing, i.e., census data editing and correction procedures. The latter was a formidable problem which called for a somewhat unrealistic generalization covering a vast range of requirements. He had tried to narrow the problem, in an attempt primarily to meet the needs of smaller countries and had managed to draw up a model specification which he hoped would go some way towards filling the gap caused by the absence of a ready-made programming package. His specification was a first attempt and could profit from elaboration and clarification, but the ideas underlying it could be found useful even now and he was therefore issuing the first draft immediately.

52. The problem of offering practical, rather than general, advice on data capture was essentially simple but considerable travel and time were required to determine local conditions, local manufacturers' support, costs and so on in each of the countries concerned. He had been considering the alternative of an analysis sheet to be prepared locally, which would help but would not cover new equipment and techniques very easily. The problem was in some ways a general data processing problem and was affected by the volume, style and scheduling of census data. The view could be taken that solutions should not be sought solely within the ACP advisory service. He would be leaving that matter for consideration by his successor.

53. In the discussion the census expert in the Libyan Arab Republic said he supported the view that a badly managed computer processing plan could take longer to achieve results than conventional desk or punch card work and that he could give some practical examples. Experience in the Libyan Arab Republic showed the need to take prior advice on data capture. Although the latest equipment was available in that country the results had been very disappointing. Moreover, while the tabulation package cut out a lot of work for the programmer, it still left a considerable task for those specifying the tables.

54. The expert in the Sudan said in connexion with the recording rates which had been mentioned, that an allowance should be made for absenteeism, which could reduce production considerably. Absenteeism had been known to be as high



as 30 per cent. He had had experience in Zambia with the optical character reading method mentioned by the Regional Adviser in Data Processing. Success had been determined by an enormous planning effort based on extremely early decisions. He thought that systems and programming assistance should come from one man. Where there was both a systems analyst and a programmer, there could be dangerous differences of opinion.

55. The census expert in the Congo reported on the processing work done in Congo, where, despite initial difficulties, the Cents package had been installed without outside aid. The edit programmes were working satisfactorily but it should be noted that they had been based on a pilot survey exercise conducted in advance.

56. The census expert in Nigeria warned against expecting 100 per cent availability of machines. Margins of as much as 50 per cent might be needed.

57. Summing up, the Regional Adviser in Data Processing said he was pleased to hear reports from experts in countries with operational experience. Those reports bore out his general recommendations and also lent practical detail, which could be studied with profit by governments which had not yet entered the processing phase.

Experts' reports on individual census operations

Central African Republic

58. The present census date was 3 December 1974. According to the United Nations Census Adviser, a more sensible time would be March 1975, although the present census date could be met if the Government showed a keen interest and provided all the co-operation needed in carrying out the census operations. The census adviser was confronted by three main problems. First, the Government was slow to respond to the needs of the census office. In that connexion Ministry of Education had not showed a readiness to cooperate in providing teachers to assist in the enumeration working during the pilot census scheduled to start on 10 September 1974. Second, there was a shortage of competent staff to carry out in time the mapping work and to delineate the enumeration areas. The third problem was that of getting enough vehicles for the field work although a sufficient number of vehicles for carrying out the cartographic work could have been provided by the Government.

59. In reply to questions, it was stated that a list of villages had been prepared for the whole country.

60. A discussion took place about the lack of co-operation shown by Governments in some other countries. Mention was made in this connexion of a very useful visit by the ECA Regional Advisers to Cameroon to convince the Government that the United Nations insisted on its co-operation in carrying out the census project.

61. A second United Nations population census expert was now posted in the Central African Republic.

Chad

62. The census had been tentatively set for December 1975 or January 1976. However, if the cartographic work moved slowly, the date could be moved to March or April 1976. The December-January date had been selected, first, because most of the field personnel would be drawn from the Ministry of Education and it would be feasible to take advantage of the 2 weeks' vacation generally given and, second, because mobility of the population would be at a minimum during those months.

63. The taking of a census was provided for by a decree which placed the responsibility for it under the Department of Statistics in the Ministry of Planning. However, that decree had never been implemented for lack of funds. The draft of a presidential decree had been prepared for the proposed census but had not been signed since the budget contribution from UNFPA had not been approved. Nevertheless, its approval could be obtained at any time. A technical census committee had in fact been created in April 1974 by presidential decree.

64. There was complete map coverage for Chad, but a lot of office and field work had to be done to make the maps appropriate for census work, and funds for purchasing maps and other cartographic instruments and materials had not yet been approved. The approval of the budget for cartography was important since a delay in the start of field operations could mean the postponement of the census date.

65. The use of sampling was still under consideration and would be discussed with the Regional Adviser when he came to Chad in October.

66. The plan of the census organization and the estimate of personnel requirements had been completed. A preliminary canvass of available technicians and administrative personnel had been carried out in the statistical office and other institutions, and it was now evident that the central staff would be recruited mostly from the statistical office itself. The lack of experienced technicians presented a serious problem, and a series of training programmes was being prepared for all levels of personnel. Some of the key personnel would actually learn while on the job.

67. The questionnaires were being prepared and would contain the basic recommendations made under the African census programme. Two sets of questionnaires would be prepared and tested during the pilot census scheduled for January 1975.

#### The Congo

68. The census expert in the Congo reported on the population and housing census of 1974, which had been the first exhaustive census of its kind conducted within the country. A pilot census covering 60 thousand inhabitants had been in the district of Lekoumou in March 1972. The cartographical work and delineation of enumeration areas had been achieved within a period of 12 months. The training of senior staff and of enumeration personnel had been organized in the 2 months preceding the enumeration, which began on 7 February 1974.

69. The original plan to complete enumeration for the whole country within 20 days had had to be modified because of a shortfall in transport. In the first and shortest enumeration phase 81 per cent of the total population had been covered. In the second phase more inaccessible districts, where communications were considerably more difficult, had been covered.

70. The preliminary results had been published on 27 July 1974. They showed the number of households covered, persons present, persons absent and visitors (by sex), and the number of live births and deaths in the previous 12 months, also classified by sex. There was clear evidence of the undercounting of deaths but for the other totals there was close comparability between administrative and enumerated totals.

71. Coding and card punching was now under way, and the CENTS tabulation package had been installed and successfully tested. Publication of the final results was planned for November 1975.

72. In general, the conceptions and methodology of the Congo census were considered to measure up to those of a modern census operation, adapted technically to specific national conditions.

73. Like any census the one in the Congo had been a large-scale operation, in which a continuing series of problems had to be met and overcome. Because it had been necessary to order the questionnaire a full year in advance to meet the needs of the National Printing Office it had not been possible to give its form and content as much study as desirable prior to publication, and changes recommended later by United Nations experts were necessarily minor and limited.

