

6850248
PN-KAW-138
FSN = 47673

REPORT OF CENSUS BUREAU PROJECT PAPER TEAM
SENEGAL FAMILY HEALTH PROJECT
1987 SENEGALESE GENERAL CENSUS OF POPULATION AND HOUSING

Prepared for USAID/Dakar by:

Wanda K. Dougherty
Susan P. Enea
Selma L. Sawaya
International Statistical Programs
Center
U.S. Bureau of the Census

May 24, 1985

Report on Senegal Family Health Project

Project Paper Team

Table of Contents

- I. Introduction
- II. Population Data and Policy Component and Background
 - A. Justification for conducting the 1987 General Census of Population and Housing
 - B. USAID Strategy
 - C. History of the 1987 General Census of Population and Housing
 - D. General Schedule of Census Activities
 - Preliminary Activities
 - Preparation for Enumeration
 - Enumeration Activities
 - Data Processing
 - Publication and Analysis
 - E. Population Data and Policy Component Activities
 - 1. Management
 - 2. Technical Assistance
 - Cartographic Activities
 - Questionnaire Design and Table Specifications
 - Data Processing Preparation and Implementation
 - Development of a Post-Enumeration Survey
 - Policy Development (Sara Seims' draft)
- III. Analysis of Major Technical Assistance Needs
- IV. Implementation Plan
 - A. U.S. Census Bureau Role and Contractual Arrangements
 - B. Assistance from other Sources
 - C. Commodities
 - D. Conditions Precedent for GOS - USAID Support for BNR
- Annex I - Organigramme de la Direction de la Statistique
- Annex II - Organigramme de la Division Des Enquetes et de la Demographie

- Annex III - Description of the Division of Surveys and Demography
- Annex IV - Project Justification
- Annex V - Schedule of Activities
- Annex VI - Statement of Work for U.S. Bureau of the Census Advisors:
1987 Senegal General Census of Population and Housing
- Annex VII - Tentative Implementation Schedule for U.S. Bureau of the Census
Technical Assistance: Senegal BNR
- Annex VIII - Preliminary Implementation Plan: Schedule of Estimated Costs
by Fiscal Year
- Annex IX - Project Budget for BNR
- Annex X - Statement of Work for Economic Commission for Africa Coordinator

I. Introduction

The goals of the seven-year Family Health Services Project are to improve the health of Senegalese women and their children through more effective birth spacing and to achieve population growth rates consistent with Government of Senegal (GOS) ability to provide for basic health and social services. One purpose of the project related to the goals is to ensure that sufficient demographic survey and analytical capability exists to inform policy makers of the impacts of rapid population growth.

This paper describes the project component that will address this purpose. The component is composed of technical assistance, training and provision of equipment to support the Direction de la Statistique (DS) first in its implementation of the 1987 General Census of Population and Housing and then in a specialised intercensal survey program. In particular, support will be given to two bureaus within the DS: 1) the Bureau National du Recensement (BNR), responsible for census implementation; and 2) the Bureau Informatique (BI), responsible for census processing operations. Annex I and Annex II show the placement of these bureaus within DS. Annex III contains a description of their staffing and functions.

AID inputs for this project component will be supplementary to the inputs of the Government of Senegal (GOS). In addition, the United Nations Fund for Population Activities (UNFPA) will provide financial support to the GOS for census operations.

II. Component Description and Background

A) Justification for 1987 General Census of Population and Housing

One project goal is to improve the health of Senegalese women and their children and its purpose is to strengthen the capabilities of Senegalese institutions to promote, support, coordinate and sustain family health programs. The population data and policy component of the project will contribute to both by helping to establish the means of data collection, processing and analysis that will provide information to formulate sound policies in family health and other sectors. The 1987 General Census of Population and Housing will serve as an excellent vehicle for provision of on-the-job training in the use of appropriate data collection and processing techniques.

The GOS had scheduled a Census of Population and Housing for 1986. However, due to the lack of financial resources, particularly related to cartographic activities, it was postponed until 1987. Financial problems have often led national leaders and international donors to relegate the need for a decennial census to a low priority. However, in the case of Senegal, both USAID and UNFPA recognize the census as a fundamental tool for development planning. It serves as the benchmark for comparison with censuses and other surveys; it provides basic demographic data not only for administrative jurisdictions but also for education and electoral districts and health care service areas or any geographically identifiable area. When completed periodically (customarily every ten years), censuses provide information against which change over time can be measured and projections made.

An accurate census is at least as important in developing countries as it is in more industrialized ones. Other data sources do not have the breadth of coverage required to measure changes in demographic characteristics, migration, and social and economic conditions which are often more dramatic and serious in developing countries. A periodic census is the only means of recording and forecasting detailed changes of this type and of identifying where they are occurring.

The census will provide data for: 1) assessing the working population and its distribution by age, sex, location, and type of work; 2) estimating housing requirements and evaluating existing housing; 3) indicating the number of school-age children to establish educational policies such as number of teachers required and location of schools; 4) improving the geographic distribution of medical care and prevention networks; and 5) assessing the need for family health and planning activities.

