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ECONOMIC COMMISSION FOR AFRICA

Training workshop for national census personnel within the framework of the 2000 round of population and housing censuses.

15 – 19 November 1999
Addis Ababa, Ethiopia

REPORT

Attendance and Organization

Opening and duration of Meeting:

1. The training workshop for national census personnel within the framework of the 2000 round of population and housing census took place at the Economic Commission for Africa (ECA) Headquarters, Addis Ababa, Ethiopia, from 15-19 November 1999. The workshop was organized in cooperation with the United Nations Population Fund (UNFPA) Country Support Team located at Addis Ababa and the United Nations Statistics Division (UNSD) with financial Support from ECA regular budget. Mr. Dickson Mzumara opened the workshop on behalf of the Chief of the Development Information Services Division.

Attendance:

2. The workshop was attended by participants from the following countries: Ethiopia, Gambia, Mauritius, Namibia, Rwanda, Seychelles, South Africa, Sudan, Uganda, Zambia and Zimbabwe.(Annex: list of participants)

3. Representatives of the UNFPA and UNSD also participated in the workshop.

Election of Officers:

4. The workshop elected Mr. El-Naeem Suleiman (Sudan) as Chairperson, Ms. Drusilla Mukasa (South Africa) as Vice-chairperson and Mr. Benjamin Ralph Ciseau (Sychelles) as rapporteur.

5. **Adoption of the Agenda and Organizational matters**

A. Agenda

1. Opening Address
2. Election of Officers
3. Adoption of the agenda
4. Presentation by the African Center for women (ACW)
5. Presentation by the Economic and Social Policy Division (FSSDD)

6. Undertaking the various phases of the census
7. Other business
8. Discussion of census experiences and issues
9. Evaluation of the workshop
10. Adoption of the report
11. Closing

B. Account of Proceedings

Opening address (agenda item 1)

6. Mr. Dickson Mzumara of the ECA Development Information Services Division opened the workshop on behalf of the Chief of the Division, Ms. Karima Bounemra Ben Soltane.

7. After welcoming the participants, Ms. Soltane recalled that over the years African Statistical and Census Offices had been steadily building up expertise in the area of population and housing censuses. She nevertheless pointed out that considerable difficulties and delays had been experienced with the execution of censuses. The chief of the Division indicated that this situation, in many instances, had been compounded by a high turnover of staff in the statistical and census offices in Africa. She noted that greater efforts are still needed to be made to consolidate past achievements and build up the required human resources on a continuing basis.

8. She further pointed out that Training workshops while useful, should be supplemented by short term fellowships in selected fields or formal training at institutions both within and outside Africa. The participants were informed that the workshop was designed to compliment the United Nations Principles and Recommendations for Population and Housing Censuses which were intended to be a guide to help countries in planning and carrying out the 2000 round of population and housing censuses. She emphasized the need for individual African countries, to intensify follow-up efforts to ensure that enduring capabilities are developed and sustained.

9. Reference was made to the Regional Working Group of African Census Experts, held in January 1996 which called upon governments to take into account the problems related to census data collection, analysis and dissemination.

10. She then identified critical areas that needed serious attention which emerged from the 1990 round of population and housing census carried out in the African region. The areas included census mapping, enumeration methods of special population groups, quality control, use of sampling, data capture and processing and dissemination.

11. Finally it was stated that a single document, which would incorporate the workshop report and lecture notes, was to be prepared. She felt that such a document would be useful for subsequent workshops particularly those to be organized at national, sub-regional or regional levels.

4. African center for women presentation (Agenda item 4)

12. The representative of the African Center for Women explained the vision and mission of the center. The center's mission was to promote a convergence of views towards the economic and social involvement of women in decision making and that one of the center's mandates was to provide information and tools necessary for the formulation and implementation of policies, strategies and programs which provided an appropriate response to institutional biases or not on gender difference.

13. The workshop noted the modes of intervention used by ACW, the programs under implementation and its time limited objectives for the biennium 2000-2001.

14. The work of the center was guided by the decisions of major conferences such as the African Platform (1995) and the Beijing Platform (1995). African Women and Economic Development investing in our future (1998). The Cairo Conference on Population and Development and The Copen Hagen Social Summit (1995).

15. The critical areas of concerns included among others:

- Women's poverty, insufficient food security and lack of economic empowerment;
- Inadequate access of women to education;
- Improvement of women's health, reproductive health including family planning and integrated population programmes;
- Women's relationship and linkages to environment and natural resources management and mainstreaming of gender disaggregated data.

16. In examining how those concerns could be included in population and housing censuses, the workshop noted that the population censuses did collect detailed data on gender. It did note however, there were cultural factors such as polygamous marriages which made it difficult for enumerators to interview household members such as wives. It was feared that housewives would in some cases be excluded especially in cases where the husband was the head of the household.

17. The workshop noted also that because of cultural and institutional biases, enumerators must be adequately sensitized. Further, even though detailed gender data were collected in the population census, there was a need for more comprehensive gender analysis and development of gender sensitive indicators. It also observed in that connection, that the new ESPD indices should be disaggregated by gender. With regards to women's poverty, insufficient food security and women's empowerment, it was emphasized that the census was not the appropriate instrument and the best source for such data would be Household Income Consumption, Expenditure Survey and Welfare or Poverty Monitoring Survey.

18. Finally, the workshop recommended that the concept of household head should be reviewed and that the census questionnaire should also be holistically examined by gender experts before finalization.

5. Economic and social Policy Division presentation (agenda item 5)

19. A representative of the Economic and Social Policy Division presented to the participants what the division was doing, and its data requirements.

20. He indicated that its primary tasks are to:

- Conduct substantive research;
- Prepare annual publications such as the Economic Report on Africa.

21. The division conduct survey of social conditions in Africa. In addition, it conducts common Economic Policy analysis, social policy and poverty analysis. It was indicated that the division produced some indices, such as Annual Performance Trend Index (APTI), Economic Sustainability Index (ESI), and Economic Policy Stance Index (EPSI).

22. The representative, as a data user enumerated a number of areas he felt that there was data gaps, and censuses of population and housing in Africa were not feeling the gap. He gave the following examples of data gaps in censuses:

- Economic activity data including unemployment;
- Individual educational attainment ;
- Quality of life indicators.

23. He also pointed out on some limitations of the census data, namely: there was no comprehensive data set to measure change over time. He wanted to know whether it was possible to measure change within the same households and enumeration areas between censuses. He further argued that census results were not timely and results were of restricted access. He indicated that there was need for users to access census data at different levels of aggregation.

24. He underscored the lack of methodological details in census reports, such as definitions of variables, sampling procedures, and methods of evaluations. He wondered if it is possible to standardize census variables throughout Africa.

25. In the discussions that followed participants made a number of comments on the presentation and some of them answered the questions raised by the representative of ESPD.

26. With regard to timely release of census data, most participant felt that there was room for improvement. However, it was pointed out that a census generated massive data that a realistic time frame should be allowed between the completion of the data collection and dissemination of results.

27. It was pointed out that a distinction should be made between specialized reports and general reports produced for the general public. Some countries do produce methodological reports, but at times there is a big time lag between the release of census results and the production of methodological reports, thereby rendering them less useful.