74. The really major problem had been a shortage of transport. Only about one third of the number of vehicles originally planned for had actually been available for the enumeration. The 50 mopeds supplied by the United Nations had been inadequate, and a good deal of improvisation had been required. The transport shortage had had a direct effect on collection, causing significant delays.

75. The publicity for the census was considered a success; it had contributed significantly to the overall success of the operations. The progress of enumeration had been covered by a film documentary which had appeared on television and was available to other interested African countries.

76. A number of questions were asked, and the census expert in the Congo said that the documentary film would help to answer many of them. For instance it showed how pygmies had been contacted through village heads. There had been trouble with only one group, a religious sect numbering about 4,000 who had refused to cooperate. Special methods had been used to obtain the missing data. In answer to another question, she said that a perfect count of the population could not be obtained through identity cards, which had been inspected only after an initial enumeration interview.

#### Dahomey

77. The United Nations Census Adviser in Dahomey reported that the census currently being prepared was the first to be taken in Dahomey although administrative counts had been made previously. Although the original request had envisaged a census in March 1973, the date had been moved first to March 1974, then to March 1975, and recently it had been decided to aim at a date later in 1975.

78. A United Nations census project had been approved. Counterpart funds were available in theory but not in practice. It was hoped that counterpart funds would be available for use from September on.

79. Four decrees of 1973 authorised the population census and detailed various arrangements for it, such as the membership of the census committee. However, there were some gaps in the legislative text; and in general, there were ups and downs in the arrangements. No premises had been supplied for a long time. Delays had occurred in organizing the technical activities. Amendments to the legislation had gone to the President's office in June 1974, but had not yet been approved. Many questions relating to all aspects of the census still had to be resolved.

80. A questionnaire for application to the total population has been drafted. A sample survey comprising questions about fertility, mortality and the like, would follow.

81. The position with regard to cartographic preparation was satisfactory. Map coverage of the country was complete, and a United Nations census cartographer had arrived on a 12-month assignment earlier in August.

## Ethiopia

82. The following phases of work were envisaged for the population census of Ethiopia:

1. Rural subdivision listing and formation of enumeration areas with attendant mapping work.
2. Urban house-listing and formation of enumeration areas with attendant mapping work.
3. Rural population census (95 per cent of the enumeration areas to be covered with a short form and 5 per cent with a comparatively detailed form, both to be conducted simultaneously.)
4. Urban population census with detailed form.

83. The mapping work in the rural areas was expected to require about 600 men and about 15 months to complete. When the mapping work had been completed, the 600 men would act as assistant census officers.

84. The house-listing and formation of enumeration areas in the urban areas was to be undertaken simultaneously with the rural mapping work.

85. Each area was to be enumerated by one enumerator; thus it would require about 40,000 enumerators and 5,000 supervisors to conduct the census. It was proposed to use mainly high school students as enumerators and school teachers as supervisors. That would mean closing the high schools for the 2 to 3 weeks immediately following the Christmas vacation in January 1976. The first phase of training of enumerators would be completed in the respective schools.

86. The entire administrative machinery of the Ethiopian Government must be mobilized for the purpose of the census. Thus, training courses and conferences would have to be undertaken at various levels.

87. An intensive publicity campaign would be undertaken 13 months before the census date and would gain in intensity as the census date approached.

88. The most important change in census methodology had been the substitution of the canvasser method of enumeration for the group enumeration method, which had been used extensively in African countries at an early stage of development and had led to underenumeration, inferior quality of the data collected and considerable confusion.

89. In the beginning of 1974, a pilot census had been conducted in Ethiopia for the purposes, inter alia, of comparing the results obtained from group enumeration and from a house-to-house count in 38 sampled subdivisions in various provinces of the country. The outcome is shown below:

<u>Number of households covered</u>		<u>Number of persons covered</u>	
<u>House-to-house</u> <u>count</u>	<u>Group</u> <u>enumeration</u>	<u>House-to-house</u> <u>count</u>	<u>Group</u> <u>enumeration</u>
13 745	11 909	58 865	49 992

90. The undercount amounted to 15.4 per cent with respect to households and 17.7 per cent with respect to individuals and clearly ruled out the possibility of using group enumeration under conditions prevailing at the time of the pilot census. Data on size and composition of households and on the age of their members obtained from the group enumeration had also been found to be most unsatisfactory.

91. The second most important change in census methodology, the introduction of preparatory mapwork in the rural parts of the country. The absence of such mapwork would lead to underenumeration and confusion during the census enumeration even if the convasser method was used. In the pilot census, some of the households found in the group enumeration were not found during the house-to-house visits. It was likely that many households had been missed both in the group enumeration and in the house-to-house count because of the absence of sketch maps of enumeration areas. The enumerators had been guided to houses by local headmen, which was too uncertain and subjective a method for a population census, particularly as the concept of subdivision in Ethiopia was extremely complicated. Extensive preparatory mapping work, consisting of making sketch maps of enumeration areas would therefore be necessary. In addition, an extensive programme of pilot studies on ways of counting nomads, improving census forms, questionnaires and instructions and elaborating census techniques would be worked out.

92. The time schedule had also been changed. Under the earlier plan envisaged the census was to take place by November 1974 whereas the present plan is for the census to take place in January 1976 as indicated earlier.

93. It would be desirable to request additional UNFPA funds for the utilization of 600 people to supplement the cartographic field staff for 9 months.

94. The direct cost of the census to the Ethiopian Government had been estimated at Eth. \$ 1,705,418. The direct cost to the United Nations was estimated at Eth. \$14,182,819 making a total direct cost of Eth. \$ 15,888,237. Assuming that the population size of Ethiopia was 30 million, the per capita cost of the census would be about 27 cents in American currency, which was believed to be a reasonable figure, considering the difficult topography, the lack of infrastructure and the fact that no census had been undertaken previously. The direct cost to the Ethiopian Government of the group enumeration would have been Eth. \$1.6 million. Thus, the new plan did not involve any significant cost increase for the Government although it involved an increase of about Eth. \$7 million for the United Nations.

#### Upper Volta

95. The expert in Upper Volta said that since he had not taken up his assignment until 1 July 1974, he would be very brief. After his arrival in Upper Volta, he had been briefed as to the General Population Census Act adopted in May 1973 and the decree of March 1974 establishing the National Census Committee and proclaiming the World Population Year. The Committee, which was under the jurisdiction of the Minister of Planning, Rural Development, Environment and Tourism, was responsible for facilitating the implementation of the Census. Its work was carried out by the Office of Statistical Studies and Surveys in the Department of Statistics and Computer Sciences.