The UNFPA justification statement is contained in Annex IV, which is an excerpt from the agreement between UNFPA and the GOS.

B) USAID Strategy

Attainment of the project purpose requires the existence and utilization of data in planning, operating and evaluating family health programs. The strategy of USAID is two fold: first, to provide the Direction de la Statistique (DS) with an increased capacity to meet family health information needs within the limits of modern census and survey practice. This involves more than the collection and processing of data and the publication of results. It means careful attention to questionnaire and survey design, quality control at all steps of the process and the ability to retrieve, statistically analyze and interpret data for specific purposes.

The second aspect of the strategy is to encourage the incorporation of census and survey outputs in family health policy determination, program planning and project design.

The major sources of population and family health data are population censuses, specialized demographic surveys and vital statistics registration. Each source reflects a different approach to population data collection. A census enumerates the entire population, a survey enumerates a scientifically chosen sample of the population and vital registration records births, deaths, marriages and migration at the district office level.

The survey approach, while more economical and manageable, cannot be implemented without an accurate and up-to-date sample frame with population counts by age and sex for all administrative jurisdictions. The only way to develop such a frame is through the complete enumeration of the population i.e., a population census.

The system of vital statistics registration in Senegal is incomplete, and varies greatly in its coverage from urban to rural areas. The population census therefore remains the only possible approach to update demographic statistics. It will provide both the basis for a sample frame and a core of trained statisticians and data processors in DS to carry out future demographic surveys. Future health surveys proposed for the intercensal survey plan will rely on both the sample frame and trained staff developed during the 1987 Census of Population and Housing.

C) Background of the 1987 General Census of Population and Housing

Upon gaining independence in 1960, the existing government felt the need to establish a plan for economic and social development based on adequate knowledge of its population. This need led the governing powers to authorize a national demographic survey in 1960/1961. This operation was planned and executed by DS with financing from the Government of France.

The second survey of this type, executed by DS and entirely financed by the GOS, was conducted in 1970/71. The nature of these surveys was such that only a limited use of the results could be made.

Thus, at the time of the first general population census in 1976, there was an absence of demographic data below the regional administrative level. This gave the census a special importance, in that it was expected to make up for the prior lack of complete and detailed population data which had so seriously hampered the efforts of social and economic planners.

The 1976 Population Census was thus the first operation of its kind effected in Senegal since its independence. Its objectives were voluntarily limited to the determination of the population size and its geographic distribution by certain key characteristics (sex, age, marital status, ethnicity, education and activity).

This first census gave a much more exact idea of the total population of the country, and it was seen that the prior survey results had under-estimated the population by approximately fifteen percent. The cartographic work done by the Bureau National du Recensement (BNR) provided maps used by all the departments; the listings from each enumeration district were used to extract the sample for the postcensal surveys conducted by DS.

During the execution of the 1976 census, the field operations were carried out without any serious problems, but publication of the data was delayed well beyond the expected date due to serious problems in the processing of the data. These problems were caused essentially by five factors: (1) the use of a questionnaire which required manual coding of all items instead of a pre-coded questionnaire; (2) the keying from the questionnaire of data which were never used and were not planned to be used in the tabulations, thus prolonging the time needed for keying; (3) the lack of sufficient number of adequately-trained data processing specialists; (4) the lack of continuity over the processing period among the programmers/analysts involved; and (5) the use of inappropriate software for the editing and tabulation of the data. All of these factors contributed to the unacceptable delays in publishing the 1976 data.

In spite of all these problems, the data provided by the census were used as the basis for reallocation of electoral districts and local headquarters for certain organizations. They were also profitably used in the preparation of the 6th Economic and Social Development Plan, and they have been used as a basis of several feasibility and market studies carried out by the private and quasi-public sectors.

It can thus be seen that the results of the 1976 census have not only been utilized for planning and administrative needs, but they have also served as a base for demographic research. However, even though the publication of those data filled in a number of gaps existing in the statistical documentation of the country, there still exists a great distance to cover before arriving at a complete picture of the demography of Senegal. The need to carry out a second census follows from the fact that the 1976 data are out-of-date and thus no longer useful, and that they can be updated in a reliable fashion only by another full census.

D) Summary of Census Activities

The census activities are divided roughly into five phases: (1) preliminary activities; (2) preparation for the enumeration; (3) the enumeration itself and the post-enumeration survey; (4) data processing; and (5) publication and analysis. The five phases are summarized below. A detailed schedule is contained in Annex V.

Preliminary Activities

Preliminary activities include the promulgation of the legislative texts establishing the 1987 census as an official government activity, and the reinforcement of BNR staff for the duration of the census project. The legislative action authorizing the census is currently scheduled for July 1985. Also at this time an Inter-Ministerial Committee will be established consisting of representatives from the Ministries of Education, Transport, Communications, Health and others. These Ministries, in addition to being prime users of the Census data, are expected to support various phases of Census activities.