28. One participant noted that attempts were made by some countries to standardize enumeration areas, such that the frame can be used in subsequent socio-economic censuses and surveys. With respect to standardization of census topics, concepts, and definitions, it was pointed out that the United Nations has produced a hand book, on "Principles and recommendations for population and housing census"

which could guide countries in determining what is covered in the census. If countries followed the guidelines, then comparability would be enhanced.

29. It was also pointed out that while users wanted various data sets, a census cannot collect all possible data, especially that on complex subjects. The operation is done during a very short interval and a large number of field staff who may not be specialized.

30. Participants while agreeing that data should be provided for the lowest possible geographical or administrative areas, issues of confidentiality of individual records should not be compromised. Participants felt that with the current advancement in Information Technology, the census results are likely to be processed and disseminated at the shortest possible time.

6. Presentations and discussions on the undertakings of the various phases of the census

A. Presentations and discussions on census pre-enumeration phase

a. Organizational issues in the planning and execution of Population and Housing Censuses

31. A consultant to the secretariat introduced this agenda item on the basis of document ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.1. He underscored that a census was an extensive and complex operation of interrelated activities. The activities were grouped into three major phases namely pre-enumeration, enumeration and post-enumeration phases. The consultant further discussed issues pertaining to the legal basis for a census undertaking; census administrative organization; census work plan and calendar; census budget; census personnel and facilities required for undertaking a census.

32. In discussing the census law it was pointed out that such a law should include organizational matters, operational flexibility, public obligations, a confidentiality clause and general guidelines on accessing the census information.

33. With respect to census administration and planning the consultant advised that it was important to consider the role and relationship of Advisory and Executive bodies. He also pointed out that the census work plan was an indispensable management tool.

34. In the presentation it was noted that effective planning and control of the various operations were not possible without judicious financial estimates of various aspects of the census operation. He then categorized the personnel of census organization into, professionals, administrative and field staff.

35. He concluded by stating that the conduct of the census required ample office space, equipment and supplies.

36. In the discussions which followed, participants, gave some insights into preparatory work done in their respective countries during the previous census. Most of the countries indicated that they more or less followed the work plan presented by the consultant. Participants shared their experiences in areas such as, type of census committees, organization of statistical offices vis-a-vis census operations, government formal approval of census and inadequacies of some of the census acts.

37. Some participants indicated that the momentum of census preparations, at times, were constrained by lack of government commitment to funding of population and housing census activities.

38. The workshop was reminded that there were a number of computer software packages that could be used during the process of planning for the census. The participants were therefore encouraged to take advantage of technological developments.

b. Presentation on pre-enumeration mapping, ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.3

39. The UNFPA/CST representative based on his presentation on document ECA/DISD/STAT/RPHC.WS/2/99/1.3 His presentation focused on planning, administration and training which are the initial steps before the production of Enumeration Areas (EA) maps. In discussing the initial planning of cartographic activities, he emphasized the importance of examining previous records. He also referred to the need for the government to issue the decree that forms the legal basis for the census. The UNFPA adviser referred to the three early basic decisions that had to be made by census planners, namely:

- Determining the size of urban and rural EA's in terms of population or households,
- Defining urban areas, and
- Developing geo-coding scheme.

40. With respect to the EA's, he stressed that for the sake of homogeneity and subsequent sample surveys, efforts should be made to keep EA sizes within specified ranges.

41. In discussing the cartographic administration it was underscored that the first step was to design a cartographic activities work programme including staff requirements. A production schedule should be produced. He further pointed out that it was essential to prepare periodic progress reports and a map register book or card system must be maintained. The representative advised that cartographic field work should not be scheduled for more than two years, although there were exceptions.

42. In discussing the inventory of existing maps and search for new base maps, he suggested that the census office should consult with the local lands and surveys department to find out what required material and is already available in the country.

43. The UNFPA/CST representative further stressed the important of obtaining administrative lists, village lists, urban places lists, schools, health facilities etc, which should be used as checklists by field mapping teams.

44. Procurement of cartographic equipment was identified as an important aspect of cartographic preparatory stage. He offered a buyer's guide and stressed that only basic equipment and material was needed. The workshop learnt that the key to providing good clear EA maps for enumerators was to ensure that scales are approximately proportional to the densities of population of areas covered by the maps. In addition, he stated that the global positioning system (GPS) was transforming the accuracy of census mapping which was previously known for its up-to-date but inaccurate maps. Communication equipment and vehicles were identified as very essential for supervisors.

45. With regard to recruitment and training, the advisor identified a number of institutions that offered the requisite training. He advised that the training of field mapping teams should last for about five or six days covering both classroom and practical field training.

Discussion on the presentation on pre-enumeration mapping

46. In the discussions which followed, participants asked a number of questions. In responding to the question about the rational for having smaller EA's in urban areas, he pointed out that it was advisable to keep urban EA's smaller in size than rural EA's due to problems experienced in urban enumeration. With regard to the treatment of areas of temporary unplanned dwellings, in the same urban ward, he advised that EA size ranges agreed to for urban areas should be adhered to wherever possible.

47. With respect to demarcating EA boundary between two adjacent blocks of collective quarters, he indicated that it would be easy to do the demarcation if the collective quarters were side-by-side but it is more difficult if collective quarters were high rise blocks.

48. On other issues he pointed out that an enumerator was responsible for all parts of his/her EA and not only those settlements shown on his/her map.

49. The representative reiterated that to ensure timely completion of the base maps for the field, and ensure that the EA maps were ready in time for the enumerators, the main focus should be on the enumeration not GIS.

c. Presentation on document ECA/DISD/STAT/RPHC.WS/2/99/Doc. 1.4

50. The item on determination of census content was introduced by the consultant to the secretariat based on document ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.4 (item...). It was stated that the content of the census would to a large extent influence, the enumeration procedures, format of the questionnaires , tabulation plan and data processing procedures.

51. In addition, the workshop was informed that topics to be covered in a census should be based on balanced considerations of the following factors: the need to satisfy national data requirement and maintenance of comparability of results with the previous censuses; suitability of topic to be covered in the census; need to ensure operational efficiency at reasonable cost; possibility of maintaining regional and international comparability.

52. Certain topics of national, regional and international interest are universally included in the census. Such topics relate to the basic demographic and socio-economic characteristics of the population. Fertility and mortality topics are also covered by most countries. The housing topics usually relate to structural characteristics, occupancy and availability of facilities within the living quarters.

53. The consultant advised that topics such as religion, ethnicity, etc, are sensitive in some countries and serious considerations should be given in deciding their inclusion as census topics.

54. During the discussions which followed a question was raised as to whether there was close collaboration among different sections of the national statistical office in the drafting of questionnaires.

Some participants indicated that the design of questionnaires involved different relevant sections in their national statistical offices.

55. With regard to the exclusion of sensitive issues in the questionnaire, a participant felt that efforts should be made to include some important questions which may help to understand some of the demographic dynamics. One example given was ethnicity.

56. Some participants felt that certain topics should be avoided in order to reduce costs. For example the use of long and short questionnaires was to reduce costs, administering the long questionnaire to a sample of households. The short questionnaire which is administered on a complete enumeration basis would cover basic demographic data, while the long questionnaire administered on sample basis would cover fertility, mortality, migration and economic activity, among other topics.