96. The present situation in Upper Volta was as follows:

- (i) The office responsible for preparing the census had drafted instructions as to the methods to be employed, an enumeration area manual a questionnaire, codes, instructions for census-takers, documents governing the census and all the documents for the post-census survey;
- (ii) Cartographic work, including the preparation of a list of villages in each administrative unit for entry on the maps, had already begun, and the enumeration areas were being delineated;
- (iii) The enumeration area manuals, i.e., the census questionnaires, had already been printed, and the questionnaires for the post-census survey were ready. However, the final dummy would not be sent to the printer until after the pilot census. It should be noted that the questionnaire had been prepared in conjunction with the Governments of Mali and Niger within the Liptako-Gourma Authority;
- (iv) The pilot census was scheduled to take place in December 1974. The delay in the date originally set was due in part to the territorial reorganization decreed by the Government of Upper Volta on July 1974 and in part to delays in the aid expected from UNFPA.

97. The UNDP Resident Representative had recommended the adoption of a more flexible financial system for administering the programme. As things now stood, an administrative officer assigned to the census programme was to be recruited.

#### Ivory Coast

98. The legal basis for the census consisted of a decree promulgated on 1st February 1974. The ordinance for the pilot survey for the setting up of the census office and the supporting organisms was effected in May 1974.

99. The Central office was created immediately after the decree but had not come into operation until July 1974. The interministerial Committee had already met. The National Committee would meet after the pilot census has been taken and the final census calendar had been established.

100. UNDP had approved the first half of the 1974 budget, and the request for the second half had been submitted on 30 July 1974. The Government budget had been substantially increased. It had now been approved, and funds had been released from June 1974.

101. There had been problems with senior staffing, involving delays in recruitment. The organisation of field operations was currently under way. Publicity was being conducted as part of a subregional programme.

102. The census expert in the Ivory Coast reported that a pilot census was currently underway in that country. It had started on 18 July and would be completed on 10 August. It was hoped to complete analysis of the data in September or October.

103. The most troublesome point was slippage and delay in the overall census calendar, much of which he associated with funding problems.

104. There had been some delay in reconnaissance and cartography but it was hoped to finalize the calendar within the next few weeks. Another urgent problem was the impending departure of the census cartographer, who would leave in October unless UNDP come to an early arrangement on the matter.

105. A vast amount of work had gone into budget assessment, reviews, revisions and related correspondence, which had been attended to while having to cope with continuing problems of recruitment and training and delays in deliveries of equipment and supplies.

106. Problems had arisen not only over the release of United Nations funds but also over the question of local purchase. Timetables were obviously very tight, and the time needed for duty free importation clearance was necessarily very lengthy. Suggestions for local purchase attempted to take price rises into account. One of the effects of inflation was that goods tended to disappear from the market in anticipation of higher prices to come. It was particularly desirable to permit local purchase of paper. Authority for the purchase of two offset-machines with overtime bonus payments for operators had been sought without much success despite lengthy correspondence.

107. Despite the delays already mentioned which had led to slippages at so many points, he was still sure that the overall delay would finally be found to be no more than about 2 months which must be considered a tribute to those who had cooperated in facing up to the obstacles presented.

#### The Libyan Arab Republic

108. The census expert in the Libyan Arab Republic explained that he had been on leave when the invitation to the meeting was issued which left him unprepared, especially so far as an up-to-the minute report was concerned.

109. He had arrived in the Libyan Arab Republic in 1972 in the role of senior statistician expecting a population census to be taken in 1974. By administrative decree the census date had been advanced to 1973 and had been combined with an agricultural census. Despite the shortage of time for preparatory work, the census had been successfully taken largely because of a high national level of honesty within a disciplined society. The enumeration date had been selected to correspond with the school holiday. Publicity for the census consisted of highly distinctive posters widely displayed, combined with a campaign conducted through the religious leaders.

110. An important practical measure had been the addition of 3 hours to the working day of everyone working within the Census Organization. That measure was still in effect and had been a contributing factor to the publication of a summary report containing a surprising amount of detail only 3 weeks after the enumeration. There was no shortage of funds in the Libyan Arab Republic, and the Government had been able to embark on two ambitious programmes, one being an advanced computerization programme and the other a publication programme.

111. Unfortunately, lack of prior experience in computerization had led to delays in data recording despite the use of the most up-to-date equipment. There was considerable political pressure for early detailed results, but on a practical estimate they seemed unlikely to appear before the end of the year.



112. The ambitious publication programme constituted a further problem, which was a burdensome one for the United Nations expert. It included, for example, a census atlas, census abstracts and a series of technical monographs. Useful advice had been obtained from the African Census Programme regarding the scope and content of the monographs.

113. He regarded critical evaluation and review of the census data as his moral and professional duty. In earlier contacts with ACP he had been led to doubt whether there was active support for his view in that respect and he particularly welcomed the present methodology paper which laid stress on the need for such activity.

114. Referring to certain limitations in regional advisory support, the census expert said that although the Libyan Government welcomed concrete advice, it was not in favour of expert missions which resulted only in general recommendations. Local circumstances had to be taken into account. Visitors needed time to settle down. For those reasons the Libyan Government had recommended that future missions should not be of less than three weeks' duration.

#### Malawi

115. The National Statistical Office of Malawi was currently carrying out a pilot census in order to test procedures and make feasibility studies in preparation for a main census which was scheduled for August 1976. Work on the pilot census would continue until March 1975, when preparations for the full census would begin.

116. The pilot census was being conducted in nine areas of the country, three in the Northern Region, two in the Central Region and four in the South. The areas chosen were based on the enumeration areas used in the last full census in Malawi which had been held in August 1966.

117. The first area comprised 12 enumeration areas in the Chiradzulu District of the Southern Region. Chiradzulu was a densely populated, small agricultural district situated near Blantyre, the largest city of Malawi. A "quick-count" and field-mapping had been carried out, and then in a return visit, the enumeration had been made.

118. The second area was also in the Southern Region and consisted of a small trading area and township called Liwonde, situated on the Shire, Malawi's largest river, which flowed from Lake Malawi to the Zambezi. Liwonde had been designated as the site of a small industrial development project to be financed by the Federal Republic of Germany. The seven enumeration areas of Liwonde had been "quick-counted" - (i.e. merely dividing the population into males and females) and then enumerated at a later date.

119. The third area was composed of four enumeration areas in Lilongwe in the Central Region, which was currently being transformed into the new capital of Malawi. Two of those enumeration areas were in the old commercial part of Lilongwe and two were situated in what was known as the Capital City Development Area, just to the North of the old town, where new ministerial offices, low- and high-density housing estates, work camps, traditional housing and villages all occurred within the same area. A "quick-count" and map-revision had been carried out and the areas had recently been enumerated by staff from the Statistical Office.

120. The fourth area to be investigated comprised 12 enumeration areas in various parts of Salima District in the Central Region. Salima was by Lake Malawi and was therefore developing rapidly. A large agricultural project called the Salima Lakeshore Development Area was located in it. The "quick-count" and field map-revision had been carried out a few months previously and the enumeration was currently being conducted by students, teachers and national statistical office staff.