57. Some participants felt that disability should not be included in the questionnaire because it is difficult to define and collect. On the other hand, one participant while agreeing that questions on disability are poorly handled both in the questionnaire and training, the data is appreciated by planners.

58. In order to mitigate the problems of collecting information on disabilities, it was suggested that there is need in consulting the agencies involved in disability issues. So, such agencies can help in developing the questions, concepts and definitions on disabilities for the census office.

59. A question was raised whether to use different questionnaires for the urban and rural areas. The working group felt that it was more plausible to use the same questionnaire both for the rural and urban areas, except for questions on economic activity. For example, the current and usual approaches may be applied in the urban and rural areas respectively. One participant felt economic activity was a difficult topic. Some people, especially the affluent were reluctant to answer questions on the topic.

60. A participant wanted to know whether questions on family planning should be collected in censuses. In response it was pointed out that in most African countries birth control was still a sensitive issue. The collection of such information is through specialised surveys using special enumerators, that is female enumerators.

61. With respect to codes, it was pointed out that we could use pre-coded questionnaire and/or instructional manual.

d. Presentation on the preparation of census documents, Doc.1.8

62. The consultant indicated that proper execution of the various aspects of the census operations require several census documents. He stated that of those documents, the most important ones are census questionnaires or forms, various instructions manuals, dates of important historic events at national, regional and local levels, summary forms, forms transmittal and receipts of census documents and materials.

63. He stated that the census questionnaire is one of the most important census documents and the details concerning the contents and the design of the census questionnaire are given in the document ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.8.

64. He also stated that census documents incorporate several instructions manuals and these include census cartographic manual, census enumerators instructions manual, supervisors instructions manual census officers manual, census data editing and coding manual and census publicity campaign manual.

65. Moreover he stated that the calendar of important historic events at national and local levels is another important census document, particularly in the developing countries. This document is mainly used for assisting the respondents in answering the questions in age and number of years since an event like marriage, birth, ... etc took place.

66. He also reported in the various forms that are used in the census operation by the census officers, supervisors and enumerators. These forms include census documents transmittal and receipt forms, summary forms, callback forms, ... etc. He concluded that the census documents are essential for the successful execution of the various phases of the census operations.

Discussions on preparation of census documents

67. In the discussions followed, participants asked questions about the usefulness of the Calendar of Historical Events in census and the purpose of producing the census officers manual. It was stated that the calendar while not being the best approach to obtaining age data has been found useful in situations where

respondents did not know their ages. Important historical events can be compiled at national, provincial and even at district levels. Respondents can be assisted in recalling their ages by probing techniques using the calendar of important historical events.

68. The census officers manual would stress the organization and management aspects of the census office at various administrative hierarchies. The manual would include topics on the manner in which the field training would be conducted, how to supervise the census enumeration and administrative and financial records management.

e. <u>Presentation on the use of sampling in population and housing census, Doc.1.6</u>

69. The representative of UNFPA/CST introduced this agenda item and relevant sections of ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.6 . He underscored that sampling played a critical role in various phases of census planning. The workshop was informed that the objectives of sampling included, cost reduction, collection of additional data, enhancing data quality reducing time required to produce results and census evaluation.

70. The presenter discussed the use of sampling at various stages of census implementation including pre-testing, census enumeration, post-censal surveys, and data processing and advance tabulation of selected topics. Two sampling techniques were identified for the pre-test, namely probability and purposive sampling. While a census entails a complete enumeration, insufficient resources or time constraint may dictate that only a fraction of the required data can be collected in a census. In view of the above it may therefore be necessary to collect some information on a sample basis while the rest may be collected on 100% basis. The collection of additional data could be accomplished by use of in-built samples. In this case two questionnaires can be administered. The short questionnaires administered on complete enumeration while the long questionnaire would be administered to a pre-determined sample. He indicated that application of sampling in census was more common in rural areas. In the process of sample selection, the presenter identified issues, which should be pre-determined, among them, selection procedures, sample size and estimation procedures.

71. Finally, the presenter stressed that sampling was one of the tools that had enabled census organizers and implementers to produce timely data, reduce complexity and expenses of the census and maintain required accuracy.

72. The following suggestion were made by the presenter, i.e. representative of UNFPA-CST:

- Uses of sampling should explicitly be shown as important activity in NSO work plan
- The use of results from sampling should be determined in advance;
- Technical issues related to sampling should be handled by people with adequate experience;
- NSO's should strive to formalize quality control programmes in their work, by preparing necessary documents and following this with careful implementation;
- Depending on the situation with regard to professional personnel, NSO should train staff in sampling and survey methods;
- Given the recent development in technologies, NSO should re-examine the necessity of undertaking advance tabulation.

Discussions on the use of sampling in population and housing census Presentation

73. In the discussions one of the participants raised the issue of why administer a short census questionnaire on 100 percent basis and a long census questionnaire on sample basis in rural areas and only a long census questionnaires on 100 percent basis in urban areas. The presenter responded that considering the higher demand for data in urban areas, due to the prevalence of relatively higher literacy rate and ease of transportation and communication in urban areas, countries tend to prefer administering a long questionnaire on 100 percent basis.

74. Responding to a question if purposive sampling was considered as scientific sampling and if one could draw inferences, the presenter responded by stating that purposive sampling was not a scientific sampling technique and one could not draw inferences about the population through this method. He further stated that at the pre-test stage one is not obliged to give quantitative information and hence the use of purposive sampling method at this stage. However, if one wants to quantify the data and to make inferences, he recommended the use of probability sampling.

75. The presenter also gave clarification on the question raised with respect to "group interview". However, a participant cautioned that one should be careful in selecting the group by following an appropriate method of selecting the group for interview.

76. The presenter also responded to the question on the use of an appropriate sampling frame in the pilot census as well as the main census. In the discussion one of the participants reported that in his country sampling was used in their last census with respect to publicity, enumeration and post enumeration activities.

77. On the subject of determining the sample size at the enumeration stage the presenter responded that determining the sample size is dictated by the degree of precision required and the availability of resources. That is, precision is fixed and the resources required attaining that precision is estimated and the sample size is determined by balancing between the required precision and the available resources.

78. Another participant raised the issue of the consistency between the estimate obtained in the advanced tabulation and those expected from the total tabulation. Then the presenter responded that advance tabulation is a device used for processing and generating the census results for some variables as quickly as possible for the immediate use by the planners. He continued and stressed that the sample selection for advance tabulation should be carried out very carefully and the estimates obtained should be consistent with those expected from tabulating the overall data of those variables.

79. Finally, one participant raised the issues of resolving the shortage of sampling statisticians in the NSO's and the UNSD representative responded that this problem can be resolved through using the services of UNFPA/CST advisory services, by participating in some regional sampling training workshops organized by UNSD, training NSO staff in various universities, U.S. Bureau of the census, ...etc in sampling and by making use of NSO sampling statisticians to train other NSO staff in sampling techniques.

f. Report on the Outcome of Laboratory I exercise

80. For the Laboratory I exercise, the participants were grouped into two with six participants in each group. Each group was expected to prepare a work plan/census calendar and census budget for one of the participant's country. The group used a sample work plan given in the Appendix of document ECA/DISD/STAT/RPHC.WS/2/99/Doc1.1 and sample census budget given in document ECA/DISD/STAT/RPHC.WS/2/99/Doc.1.2 as a background material or input for the Laboratory I exercise.