121. Since part of the Chikwawa District in the Southern Region came within the Shire Valley Agricultural Development Project, the area was growing rapidly. A total of 15 enumeration areas were currently being "quick-counted", and field map-revision was under way. Enumeration would take place immediately afterwards. Another team of enumerators was currently investigating 11 enumeration areas in the Nsanje District in the far South of the country. That district was also part of the Shire River development scheme.

122. There were plans to cover the Chitipa District an underdeveloped, thinly populated mountainous area in the extreme North of the country, in the near future. Karonga District, which had both a medium-density agricultural population along the lake-shore and a low-density population inland, would also be covered.

123. Finally, if there was time to do the necessary field work before the rainy season began in November or December, Mzuzu the capital of the Northern Region, would be investigated.

124. Malawi was completely covered by maps of varying scales. The basic series of the country comprised 159 sheets at 1:50,000. Most of the existing maps were 10 or 15 year old, although those for the area around Lilongwe and those for the far North, were relatively up-to-date, and a few sheets were extremely good. The main towns-Blantyre, Lilongwe, Zomba and Mzuzu - were covered by large-scale plans at scales of 1:10,000, 1:5,000 and 1:2,500, which owing to Malawi's rapid development, were rather out of date. A few other development and urban areas were covered by large-scale maps, but such coverage was whether extensive or up-to-date. There was also complete aerial photography coverage of Malawi, which had been effected in the period 1968-1972.

125. A member of the census expert's staff had been making locality-lists and carrying out place-naming exercises periodically since the 1966 census but only when there was no other Statistical Office work to do and therefore there were errors and some of the information was out of date. However, his efforts had proved extremely valuable in producing census maps. Insofar as the main census

was concerned, the District Commissioners in each of the 24 Districts of Malawi had recently been contacted and asked to send up-to-date lists of the villages in their districts, which would be compared with the material available.

126. The maps produced for the 1966 census had been mere sketches, with no scale or orientation and very limited detail. The census expert was therefore producing a set of maps for use in the pilot census, and he hoped to continue that work for the main census project.

#### Mauritania

127. The United Nations Census Adviser in Mauritania, reported that according to the original plan, the census of Mauritania was to be on a limited scale, 65 to 70 per cent of the population being counted by sample. However, no sample frame existed. A new plan, involving a 100-per-cent count, had been adopted in April 1974, and a uniform questionnaire with about 16 questions was to be applied to everyone.

128. The main census would be held in January 1976, and the enumeration of the nomads would take place the following months. The field work preceding the enumeration would be carried out in three stages, viz., cartographic work, house listing in the towns and census tests.

129. The boundaries of the administrative divisions had been defined and marked on maps; the urban areas had also been defined. There were maps of the rural areas, on a scale of 1:200,000 and sometimes 1:50,000, but they were not very accurate, and many of them were out of date. Since they were physical maps, they did not indicate the whereabouts of the nomads, many of whom had been displaced by the drought in any case. Work on village lists was currently under way.

130. The nomad enumeration must depend largely on the chiefs of collectivities, who, after being listed, would be consulted about the households in their collectivity. The information obtained would then be tested on a sample basis. Communication with the chiefs was not easy. It was essential to convince them, and the general public, of the usefulness of the census through a publicity campaign.

131. Office equipment and vehicles had been ordered, and it was hoped that the vehicles would arrive on time as, owing to climatic conditions, any postponement of the census must be by a year.

132. The budget is being revised on the basis of a 100 per cent count.

133. The authorities in Algeria had expressed a willingness to process the census data obtained for Mauritania, but it had not yet been decided how to transcribe the data for transmission to Algeria.

Niger

134. On his arrival at Niamey 2 and a half months previously, the expert in Niger had found that the census project was still in its initial phase since the Director of Statistics had waited for him to come before getting the work under way. The request had been sent to UNFPA, and the act authorizing the population census had been promulgated on 1 April 1974. Otherwise, nothing had been done. A common questionnaire and a list of the tables to be published had been prepared within the Liptako-Gourma Authority and had been accepted by the three member countries.

135. Since June the following work had been embarked upon:

- (a) The drafting of a bill for the establishment of the National Census Committee, the departmental census committees and the Census Bureau and appointing the national co-ordinator. The bill had been sent to the competent authorities for their approval prior to its submission to the Office of the Minister of Development for promulgation;
- (b) The preparation of an organization chart for the Census Bureau;
- (c) A building had already been selected. It would be necessary to wait until it had been officially designated and evacuated by the office occupying it at present, which were in the process of moving;
- (d) The ordering of vehicles, including five Land-Rovers and one Renault-4, which would be used as the need for them arose;
- (e) Following the mission to adjust the budget, it had therefore been possible to submit to the Office of Technical Co-operation all the documents and forms required to release the funds needed to purchase the first supplies and office equipment.

136. It appeared that the terms of the original request had to be completely revised, which would cause great difficulties due to the nature of the country.

- (a) Technical difficulties: The special composition of the population of Niger and conditions prevailing in the country (nomads, semi-nomads, sedentary populations, large-scale seasonal migrations, effects of the drought) would make the population census unusually complicated, and some thorough preliminary studies would be needed before a decision could be taken as to the methods to be employed in the census and the preparation of a census calendar. Moreover, there was no data processing equipment. Because of the variety of equipment needed, the amount of money required to meet the costs incurred and the time it would take for the equipment to be ordered and delivered, it was assumed that it would not be available until 1976 and would not be put into operation before the second half of that year. The enormous size of the territory, its unusual topography and the low density of its population presented serious problems of census cartography. The cartographic work, which would of necessity be long

and costly, could not be carried out until the appropriate technical (methods and possibilities) and budgetary studies had been made by experts competent in the matter.

- (b) Staff: The country was beset by a shortage of qualified manpower, especially in technical fields, such as statistics, cartography and data processing. It would in all probability be necessary to count on foreign expertise to a large extent. Since the literacy and school enrolment rates were very low and those who were literate were not all up to the standard required, great difficulties could be anticipated with regard to the recruitment, training and job orientation of field staff. The questionnaire and the methods to be employed in the census should be adapted accordingly.
- (c) Budgetary problems: The worsening of the drought in the Sahelian countries and the implementation of an effective but costly policy to provide food to the stricken people were weighing heavily on the budget of Niger. The new Government, which had come into power in April 1974, had been forced to adopt an austerity budget in order to tackle the problems caused by the drought. The whole census project might therefore have to be re-examined in that it would be necessary to redistribute the expenses incurred in taking the census (which were bound to increase) between UNFPA and the Government. Consequently, the revised project would not be submitted to UNFPA in the immediate future. The expert would do his best to see that the project document was submitted some time during December 1974.

137. At the end of his statement, the expert gave a broad outline of the various investigations he had undertaken concerning the size and nature of the territory, the administrative and territorial infrastructure, the habitat, styles of living, the distribution of the population among nomadic and sedentary groups and migratory movements. The findings of those investigations would be included in a technical report, which was currently being drafted and would be sent to Headquarters some time in November 1974. The report should make it possible to identify the chief technical difficulties which those in charge of the census would encounter, to formulate an overall census strategy and to decide on appropriate techniques and procedures for conducting the census.

#### Nigeria

138. The United Nations Data Processing Adviser in Nigeria, reported that a population count had been taken in Nigeria in November 1973. A check planned for 2 weeks later had not been carried out, and after 5 months, a total population of 79.76 million had been announced. That figure immediately aroused controversy, and so far it had not been officially accepted.

139. A census data review committee had been set up to validate the provincial results. A post-enumeration survey had been conducted in August 1974, using a 5 per cent random sample of the 120,000 enumeration areas.

140. The foreign census staff was limited to five, including data processing and cartographic advisers from the United Nations, a general processing adviser from India and a data processing adviser from Canada.

141. Some organizational weaknesses were apparent. The office had not been completed on time, and after the enumeration, processing staff had worked in corridors and courtyards. The preparation of enumeration areas had not been completed despite extended working hours, and improvisation in the field had resulted. The geographic reference system had not been completed, and all the questionnaires for particular towns and villages still had to be identified. Pre-computer processing was being carried out by people gathered from many sources, and leadership and control were lacking. In general, the central organization was inadequate, and the magnitude of the operation was not fully understood.

142. Matching of the post-enumeration survey records with the original questionnaires might not be easy, as the latter were difficult to identify.

#### Somalia

143. The date of the census in Somalia was 1 February 1975. The Government intended to make a complete enumeration of the settled rural and urban populations and of the nomadic population. The original plan to enumerate the nomads on a sample basis had been revised and the budget had increased accordingly. The United Nations Census Adviser hoped that OTC would give due consideration to the importance of and need for the revised plan and that funds would be made available for carrying it out.

144. A publicity campaign was already under way in both the settled and in the nomadic areas. Problems still existed where cartographic work was concerned. The United Nations Cartographic Adviser was leaving soon, and it was hoped that the major part of the work would be finished by the time he left. A candidate for the post of data processing adviser had been proposed by the United Nations and accepted by the Government. Lack of competent personnel in data processing might present very acute problems.

145. As for the methodology of the enumeration, the house-to-house canvassing method would be followed for the settled population. Six thousand enumerators would do the work in a period of 7 days. Where the nomadic population was concerned, a list of waterpoints had been prepared and was being continually updated. It was expected that the total number of waterpoints was about 5,000. Enumerators would be sent to them and would enumerate all nomadic households who come there during a 14-day period. Since animals must be watered at least once in 14 days, that method would produce an exhaustive enumeration of all the nomadic households in the country. Eight thousand enumerators would enumerate the nomadic population. Enumerators of both the settled and the nomadic populations would be selected from a group of 30,000 teachers and students who were currently conducting a 5-month literacy campaign among the nomads.

146. Extensive pilot censuses had been conducted to determine the methodology to be followed.

147. In reply to a question, it was stated that since the Somali language is spoken and understood all over the country, the publicity campaign would pose no particular problem.

148. It was also mentioned that the Somali Government wished to conduct a complete enumeration of the nomads in order to avoid any controversies that might arise if only a sample enumeration were carried out. The United Nations Census Adviser in Somalia had been in constant touch with UNDP and OTC so that a proper appraisal of the revised budget for the complete enumeration of the nomads could be made and financial assistance from the United Nations might be made available to the census project.

#### The Sudan

149. A population and housing census had been held in April 1973. Very little time had been available for census preparation, and it was therefore not possible to study in detail the problems and the difficulties involved. Although it had been known that large-scale migratory movements took place in the Sudan in March and April, the full significance of those movements had been grasped for the first time during the census. The timing of the enumeration had been very unfortunate.

150. It had been expected that the enumeration of nomads would present formidable obstacles but not that the work involved could not be handled by enumerators temporarily engaged for the period of the census. In particular, civil-servants, such as teachers, whose loyalty was to their own Ministry, were not suited for such arduous work. Moreover, in a census operation every enumerator or supervisor should have approximately the same amount of work if they are to be paid the same. If there were substantial differences in the work, the pay should also be different. No differentiation had been made in the scale of remuneration for enumerators dealing with nomads.

151. Another problem had been the absence of adequate maps of the enumeration zones. The mapping effort before the census had been devoted mainly to the urban areas. The urban area maps had been useful, but it would have been possible to manage without them. In the rural areas village lists had been used rather than census maps.

152. The enumeration of the settled population had in general become satisfactory, the main problem area having been the enumeration of the cotton-pickers in the Blue Nile province and of nomads in all parts of the country. Separate post-census surveys had been undertaken, and the under-enumeration of cotton-pickers and nomads had been corrected.

153. The census data had already been coded and was now being punched and processed. Work on programming the data analysis was well under way. The Census Office expected to start getting province-by-province tabulations beginning in September 1974 and to complete the tabulations by the end of the year.

154. The Census Office was confident that the population of the three Southern provinces had been well covered. However, it had been suggested, on the basis of the 1955-1956 population sample census estimate and an assumed rate of growth, that there might have been some under-enumeration. In fact, on the basis of a study of the coded data based on the pre-edit computer reports, the United Nations Census Adviser felt that there had been slight over-enumeration in some areas.

In reply to a question, he told the meeting that, on the basis of a subjective assessment of the quality of the census, the over-all rate of under-enumeration might have been 3 to 5 per cent.

155. During the discussion which followed the delivery of the country reports, cases of unusually large households were mentioned in connexion with the pilot censuses conducted in Somalia. In some areas of the Sudan also, a surprisingly large number of households had been found to comprise ten people, and the data were therefore suspected to be fictitious.



Detailed discussions by selected experts of individual project experiences

Enumeration of nomads

156. The enumeration of nomads in African countries was complicated by the fact that there were considerable variations between one country and another. The problem was of importance in The Sudan, The Libyan Arab Republic, Mauritania, Chad, Niger, Ethiopia and Somalia. However, except in Somalia, it was possible to discern a common thread in the structure of the nomadic social groups. It appeared that an approach broadly based on the pattern followed in the Sudan could be adopted for the enumeration of nomads. Even in Somalia, where such a social organization did not exist, there was a link between groups with common ancestor. The only countries to have conducted a census of nomads were the Sudan and The Libyan Arab Republic. Although it was generally agreed that the Sudanese approach would be suitable, a number of difficulties of a minor nature were spotlighted, which drew the attention of the participants to the fact that even if a general pattern could be adopted, it was necessary to take local variants into account in conducting a census satisfactorily.