GROUP I

81. This group reported that it had thoroughly reviewed the sample work plan/census calendar which was given as input in the exercise. After a long discussion, the group slightly modified the sample work plan and adopted for one of the participants country, i.e. Zambia.

82. With regard to the census budget, the group also carefully reviewed the sample census budget given to be used as input in the exercise. They considered the pros and cones of adopting it to one of the participants country in the group. Finally, they decided to prepare a census budget for Zimbabwe. However, due to shortage of time. It was reported that they only managed to prepare a budget for the census mapping aspect of the census project. The group estimated that undertaking a census mapping operation is expected to cost about 922,602.00 US Dollars. This exercise is planned to be carried-out in 2000 and 2001.

GROUP II

83. This group also reported that it has studied the sample work plan/census calendar and made some modifications in the various phases of the census operations. They subsequently prepared a similar work plan for one of the participant's country, i.e. Uganda. This group also examined the sample census budget carefully, after a detailed discussion, they decided that they should consider Uganda for preparing the census budget. Then the group reported that it had prepared a budget for all the phases of the census operations.

Discussions on Laboratory I Report

84. After the presentation of the outcome of Laboratory I exercise by the two groups the chairman invited the participant to make comments, suggestion or questions. Based on this offer, a member of the secretariat suggested that the group should have also prepared the work plan/census calendar by means of a Bar Chart. Moreover, the member also suggested that the groups should have included the salaries of headquarters and the regional census offices staff in the census budget. He further suggested that the groups have presented the census budget in terms of government and donors (external) contributions.

g. Report on the outcome of Laboratory II

Group 1

85. The report of group 1, which was presented, to the workshop is summarised below. The group selected Ethiopia as an example and recommended the following items to be included in the questionnaire.

Identification characteristics

1. Region
2. Zone
3. District
4. Town
5. Keftegnas (for urban areas only)
6. Kebele/farmers Associations
7. Supervision area
8. Enumeration AREA
9. Name of head of households
10. House number
11. Household serial number.

86. The following topics were selected to be collected on a sample basis (long questionnaire):

- Place of usual residence
- Place where present at the time of the census
- Duration of residence
- Place of previous residence
- Relationship to head of household
- Sex
- Age
- Marital status
- Children ever born
- Children living
- Literacy
- School attendance
- Educational attainment
- Activity status
- Industry
- Status in employment

- Religion
- Language
- Ethnic group/National group
- Births during the last 12 months
- Deaths during the last 12 months
- Impairment and handicap
- The group has also considered place of birth for inclusion.

87. The topics below were selected for inclusion in the short questionnaire:

- Place of usual residence
- Place where present at the time of the census
- Relationship to the head of household
- Sex
- Age
- Marital status

Group 2

88. Group 2 selected Seychelles, which has a population register system in place. The country has a population of about 75,000.

Identification characteristics

(a) Province (b) district, (c) EA, (d) house Number assigned during mapping.

Demographic and Social Characteristics

1. National identity number
2. Status of residence
3. Present surname (for married women)
4. Maiden surname
5. Other names
6. Sex
7. Date of birth

8. Mothers maiden name
9. Place of registration (place of birth)
10. Nationality
11. Religion
12. Relationship to head of household
13. Marital status
14. Educational characteristics (ages 10years and above)
15. Literacy
    - Write in any language
    - Read
16. School attendance
    - Attending now
    - Attended in the past
    - Never attended
17. Highest education attained
18. Disability (impairment and handicap)

    Fertility
19. Children everborn and children surviving by sex (for women aged 12 or 16 years and over)
20. Number of children born in the last 12 months prior to the census date by sex (for women aged 12 or 15 years and over)

    Mortality
21. Deaths in the 12 months before the census date by sex and age
22. Parental survival

h. <u>Presentation on the paper entitled "Advocacy/IEC and Census Publicity" presented by UNFPA/CST representative</u>

89. In the presentation it was pointed out that censuses and household surveys have been the major sources of demographic and socio-economic data and that the activities were the exclusive domains of the demographers and statisticians and other relevant professionals such as communication experts were inadvertently excluded from these activities.

90. He then stressed on the rational to the involvement of others such as the media personnel, the editors, and the reporters – etc in publicising the various census operations. He further pointed and that

these steps in Census Advocacy/IEC at pre enumeration, enumeration and post enumeration phases of the census.

91. In conclusion, he emphasised that there should be adequate and longer planning for the census, inputs should be obtained from relevant segments of the society, the media should be fully involved from the inception of the census project, that census can be devoid of partisan politics through mass awareness and education and that the media should be considered as a partner and an ally and should be fully involved in census publicity campaign.

Discussions on the presentations on advocacy/IEC and census publicity

92. After the presentation one participant stressed that before the census was publicized we should at the outset publicize the various activities of the NSO's including the surveys and the census activities. Moreover, the participant emphasized that the publicity approach should be from bottom to the top i.e. we have to start at the grass roots level and move upwards.

93. Another participant raised the issue that officials in the government would not like the media to be involved while the census authorities very much liked to involve them. The participant raised a question as to how this problem could be resolved. The presenter responded by stating that in some countries the media is kept out of the information flow and at times they are even manipulated. However, the census authorities should convince the officials in the government and do everything possible to make the media part and parcel of the census publicity operation.

94. Finally a participant form UNFPA-CST raised the question what do we mean by "we" and "you" the two words used by the presenter repeatedly with respect to publicity. Then, the presenter responded by stating that census should not be the exclusive domain of the demographers and statisticians and he refers this group as "you". In other words, he emphasized it should be "we" that constitutes the "Census publicity committee" with demographers, statistician, the media representatives, communication experts, ... etc as members and working very closely to make the census publicity activities a success.

i. Presentation on the Pilot Census, Finalization of Questionnaires, Manuals, Other Documents; and Printing of Census Documents ECA/DISD/STAT/RPHC.WS/2/99/Doc.3.5

95. In the presentation the participants were informed that during the preparatory stages for the main census enumeration, there is a need to test the various aspects of the census plan. The testing is normally conducted during the pilot census. To be as comprehensive as possible, this stage is aimed at testing:

- Field organisations;
- Field instruments and related documents;
- Training programme;
- Publicity and advocacy;
- Enumeration;
- Data processing; and
- Other related aspects of the entire process.

96. The pilot census covers a limited number of selected enumeration areas with the aim of testing the entire census plan and organisation. It is undertaken in conditions similar to those which will prevail during the main enumeration and information gathered during the pilot survey is used for a number of purposes including the following:

- To bring out weaknesses in the questionnaire and adjust it accordingly;
- To estimate time for the enumeration;
- To determine staff requirements;
- To estimate the overall cost for the enumeration;
- To test the suitability of selected technology for data processing;
- To evaluate the suitability of questions to the tabulation and analysis plans;
- To assess the appropriateness of the publicity advocacy strategy adopted;
- To assess the logical flow of materials and activities in the field and make adjustments where these are found necessary (matters of transportation and quality control become paramount at this stage);
- To fine tune other instruments such as Enumerators 'Instruction Manual, Supervisors' Instruction Manual, Publicity/Advocacy Document(s), Fliers, Stickers and Posters, questionnaires, and Call back cards; and
- To review the training programme for all categories of field staff.