157. Certain reservations were expressed, particularly as to the definition of a population as either 'de facto' or 'de jure' during an enumeration. It was the opinion of the meeting that it would be futile to try to define a nomadic population as 'de facto' or 'de jure'. Perhaps it would be necessary to study the problem. It would be desirable to go back to the original concept of a census enumeration as the counting of people with the borders of a country. It was possible to think of all enumeration of a settled population as being either 'de facto' or 'de jure' but where nomads were concerned it was total counting that was important. It might be possible to publish total population estimates of various administrative units on the lines followed in the Sudan, i.e. tabulating the settled population and adding the number of nomads counted on the date of the census of the nomads and the number of settled and registered nomads on the understanding that registered nomads might constitute the 'de jure' nomad population. In any case, it was acknowledged that some thought should be given to the way in which the data was presented.

158. Considerable attention was focused on the definition of 'nomad', 'semi-nomad' and 'settled household'. In general countries were applying the simplest definition; i.e. a nomad was considered to be someone without a fixed residence who did not participate in agricultural activities. It was pointed out that some households were settled for some months in a year and nomadic during the rest of the year, so that the total number of nomads in a country would depend on the time of year when the census was taken. It was necessary to bear in mind that the most important thing was to count the people in a country. The classification into nomadic populations and settled populations was of secondary importance.

159. It was felt that further discussion would be necessary before definitive procedures for the enumeration of nomads could be recommended. The experience gained so far was encouraging and indicated that it would soon be possible to handle the problems involved with much more confidence.

Problems in organizing a census office in Chad

160. Responsibility for taking a census was by law vested in the Bureau of Statistics in the Ministry of Planning. The Bureau did not, however, have sufficient technical and administrative personnel to carry out a general census.

161. The upcoming census would be the first general census and those who participated in it would be having their first experience in census taking.

162. Consequently, the role of the expert was important and would require a lot of initiative, imagination and patience. Not only must he assume full technical responsibility, he must also share the administrative duties, especially in the initial stages of the operation to ensure the smooth functioning of the work. In other words, in the beginning he had to be the driving force behind the whole organization and the various operations involved.

163. Since the census would be followed by a series of demographic surveys, it had been decided not to organize a separate office but to build a separate unit within the Bureau of Statistics, which could take charge of the surveys as well as of the census.

164. Certain basic principles had been followed in building up the organization. First, the organization was to be built up gradually in a way which would depend on the needs of the various operations and on the availability of qualified personnel. Second, the organization should be flexible so as to permit the immediate solution of problems that might occur. Third, a long-range view had to be taken in that the objective was not only to take a census but also to train a corps of technicians capable of undertaking censuses and other statistical surveys. Fourth, the census expert must assume full technical responsibility and share some administrative duties especially during the critical phases of the operations, and fifth, the organization should be built up in the light of budgetary considerations.

165. The census office would constitute five sections, whose respective responsibilities would be administration, cartography, methodology and technique, field operations and tabulations.

166. Meeting the personnel requirements of the census office was a very serious problem in that it would not be easy to obtain qualified and responsible people. It was very easy to find men who were either qualified or responsible but very difficult to find people with both qualifications, especially in a country where there was a dearth of trained statistical personnel.

167. The first level of personnel including demographers, the statisticians and the administrators would have to be drawn from the Bureau of Statistics, where there were only a few possibilities. However, two nationals who were pursuing demographic studies abroad were to return to Chad during the current year. Candidates for the second level, which included such personnel as technical assistants and assistant statisticians would be easier to find. The Government had been sending bright young men abroad to acquire some statistical training and they would be drafted into the census organization.

168. Other employees, such as editors, coders and punchers would be recruited.

169. Personnel for field operations would be drawn almost entirely from the Ministry of Education.

170. A series of training programmes for the different levels of personnel would be organized. Personnel for the cartographic work would be trained by the United Nations cartographer who was expected to arrive soon. The pilot census test scheduled for early in 1975 would give all the personnel their first census experience. Six people had been sent to Cameroon to participate in the census training organized by the Regional Technical Office in Bangui. They would hold key positions in the central office staff and would receive on-the-job training under the guidance of the Census Expert. Field supervisors at the first and second levels would be trained in the central office and would in turn be responsible for training the personnel in their respective areas. A training guide would be prepared.

171. The only problem anticipated with respect to equipment was that of its timely procurement. Prices of local supplies were prohibitive and it was not very easy to obtain authorization for their purchase from the United Nations. On the other hand, buying them abroad and having them delivered on time to meet the timetable of operations presented another serious problem. To cite one example a vehicle ordered by New York in January 1974 has not yet arrived. Thus it was clear that untimely deliveries could create bottlenecks and even cause operations to be suspended. Space was not a problem since the Government had provided enough.

172. The Expert was also confronted with the problems of obtaining the necessary cooperation from the Government. The Census Law provided for the creation of a national census committee, a policy determining body composed of Ministers. The Director of Statistics and the census expert would bring needs and problems in connexion with carrying out the census to the attention of that committee which would formulate and implement the policy governing the census. It would also take charge of the various publicity programmes related to the census.

173. The expert had been successful in obtaining the necessary Government support. However, it should be borne in mind that in the initial stages of organization, requirements were few and were not hard to meet. When the large-scale operations began, it would become clear whether full support could be obtained or not. The problem of Government support was a difficult one and for that reason the country expert should always be in contact with the local Resident Representative to lend him the necessary advice and support.

#### Local structures involved in the preparation of the census in the Ivory Coast

174. As specified in the decree of 1 February 1974, the National Census Committee (CNRP) was represented at the departmental and sub-prefectorial levels by departmental and sub-prefectorial committees. The prefectorial committees were coordinating and supervising organs which broadcast the decisions of the CNRP to the people with a view to promoting the effective operation of the census. At their first meeting they were supposed to delegate some of their

responsibilities to two qualified officials who would help the representative of the Director of the Central Census Bureau. In addition prefectorial Committees were responsible for finding office space, helping the representative of the Director of the Central Bureau to set up sub-prefectorial offices, assisting the sub-prefectorial offices and supervising their work and drafting reports requested by the Central Office.

175. The sub-prefectorial committees were primarily executive bodies. The first time they met they selected two qualified officials to provide any assistance needed by the representative of the Director of the Central Bureau. Sub-prefectorial committees were also responsible for finding suitable local office space, drafting progress reports on the work assigned to them, drawing attention to and suggesting solutions for problems relating to the delineation of sub-prefectures, submitting lists of candidates to act as supervisors, census takers or team leaders and ensuring that relations with village chiefs were as good as possible.

176. Sub-prefectorial offices would be established to carry out the many tasks which would arise at the sub-prefectorial level. They would operate under the direction of the representative of the Director of the Central Office, who would be assisted by the two officials appointed by the committee. Their duties would be, inter alia, to check the list of villages and settlements and the population estimates accompanying the list, to oversee the delineation of the enumeration areas, to collect information needed for the preparation of a calendar of events, to find out what transport facilities were needed and available in the sub-prefecture for the enumeration, to draw up a list of dwellings housing more than one family, to keep the Central Office informed as to the existence and quality of rapid communications facilities between the sub-prefectures, the prefectures and the capital, to disseminate publicity materials, to decide whether guide-interpreters were needed and to recruit as many as necessary, to receive the census documents and compile files for the census takers, to look for places to hold training courses for field personnel, to arrange for the storage and distribution of documents and to assist the staff working in the field in cases of vehicles failure or accident.

177. Local census organs would be put into operation by means of meetings, personal contacts, circular letters, information notes and instructions. A small series of model administrative lists and outlines for reports would also be prepared for that purpose.

178. In the discussion on local structures, it was emphasized that not enough attention had been paid to the responsibility of local authorities for the many preparatory tasks relating to the enumeration as well as for the enumeration itself as specified in the act setting the date of and making other provisions for the census and laying down the obligations, responsibilities and sanctions pertaining to it.

#### Discussion on Post Enumeration Survey for Census Evaluation

179. The Chairman requested the ICA Sampling Adviser to lead the discussion which should have been led by the United Nations Census Expert in Liberia.

180. In paragraph 57 of document ST/STAT/23 prepared by the United Nations Statistical Office, it was stated that one way of finding out the types and magnitudes of errors in a census enumeration was the re-enumeration of samples of census units for certain questions as soon as possible after the census day. Mention was made of the difficulties encountered in African countries in conducting post enumeration surveys and of the desirability of keeping the PES of census evaluation and the PES for supplemental data-collection separate. Mention was also made of the United Nations recommendation that the PES for census evaluation should be taken as soon as possible after the date of the original census under more favourable conditions than those of the census, that the best available personnel should be used and that, in the absence of alternative procedures of checking, the PES should be regarded as the only available means of checking the census data and as an integral part of the census.

181. Reference was also made to the Seminar on Techniques of Evaluation of Basic Demographic Data held in Accra in July 1973. That seminar had expressed regret that post-census checks did not form an integral part of the African Census Programme and that very few countries had plans for post-census evaluation surveys. It had called upon the African countries to take steps to improve the situation and had expressed the hope that United Nations assistance would be forthcoming in that connexion.

182. Mention was made of the African Census Evaluation Mission which had visited some countries in Africa and of the report submitted on that mission, in which it had been recommended that a PES should always be conducted after a census in order to form an objective idea about the quality of the census. The discussion leader stated that in his view a PES should be undertaken on a very small scale during a first population census, not so much to evaluate the census as to train the personnel in the national census office so that they themselves could conduct the PES in the next round of population censuses. He also referred to his own experience in scrutinizing the matching results in a particular case and stated that if a lot of subjective judgement was used in matching a person found in the census with a person found in the PES, the sample lost its probabilistic character.

183. In the discussions which took place after the introduction of the topic, the expert in the Libyan Arab Republic suggested that if a PES could be carried out it should consist of a coverage, rather than a content, check.

184. The expert in the Sudan gave examples from the census there and added that the cost of a PES might be 3 to 5 per cent of the enumeration cost. In his view it was better to spend money on a house-listing before the enumeration than on a PES after the census. He later suggested that knowledgeable persons should be used in particular areas to check the accuracy of the census data.

185. The expert in the Libyan Arab Republic described the difficulties of person-to-person matching and expressed doubt as to the usefulness of conducting a PES after a first census just to show national counterparts how to conduct a PES.

186. The Population Census Adviser in Ethiopia mentioned several difficulties in conducting a PES and raised the question of budget constraints. He said that efforts should really be made to make the pre-enumeration work as perfect as possible instead of carrying out post-enumeration work.

187. The Chairman said that no matter how much effort was put into the pre-enumeration work, it was always desirable to assess the quality of a census after the enumeration work was completed.

188. The representative of the ECA Statistics Division drew attention to the difficulty of organizing a PES after a census when general fatigue often set in among the staff and enumerators of the census office. In that connexion he mentioned the United Nations recommendation that in a PES there should be complete coverage of a sample of census enumeration areas. He also mentioned that the censuses of many African countries had resulted in an overcount.

189. The expert in Somalia mentioned his experiences in conducting a PES in the United Kingdom. It was suggested that in the United Kingdom and the United States of America, post-enumeration surveys were not used to rectify census figures, and the PES results were published as separate statements. In reply the expert in Somalia said that in the United Kingdom some Government action was determined on the basis of the PES results. The Chairman added that in the United States of America a lot of importance was given to the PES results in the adoption of measures to improve the next census.

190. The census expert in Chad said that his previous experience had taught him that it would be difficult to conduct a PES in Chad because of the problems and costs involved.

191. The census expert in the Congo said that the Congolese did not want to conduct a PES.

192. The expert in the Central African Republic observed that a PES had been conducted in Tunisia 6 months after the 1966 census and that the results had not been comparable to those of the census.

#### Discussion on the role and functions of the regional advisers

193. One of the regional advisers in demographic statistics said that the ECA records showed that 71 missions had been conducted in 24 countries, which was some indication of the level of effort made. The regional advisers were interested in quality as well as quantity, and he asked for constructive criticism and suggestions from the census experts in that respect.

194. The census expert in the Sudan pointed out that prior to the inception of the ACP, the regional advisers had conducted missions for the purpose of helping the country experts on specific points. A census was a multidisciplinary exercise, and the country experts would normally wish to welcome specialists as helpful colleagues. However, he had sometimes felt that a regional adviser was arriving in the role of "super-expert". Some regional advisers had been implicitly critical in their reports, thereby undermining a country expert's position

with the Government to which he was posted. Visits had been made unannounced; advisers had sometimes given the impression that they had come to inspect the work; there had even been cases where regional advisers had consulted juniors in a census organization without the census expert's knowledge. He felt very strongly that controversial recommendations should be discussed beforehand to ensure that a census experts position was never weakened.

195. The country expert in Nigeria supported the expert in the Sudan.

196. The country expert in Niger pointed out that a distinction had to be made between visits by generalists and those by technical experts like cartographers and data processing experts. Visits by generalists were often needed to get things moving.

197. The country expert in the Central African Republic stressed the need for regional advisers to make their visits promptly and not 2 or 3 months after a request had been made by a country expert.

198. The expert in Somalia said that the regional advisers had a role to play but should recognize that their responsibility was limited. It was not only a question of the Regional Advisory Service. The role and the effect of visitors from New York should also be discussed. It was not sufficiently recognized that census work was politically sensitive. Timetables were quite inflexible, and the timing of visits by regional advisers was therefore very important.