97. The way the questionnaires are completed in the field will give an indication about the quality of enumerators and supervisors and the deficiencies that may have taken place during the training of these two groups of staff. The positive aspects will guide more emphasis in the training for the main

enumeration, and the negative aspects will indicate where corrective measures will be necessary during the same training.

98. Problems related to co-operation by national leaders and different community leaders as well as the civil society will provide indicators on where publicity/advocacy campaign for the main enumeration. On the other hand, more positive aspects of the campaign may be highlighted so that more emphasis is put on those aspects during the next stage of the publicity/advocacy programme.

99. The results of the pilot census will give a clear indication of the number of personnel required to complete the main enumeration in a given time; the amount of materials required; the logistical requirements implied; transportation needs; and so forth.

100. The data processing tests will lead to the adjustment of the tabulation plan, fine tuning of the data editing specifications and the strengthening of training and adjustment of instructions for data entry clerks and their supervisors. In addition, the tabulation and related analysis of the pilot census results provide invaluable insight on the suitability of the analysis plan.

101. After fine tuning the questionnaires and related documents using the pilot census results, they are finalised for printing. The printing of the census documents requires special planning. For example, the printing of the final questionnaire(s) requires putting into consideration the following aspects:

- Method of enumeration (for example will the approach be single individual, single household or single set of living quarters, etc.);
- Data capture and processing technology (for example is data capture going to be done manually or by using optical mark readers (OMRs), optical character readers (OCRs) or intelligent character recognition (ICR) scanners);
- Format;
- Exact wording;
- Arrangement of questions; and
- Quality of paper and type of print to be used.

102. The printing should be done in good time to facilitate timely binding and Distribution (in adequate quantities) to the lowest levels of census enumeration administration.

Discussions on the presentation of the pilot census

103. In the discussion, a representative of UNFPA-CST stressed that in order to avoid all the confusions that the census authority encounters, a comprehensive census project document should be prepared. This document should give strategic plan and framework for all the census activities including the procurement of non-expandable equipment such as field vehicles, computers, scanners, ...etc.

104. One participant raised the issue of providing especial attention and superb facilities for the census officers, supervisors and enumerators at the time of the pilot census that the census office cannot afford to provide at the time of the main census. The presenter stated that one of the objectives of the pilot census is to test the kind of administrative, logistics, technical, ... etc problems that will be encountered at this time and device a mechanism so that those problems should not occur at the time of the actual census. Thus, he emphasized that situations created, facilities, ...etc offered at the time of the pilot census should be similar to the situation at the time of carrying out the actual census enumeration.

B. Presentations on the undertaking of census enumeration phase ECA/DISD/STAT/RPHC.WS/2/99/Doc.2

105. The representative of UNSD presented the document. In his presentation, it was stated that population and housing census was the most extensive, complicated and expensive civil operation in most developing countries. It was therefore emphasized that for such a massive operation to be successful, the subsystems in the census operation should follow a logical sequence and should occur in an efficient and timely manner. The presentation assumed a personal interview approach, which was identified as a common practice in census enumeration in developing countries. The following topics were discussed: census administration, recruitment and training of field staff, coverage of special populations and census quality assurance.

106. It was pointed out that in most countries the national statistical offices were responsible for conducting censuses. The management structure for the field could involve three or more layers of hierarchical management for example, from regional census offices to enumerator.

107. Roles and responsibilities vary at each level. For instance, the regional census officers would be mostly involved in administration, the supervisors in quality control and the enumerators were responsible for interviewing respondents.

108. The participants were informed that the number of enumerators reporting to a supervisor had an impact on the quality assurance the supervisor is able to perform. The ratio between supervisor and enumerators can be based on pre-test and/or previous census a 1:5 ratio was suggested as a starting point.

109. Field staff should be recruited in sufficient numbers and they should be capable to competently undertake assigned duties. The number of enumerators will mainly depend on the length of the enumeration period. From the estimated number of enumerators it is possible to establish the number of staff along the managerial hierarchy level by level. It was stated that the selection of field staff would involve the use of standard forms, assessing the applicants and conducting interviews.

110. In discussing the training of enumerators, the UNSD representative stressed the need for adequate training for enumeration staff in order for them to understand among other things, the significance of their duties, issues of confidentiality and how to carry out their duties.

111. The coverage of special populations was mainly focussed on nomadic population. The following methods of enumeration were discussed. Group assembly, tribal or hierarchical, camp or water hole and enumeration area approaches.

112. In discussing census quality control, it was stated that supervisors played an important role in assessing, reviewing and ultimately impacting on the quality of the census. Supervisors should therefore observe some interviews, check the completion of census questionnaire, checking coverage, checking household already interviewed and checking completed questionnaires.

Discussions on the presentation on undertaking of census enumeration phase

113. In the discussions which followed questions were raised with regard to the best method of training, optimum size of classes, whether written test should be administered to applicants for field positions such as enumerators. It was pointed out that in most countries a combination of the cascade and master trainers approaches were used, that it is difficult to give a precise number of class room size, an ideal size should be determined on the basis of experience and results from a pilot census and that assessing of prospective enumerators could include written tests.

114. One participant wanted to know whether the United Nations system briefs the Head of State, Ministers and the Organization of African Unity about population and housing censuses. It was pointed out that population censuses are discussed in the UN statistics and population commission at which some country representative take part, and reports are circulated to Member States. Bi-annual Meetings of African planners and statisticians discuss censuses and the report and recommendations of such meetings are submitted to the meeting of ministers of member states. With regard to interaction between the UN and OAU on census issues, the population section of the OAU is in touch with the sections of the ECA responsible for statistics and population. Moreover, at country levels, the UNFPA representative discusses on a regular basis, with various stakeholders about the census.

115. Further, it was pointed out that in some countries cabinet ministers are members of the census commission, therefore, they will be aware about the details of census. In the discussions, which ensued, it was emphasized that enumerators should be very familiar with areas in which they are going to work. They must know the language and should preferably reside in the enumeration areas. The minimum qualifications of enumerators will vary from country to country. If possible all people involved in the census activities in addition to enumeration staff, should be given some basic training on the objective of the census vis- a - vis their role.

116. It was indicated that training of field staff could be done in phases especially in countries, which engage large numbers of field staff. Enumerators could be trained in various groups in the respective regions, provinces or districts.

117. In Sudan the Sheiks help to establish where the nomadic population would be during the enumeration period. During enumeration special enumerating teams, with requisite transport and security, carry out the canvassing.

118. In Ethiopia during certain months of the year the nomads do not move a lot. They live in the same place especially immediately after the rainy season. The staff of NSO list localities and households at the lowest administrative level in the district. Then, enumeration is done on the basis of these lists of localities and households.

119. The participants also discussed the enumeration of the homeless. In undertaking this exercise, in some countries enumerators get assistance from the police while in others from the social welfare organizations.

120. In discussing quality assurance, some participants observed that at times supervisors does not do a good job because of lack of transport. They don't regularly interact with enumerators and often when mistakes are detected it becomes too late to correct them.

121. It was also stated that the training of enumerators doesn't include mapping. In addition it was difficult to get updated maps from the field after enumeration is completed.