199. The representative of the Office of Technical Cooperation replied to the comment regarding missions from New York. Most requests came from UNDP Resident Representatives, presumably after a discussion with the relevant country expert. OTC operated at a distance and depended heavily on the assessment of reports. It would never wish to impose a mission without some measure of local agreement.

200. The representative in the Sudan said that more notice was needed prior to visits and that a country expert should be given an opportunity to express an opinion about a visit. Governments were usually neutral in the matter and in most cases would approve a visit automatically.

201. The census expert in Chad said that to avoid embarrassment, a regional adviser should consult the country expert before submitting a report to a Government. It was especially important for country experts to maintain their position with their counterpart. The difficulty was that regional advisers did not remain long enough in a country to hold proper consultations. They needed an agenda.

202. The country expert in the Libyan Arab Republic said that his experiences with regional advisers had been mixed. The most satisfactory procedure was one in which the draft report was agreed upon and then delivered before the adviser left. In some cases final official reports had been made through ECA and had never arrived in the country.

203. The Population Census Adviser in Ethiopia said that he had had experience both as a regional adviser and as a country expert. A regional adviser could give support as a colleague. If his intention was to help, visits from him would always be welcome.

204. The Sample Surveys Adviser in Ethiopia said that discussion on technical matters was easier in Ethiopia than elsewhere because regional advisers were readily available. However, they sometimes adopted a difficult attitude.

205. The Population Census Adviser in Mauritania indicated that access to reports was needed. He had found himself in the position of having to answer questions put by UNDP regarding a New York report which he had not seen and could not obtain.

206. A regional adviser said he would like visits to be planned according to each adviser's speciality and the census calendar. Visits were often too late or too early. The Population Census adviser in Chad said he agreed but pointed out that exchange of ideas was useful at all times.

207. The country expert in Nigeria reminded the conference that he who paid controlled. Governments which paid more than the United Nations should control, and the regional advisers should bear that in mind.

208. The country expert in the Libyan Arab Republic said most country experts felt isolated at times and would like reassurance from a regional adviser who could also help them obtain a more comprehensive picture within the overall ACP.

209. The Chairman said the meeting should not overlook the role of the regional advisers in providing a link between New York and the country experts.

210. One of the regional advisers in demographic statistics pointed out that UNFPA was sometimes delatory in reporting to the Regional Advisory Service and other bodies. He always studied the ECA files before undertaking a mission but often found them to be incomplete.

211. The country expert in the Libyan Arab Republic said he thought experts should receive individual copies of correspondence to Resident Representatives which pertained to their work.

#### Consideration of two census mapping programmes

212. In the absence of the expert in Sierra Leone who was to have recounted his experiences in the field of census cartography, the Regional Adviser in Cartography suggested that two experts should be asked to describe the problems they had encountered in connexion with cartography.

213. The expert in the Central African Republic had had to organize the cartographic work in a very short time and with basic documentation that was of very poor quality.

214. The first difficulty had been a budgetary one. The funds requested for the operation (about 20 per cent of the total budget) had not been granted.

215. Staff recruitment and training had had to be done by trial and error, but with a few exceptions, the staff had performed satisfactorily, especially when their work could be supervised constantly.



216. The methods adopted at the beginning had turned out to be somewhat over-elaborate. Additional resources and personnel would have been needed to complete the cartographical work and the pre-census survey at the same time as had been planned.

217. The attempt to assign each topographical team to its native area had been somewhat abortive, so it had been decided to divide the country into three regions, one of which was supervised by the expert, one by his counterpart and the third, by a French cooperation official.

218. The stage of delineating the enumeration areas had now been reached and some lacuna had come to light. To remedy the situation it was planned to send the two best topographical teams back to the field for a few weeks. In spite of such unforeseen problems, it was hoped that the enumeration area maps would be ready in time for the census, which was scheduled for 3 December 1974.

219. In view of the limited time available and the reduction in the volume of resources employed, the expert was satisfied with the results obtained and hoped that the maps produced could be improved before the 1984 census took place.

220. The expert in Malawi was a cartographer, and his sole responsibility was to train local cartographers and to prepare maps of the enumeration areas, first for the pilot census and then for the general population census, which would not take place until August 1976.

221. The organization of a cartographic design office had been hampered by budgetary difficulties since the funds allocated covered the pilot operation only. Moreover, it required a great deal of time to procure equipment which could be manufactured locally, and consequently it had been decided to purchase such equipment abroad at a much higher price.

222. Although some national agencies, especially the geological service, were cooperating very actively, the operation of the cartographic design office was impeded by a lack of autonomy. The performance of some of its work depended on the availability of apparatus belonging to other organs, which in some cases, were situated in a different locality. In that connexion, it was essential to obtain a duplicator.

223. All staff training was at the practical level, students being told how to proceed before being told why. In conjunction with their practical work, students were guided in their reading of elementary textbooks in geography, and lectures were given on cartographical methods.

224. Where methods were concerned, the 1:50,000 base map was used in preparing maps of districts at a scale which was determined by the density of the population involved. At the beginning of the next dry season, specialized teams would undertake field work to bring maps up to date.

225. It was planned to use enlarged aerial photographs in preparing maps of urban enumeration areas. Aerial photographs would also be used in delineating enumeration areas on maps of rural areas.

Comments

226. The expert in Niger asked whether it was possible to train cartographic personnel starting from scratch.
227. The expert in Malawi said that not only was it possible, it was preferable to start from scratch in cases where enough time had been allotted to training.
228. The Director of the Population Division pointed out that the conditions governing the two operations carried out by the expert in Malawi were diametrically opposed. In reply to a question as to the approximate date on which he expected his work to be completed, the expert in Malawi said that it should be finished 6 months prior to the general census.

Reviewing monthly progress reports

229. The Chairman pointed out the reason for and importance of the subject report. They constituted the first stage in an attempt to determine at an early date any trouble spots which might be developing in the programme. They were intended to be checklists, which should take no more than a few minutes to complete. The progress reports and the narrative reports prepared by the country experts provided the regional and Headquarters staff with a basis on which the current situation could be quickly analysed on a monthly basis, trouble areas could be determined and corrective action suggested.
230. It was intended to supplement the progress report by two additional comparison reports in the near future, the first of which would be a comparable report prepared by the regional staff, with separate checklists for the various specialities - cartography, sampling, data processing and with two forms to be completed by the generalists. The other report would attempt to describe the overall status of the project at Headquarters, in terms of approval and allocation of funds and the various logistical steps required.
231. After some discussion, the country experts were requested to complete such a report as of 1 September. They were also reminded of the need to send in reports on time since the value of a report diminished when it was received late. All experts were required to submit a report.