Sudan experience in undertaking the census of nomadic population

122. During the preparatory phase of the census, lists of sheiks were collected from the livestock tax lists from the local authorities (rural councils) and the chiefs of the tribes.

123. Special listing forms were designed with provision for entering items such as the name of the tribe, name of sheik, number of families or households under his sheikhship, camps locations a month before and after the census time and the nearest town and village to the camp. This information was collected either from the sheik or his representative in the livestock markets. This information was represented in maps with the routes of movements and water holes.

124. The information collected gives estimate of the total number of households as well as distances, which will help for planning for the enumeration phase.

125. During the enumeration phase, special teams of enumerators and supervisors will be formed. The teams were given appropriate vehicles (heavy trucks) to use in the remote nomadic areas, as well as food supplies and guards. Tribal sheiks or their representatives were recruited as guides to help the teams in locating nomadic camps.

126. The nomadic population which live closer or together with the sedentary population were enumerated within the enumeration areas of the settled population. The census questionnaire made

allowance for differentiating nomadic households from the rest of the households. Moreover, all nomadic households were covered by the short questionnaires.

C. Presentation on Census post-enumeration phase

a. Presentation on data processing operations

- Summary, Doc 3.1
- Data processing, Doc 3.2
- Data selecting, Doc 3.3

127. The presentation included eight main tasks to be performed.

- Reception of questionnaires.

  In addition to the usual way of storing the questionnaires, it was indicated that this phase could be computerised. The application will consist in the development of an EA database with the possibility of posting the date of reception of each EA as well as the manual counts, which will be later compared, to the computer counts.
- Development of computer applications.

  The computer programs to be developed include data entry screens, editing and tabulation.
- Data capture.

  This phase is performed depending on the technique used: computer assisted keyboard data entry or scanning technology with Optical Mark Reader (OMR) or Optical Character Reader (OCR).
- Preliminary report.

  The presenter indicated that CENTRACK module of IMPS in an appropriate package to use in this exercise. Indeed it permits to obtain the results disaggregated by sex and by up to three age groups at all geo-administrative entities.
- Data Editing

  It was recognised that this phase constitutes a bottleneck in most cases. It was therefore recommended that all subject matter specialist should be actively involved in the preparation of the edit specifications and in the validation of the results generated by the editing programme.
- Phase tracking

  It was explained that a computer application should be used to control and monitor the computer processing. CENTRACK package was recommended in this effect.

- Tabulation.

  A good strategy for smoothly performing this phase is the involvement of subject matter specialists in the design of the outline of tables, the preparation of the dummy tables using appropriate software, and the development of tabulation computer programs.

- Databases – data Dissemination.

  Countries in the region do not have the culture of databases. It was therefore recommended that national offices should embark on the generation of census databases, which then would be linked, to GIS software for thematic mapping. These activities should be part of the dissemination package to be strategically designed. Three types of databases were recommended: micro data databases macro data databases and tables oriented databases. Dissemination should also be computer-assisted with the use of floppy disks, CD-ROMs, digital videodisks (DVD) and Internet.

Data Editing

128. The presentation included four main topics:

- Errors generated during census process.

  Errors are introduced at all stages from enumeration to publication of results and are of different types: respondent errors, enumeration errors, field and office errors, miscodes, miskeys, scanning errors, logic errors in computer application programs.

- Computer editing.

  It reduces both time ends the possibility of introducing human errors. The computer edits should be carefully planned and programmers should design them based on specifications supplied by subject matter specialists.

- Methods of correcting data.

  Two methods were explained. The ad hoc imputation method, the hot deck-cold decks method.

- CONCOR as an editing tool.

  This package was presented as an appropriate tool for editing. It allows a number of functions such as structure checks, automatic modifications, consistency checks, edit reports, interactive editing, file matching, etc. The advantage of using this package is that if it is properly used, the majority of data will be consistent and clean.

Discussions on the presentation of document ECA/DISD/STAT/RPHC.WS/2/99/Doc.3.1 "Census post enumeration phase, "1. Summary"

129. One of the participants queried that manual editing and coding operations have not been dealt in the paper as well as in the presentation. Then the presenter responded that manual coding and editing have not been considered as part of the data processing activities in some countries. He further stated that these operations have not been a bottleneck and as a result this has not worried him.

130. The presenter also responded for the question on "What is data base" by elaborating that this constitutes "the data, data information and data information management" put together make a "data base".

Discussions on census post enumeration phase presentation " 2 Data Processing", Doc 3.2

131. In the discussions one of the participants raised the issue that computer assisted coding and automated coding methods are time consuming and that if these methods are practiced in any of the developing country. The presenter responded to these queries by stating that computer assisted coding can be done right at the field level by the enumerators and it is not time consuming. However, he revealed that it is an expensive method because it requires that laptop computer should provide the enumerators. He further stated that these approaches had not been practiced in developing countries. As far as the automated coding method is concerned, the presenter reported that soon some countries would start to utilize it.

132. With regard to the automated method, UNSD representative reported that instructions manual for the automated coding method has been prepared and those countries that are interested could get in touch with UNSD and get the necessary guidance. Another participant raised a query if it is possible for the automatic scanning machine to utilize a questionnaire prepared in any language. For this question the presenter stated that it is possible, but the only problem is that it needs writing a sophisticated computer program to convert alpha to numeric. Since this skill is in short supply in our part of the world as a result the skill in writing the program is the main constraint in adopting this method.

133. Moreover, a member of the UNFPA/CST indicated that the cost is prohibitive due to the fact that the scanning machine cost about 300 thousand US Dollars and the software that accompany the machine to do the operation costs over one million US Dollars.

Discussions on Census post Enumeration phase presentation "3 Data editing" Doc 3.3

134. In the discussion one of the participant stated that the presenter has not dealt with manual editing of data collected in censuses and surveys and that the computer cannot check the consistency of records for two persons in the household nor could it edit data on geographical area codes. Then, the presenter admitted that he overlooked manual editing because he is biased in favor of computer editing. However, he stated that computer can do the editing of the geographical area codes if this information is made available in a computer database. Another participant raised a question on to what is the highest number of children a woman could bear and what is the maximum number of children that the computer can accept as possibly reproduced by a woman. A member of UNFPA/CST reacted to this question by stating that a woman has biologically a span of 35 years to reproduce and she can theoretically reproduce one child every year, but it was observed that practically a woman could reproduce a maximum of about 25 children and hence the computer accept up to 25 children ever born for a woman.

b. Presentations and Discussions on Laboratory III

135. This was conducted in the computer room where participants had opportunity of manipulating a number of software packages for census data processing. These include IMPS (Datadict, Quicktab and Concor modules) both Dos and Windows versions, Redatam-Plus and WinR^{+}. The participants had to prepare edit specifications using the software test file and view the corresponding Concor program. Below is a brief description of the software packages covered.

IMPS package.

136. The Integrated Microcomputer Processing System (IMPS) is a system for entry, editing, tabulation, and management of data. In order to use any of these IMPS capabilities, it is necessary to first define the characteristics of the data to be processed through the Data Dictionary module.

137. **What is a Data Dictionary?** The Data Dictionary is used to give a description or a picture of how data are (or will be) stored in the computer. It allows to provide meaningful names for data items and to define characteristics such as whether the data item is made up of numbers or letters, how many

characters or digits there are in a data item, and whether a data item has an assumed decimal point. The Data Dictionary also allows to define the overall structure of a data file.

138. The workshop covered both the DOS and Windows versions of the IMPS dictionary.

139. **What is QUICKTAB?** QUICKTAB is the module of IMPS used to rapidly produce frequency distributions and cross-tabulations. Like other components of IMPS, it requires the description of the data file using the IMPS Data Dictionary.

140. Both subject-matter specialists and computer programmers can easily use QUICKTAB. There is no programming language to learn. The system is entirely menu-driven and can be learned in a matter of minutes.

141. QUICKTAB can be used simply as a table-producing system to analyse the contents of a ASCII file. The tables can be used in publications, if their format is adequate, or they can be used as analysis tools.

142. QUICKTAB (DOS version) produces two types of tables: frequency distributions and cross tabulations. Cross-tabulations may be 2-way or 3-way.

143. QUICKTAB in the Windows version produces up to 4-way tables.

144. **What is CONCOR?** CONCOR is an integrated set of computer programs used to identify and change invalid and inconsistent data being prepared for tabulation and analysis. CONCOR facilitates the editing of statistical data such as data from agriculture censuses, population and housing censuses, labour force surveys education surveys, and many other types of surveys.

145. A CONCOR program may be run after data have been entered or it may be run at the time of data entry. The main reason for using generalised software packages, such as CONCOR, instead of custom coded programs is the savings in programmer time. In general, once a user becomes familiar with the software package, the time that is spent on developing an application is significantly less than the time that would have been spent writing and testing programs to perform the same functions. Programmer time is a valuable commodity in most national statistical agencies. Software packages that can free the programmers from the time-consuming task of developing custom software for applications such as data

editing and tabulation will allow them to spend more time on other processing tasks for which there is no generalised software.

146. CONCOR has proven to be an effective tool for communication between programmers and subject matter specialists. The CONCOR language for specifying edits can be understood by both groups, and CONCOR edit statistics reports clearly show the result of each edit.

147. **What is REDATAM-Plus package?** This software is a user-friendly, interactive, microcomputer-based system that provides access to hierarchically arranged combinations of very large data files, including the microdata of national censuses. Aggregate statistics and large survey files. It can store and efficiently work with the complete census or sub-national geographic entities such as regions, cities, localities within the country.

148. It has been written with the capability to manipulate data and generate statistics such as frequencies, cross-tabulations and averages. Also it can produce extracted ("downloaded") files of selected records and variables for the areas of interest to permit further analysis by means of other statistical packages available for microcomputers. It comprises five major modules:

- Configuration

This module is used for establishing the environmental parameters for the session, such as the active database.

- Hierarchical selection

This module is used to define the area for which statistics will be produced.

- Statistical Processing

This module contains several facilities for data manipulation, record selection, generation of statistics and the printing of results. It also provides interfaces between REDATAM-Plus and other statistical packages.

- Database Dictionary

This module contains the definition of all variables of the database and other features to print it, export/import it to/from external file.

- Database Administration

These facilities assist in the process of generating and loading databases and derived variables. It contains tools to check the database consistency, the creation of downloaded databases.

149. **What is WinR+?** It is the recently developed Windows version of REDATAM PLUS. A WinR+ database normally contains microdata that permits the production of any crosstabulations for any user-defined geographical areas. The information in a database may be multi-sectoral in that it may come from different sources like censuses, surveys, data from administrative or other statistics.

150. It can store compress data of very large datasets with many millions of records. New variables may be derived from the database and tabulations and other outputs can be rapidly processed, all via geographical windows and without the assistance of a computer specialist.

151. While a particular user may want to process only sub-national areas, the entire database, compressed to around 25% of its original size, remains available to all users. The hierarchical geographical structure of the database makes it easier to produce outputs involving different levels of geography.

152. The software can also process a WinR+ database in association with an external database in one of the format such as MS-ACCESS, thereby avoiding the need to import small or frequently changed databases into WinR+. The WinR+ software has mapped display facilities and can link to various geographical information systems. The link allows the user to display and carry out spatial analysis of the indicators that can be generated with the software.

153. Taking advantage of the Windows and Visual Basic development environment WinR+ is considered to be more reliable, much faster than R+ and has none of the inherent memory limitations. However the present version does not have its own database creation facility and therefore relies on the

R+ generated database.

154. **What is ZonPlan?** It is a tool, which facilitates the spatial identification of specific areas with selected characteristics (target populations) through the use of socio-economic indicators obtained from various sources. The software simplifies the creation of the indicators and their display on maps.

155. It may be seen as a type of decision support tool for planning and policy making in various sectors concerned with economic and social development such as health, education, etc. The tool is designed for working with numerical population and related data in the public domain, in conjunction with digital cartography that can be manipulated by computer. The data may come from national censuses, surveys, administrative statistics; etc is stored in WinR^{+} format, which can also be connected to external databases.

156. ZonPlan program acts as the user-interface with WinR+ which takes care of the statistical processing of the commands that are automatically generated.

c. Post enumeration Survey for coverage and content error evaluation, ECA/DISD/STAT/RPHC.WS/2/99 Doc 3.4

157. The presenter based his discussion on document ECA/DISD/STAT/RPHC.WS/2/99/Doc.3.4. He identified the post enumeration (PES) surveys, as the main independent source of data for census evaluation. Two types of errors were identified, namely coverage and content errors. The main objective of the PES included the measurement of errors in census data. Participants were advised to conduct the PES shortly after the census enumeration and it should be independent from census activities. In planning for PES, it was emphasized that PES activities should be included in the census strategic framework, especially the budget and work plan.

158. The presenter identified seven broad activities in PES, namely: preparatory work; data collection; matching exercise; reconciliation exercise; data processing; coverage and content error estimates, and report preparation and dissemination. The PES resource requirements included: human resources, equipment, transportation, printing and reproduction.

159. The participants were exposed to procedures for estimating coverage and content errors. Two approaches for coverage evaluation were presented, namely: Traditional/classical and dual system approaches. The latter was the common method used in PES.

160. While 15 out of 47 African countries carried out the PES during the 1980 round of censuses, the number dropped in the 1990 round of censuses. Finally, the following suggestions were made to the workshop.

- Since there will be no error free census, even in the near future, census organizers should continue considering PES as part and parcel of the census programme;
- Countries should prepare strategic framework for the PES, including adequate budget and work plan;
- To avoid problems encountered in the past, countries should review their census evaluation programme;
- Countries should decide early enough on the technique to be used in the census evaluation; and
- Training of staff in the survey methods and sampling should be given proper attention

d. Presentation on census post-enumeration Phase, "DATA EVALUATION" ECA/DISD/STAT/RHPC.WS/2/99/Doc.3.5

161. The exercise to evaluate demographic data is carried out mainly for three reasons and these are:

- To identify the types of errors in order to know which sections of the data contain these errors and what procedures of data collection and processing led to these errors.

- To determine the accuracy of the data collected. Different indicators enable us to do this and to locate the interval of the provided accuracy range in which our observed data fall.

- To make appropriate adjustments to the data before we can use them confidently to estimate different demographic and related parameters.

162. Two types of errors are found in census data. These are:

- Coverage errors; and
- Content errors.

163. The coverage errors affect the completeness and quantitative accuracy of the census. For example, they arise from whether certain sections of the population were over-enumerated or under-enumerated.

164. The content errors affect the quantitative characteristics of the census such as quality of age and sex data. For example, if female children under the age of five are under-reported this would affect the quantity of the child population as well as the quality of the sex and age distribution data.

165. The methods for evaluating the data fall into two groups as follow:

- Direct Methods; and
- Indirect Methods.

166. Direct methods depend on at least two independent sources of information (such as the census and survey or the census and vital registration system) which have covered identical areas either at the same time or within a short period of time of each other to assess the coverage and content errors. The most common source of the direct method of information is the results of a post enumeration survey (PES). The survey is carried out immediately after the census and its success depends on the selection of a representative sample and getting an independent repetition of the first enumeration exercise under similar conditions before comparing the results from the two sources. A limited number of variables would be selected for the re-interview process to facilitate the matching of events.

167. The indirect methods include using a number of ways to check the accuracy of data; including:

- Those based on intercensal growth rates;
- Those based on comparison of specific groups with external sources;
- Those based on single year age data;
- Those based on grouped age data;
- Those based on simple demographic techniques;
- Those based on stable population models;
- Those based on survival ratio models;

- Those based on reverse and forward projection techniques; and
- Those devoted to specially evaluating fertility, mortality and migration data.

Discussions on Data evaluation and analysis presentation

169. In the discussions that followed one of the participant stated that his country follow similar procedure of data evaluation and analysis. That is, prepares preliminary census report, followed by analytical census report. However, he indicated that in depth analysis on some specialised topics are left to the university people. Then the presenter pointed out that this country is in the right direction concerning these activities. He also suggested that NSO's have to incorporate resources for in depth analysis of the data in the census budget. He also stressed that the NSO should approach business companies to contribute resources for the in depth analysis of the census data on topics of interest to their organisation.

170. Concerning demographic indicators, a participant stated that data users are interested in using these indicators such as infant and child mortality, expectation of life at birth, etc. but are not interested in the techniques of estimating the indicators. The presenter suggested that NSO's should try to explain the estimation methodology of the indicators to users. More participants also reported their experiences in the evaluation and analysis of the census data.

e. Presentation on census post-enumeration "Analysis, preparation of census reports, dissemination and promotion of utilization of census results" Doc 3.5

171. The analysis of the census data facilities the dissemination and optimal utilisation of the census results. But for a comprehensive analysis process to be initiated the following steps are to be taken:

- The preparation of a comprehensive analysis plan (during the preparatory stages of the census);
- The setting up of a team of analysts (composed of members from the Census Office, other Government departments, training and research institutions, as well as the non-Governmental Organisations and the private sector); and
- A plan for disseminating the results and for promoting the utilisation of the census results.

172. The analysis plan should include the following:

- A list of topics for analysis;
- A list of analysts responsible for each topic;
- The type of reports to be produced (i.e. whether preliminary report or main reports); and
- The content of each report as well as the time frame for producing the report.

173. It is expected that the analysis would cover a wide range of topics according to national needs, including emerging issues such as the HIV/AIDS. The Census Office would plan to publish the preliminary results within the shortest time possible. And the detailed results within a year or two. The team of analysts to carry out the detailed analysis should be composed of experts from training and research institutions, public and private sectors to work in collaboration with members of Census Offices/Statistics Office so that capacity building in data analysis for the Statistics Office is generated during this exercise. The consultants to be used in the analysis should be identified during the preparatory stages of the census and involved in earlier activities of the census.

174. The results should be followed by more intensified publicity/advocacy activities aimed at disseminating the results to policy makers, planners, and experts in non-governmental oorganisations (NGOs) and the private sector at national and sub-national levels, and at sensitising the same group of people in the utilisation of data for planning in different sectors such as education, agriculture, health, the provision of specialised services, and business and marketing. In addition, dissemination should be extended to the civil society using appropriate media such as radio. TV, newspapers, booklets, fliers and posters.

Discussions on "Dissemination and Utilization of Census Results" Presentation

175. In the discussions that followed the representative of the UNSD pointed out that dissemination of census results is one of the crucial activities in the census operation. This activity should be carried out through organizing dissemination seminars, disseminating hard copies to potential users freely and by selling the copies at reasonable price, prepare a simplified version of summary of the census results and attempts should be made to reach as many users of census data at grass roots level, -- etc.

176. Participants reported on their experiences of disseminating and utilization of census results. Most of them reported that they organize dissemination seminars to parliamentarians, higher government officials, trade union leaders, media personnel, --etc. In the seminars different professionals present census results of their respective specialization such as population size and characteristics, education, economic activity, migration, fertility, mortality, population projections, housing, --- etc. to the dissemination seminar participants.

7. Any other business

174. A representative of the secretariat informed the participants about the workshop on the improvement of the quality of African statistics. He noted the importance of quality statistics and the role that statisticians and census experts had to play in ensuring that decisions were made on basic of reliable, accurate, timely and relevant statistical data. He urged the participants to review the manual use in improving the quality of their statistical data.

175. In addition the representative of the secretariat informed the participants about the International Migration project under implementation by EUROSTAT and the Netherlands Interdisciplinary Demographic Institute and the conference on Pull and Push Factors which ECA participated in upon invitation of EUROSTAT.

176. He explained that the purpose of the project was to assist in policy formulation. The project had yielded a great deal information on the economic causes of migration, future migration intentions and the mechanisms for migration.

177. The exercise was path breaking and demonstrated that a large-scale exercise using the same survey instruments can be successfully implemented by several countries at the same time.

178. The participants noted the initial results of the project particularly the causes of international migration and the future implications of the study on cooperation between the European Union and developing countries. The participants in addition noted the need for strengthening the capabilities of national statistical services in Africa to enable them provide accurate and reliable information for decision making.

8. Closing Session

179. Mr. Dickson Mzumara of the ECA Development Information Services Division (DISD) closed the workshop on behalf of, Ms. Karima Ben Soltane, Chief of the Division. Expressing her satisfaction in the manner the workshop was conducted she observed that, during a very short period many issues were covered, related to planning and conduct of population censuses. Ms. Soltane thanked the participants for their dedication and collaborative work during the whole period of the workshop.

180. The participants were reminded that census planning and organisation was a complex and costly activity, which required the involvement of many stakeholders including governments at the highest levels. In addition, she emphasised the need for census staff to produce accurate census data and disseminate such data through user friendly media.

181. The Chief of DISD expressed her appreciation to the Consultant, Dr. Abdudahi for the active role he played in the organisation and conduct of the workshop. She also thanked advisors from UNFPA/CST, Addis Ababa: Messrs. Roger Hare, Israel Sembajwe, Jean Marc Hie, Diji Poppola and Jason Onsembe for their contribution in organising the workshop and as resource persons. In addition, she thanked Mr. Jeremiah Banda of United Nations Statistics Division for his exhaustive contributions as resource person, participant and for his technical support to the workshop. She also recognised the efforts made by Mr. Rene Rakotobe and support staff of DISD in putting together the workshop programme and successfully implementing it.

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Training workshop for national census personnel within the framework of the 2000 round of population and housing censuses

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