Preparation for Enumeration

During the preparation phase, scheduled to begin in August 1985, the BNR will maintain contacts with potential users of the data, as well as with regional authorities, and will receive visits from Economic Commission for Africa (ECA) experts in census and data processing operations. The BNR will also begin preparation of the technical documents necessary for a well-conducted census, including the tabulation formats, the questionnaire derived from these tabulations, the specifications for validating (by computer) the data to be collected with the questionnaire, all internal manuals and training documents, and documents used to monitor the flow of census forms through various operational stages. Perhaps the most important operation to be undertaken during this phase will be Census cartography, which is scheduled to continue throughout 1986.

BNR is planning to give first priority to the mapping of the areas to be used during the Pilot Census, scheduled for the second half of April 1986. The results of the Pilot Census will be evaluated and will be used to make final modifications to the Census questionnaire and enumeration procedures.

During this period BNR will also begin the publicity campaign designed to make the populace aware of the importance of the census activity and willing to cooperate.

Enumeration Activities

During this phase, scheduled to begin in March 1987, BNR will begin the training of the more than 9000 persons who will be actively involved in the enumeration itself, scheduled for the second half of April 1987. (This date may be changed if it conflicts with Ramadan).

The post-enumeration survey, which at this point is intended only to measure coverage, is planned for the second half of May 1987.

Data Processing

Immediately following the enumeration phase, the completed census questionnaires will be returned (via local and regional offices) to the central office, where the Bureau Informatique (BI) of the Direction de la Statistique will assume responsibility for their processing.

This procedure will encompass five distinct phases: 1) check-in of questionnaires; 2) manual editing and coding, and verification of such; 3) data entry and verification of keying; 4) computer editing of keyed data (for valid values and consistency between items); and 5) production of tabulations. It is currently estimated that the processing phase will last at least two years.

Publication and Analysis

BNR plans to begin publication of the tabulations, on a regional basis, approximately 15 months after the enumeration date. Based on the number of tables they expect to produce and the planned work flow for data processing, BNR estimates that the total time required to produce the planned tabulations will be approximately 10 months.

Analysis of the Census data is scheduled to begin in July 1989, when (presumably) all the tabulations will have been published. This activity will require approximately one year, ending the 1987 census operations by mid-1990

BNR plans to publish summary volumes of Census data, one for the nation as a whole, and one for each of the ten administrative regions. Once the raw data have been analyzed, they will prepare separate analytical reports for each region. Four additional volumes will be published: two thematic reports focusing on demographic issues, Census Methodology and a list of all villages in the country.

E) Component Activities

1. Management

The implementing institution for the 1987 Census is the Bureau National du Recensement (BNR), one office of the Division of Surveys and Demography within the Direction de la Statistique (DS) of the Ministry of Economy and Finance. The BNR has a staff of approximately 48 full-time persons, including 13 Statistician-Demographers, 5 Statisticians, and 12 Statistical Agents. In addition, there are 3 cartographers. Data processing of the Census will be accomplished by the staff of the Bureau Informatique (BI) of DS.

Staff of the BNR will be augmented during the Census period by inter-ministerial transfers of skilled personnel and by reassignment of DS employees. This will be necessary given the small size of the BNR staff and the fact that few of the staff worked on the previous Census.

The 1987 Census will be under the direction of Ibrahima Diop, Director of the BNR. However, the Census requires the support and close collaboration of other GOS institutions. Among the most important are the Ministry of the Interior, which will provide guides to remote rural areas; the Ministry of Defense, which will provide logistical support; and the Ministry of Economy and Finance, which will provide computer facilities.

2. Technical Assistance

The technical assistance to be provided by USAID will be short-term assistance designed to facilitate BNR Census preparation and implementation activities. The short-term assistance will focus on: 1) cartographic activities; 2) questionnaire design and table specifications; 3) data processing preparation and implementation; 4) the development and execution of a Post-Enumeration Survey; 5) post-Census analysis activities; and 6) policy development.

The U.S. Bureau of the Census assistance will mainly take place during the execution of the first four activities; private consultants and non-governmental organizations will participate in the latter two activities.

Cartographic Activities

Technical assistance in Census cartographic activities will be provided by the U.S. Bureau of the Census. A cartographic workshop tentatively scheduled for September 1985 will be funded by an agreement between the U.S. Bureau of the Census and AID/S&T/POP. If approved, it is anticipated that an agreement between the U.S. Bureau of the Census and AID/AFR will provide funding for short-term technical assistance, cartographic equipment and materials, per diem for BNR staff and salaries for temporary BNR staff carrying out the mapping program.

The Family Health Services Project will not include funding for cartographic technical assistance. It will fund the following commodities for the field mapping program: four vehicles, gasoline and motor oil, and miscellaneous expenses (e.g., guides, boat rentals, vehicle repairs, etc).

Questionnaire Design and Table Specifications

The BNR has not yet developed a detailed list of questionnaire content. In general, however, BNR has stated its intent to include housing questions in the 1987 Census. The 1976 Census contained only population questions.

A survey statistician from the U.S. Bureau of the Census will assist in the development of a tabulation plan with draft table formats (outlines) that specify the output desired from the Census. From these table formats, the content of the Census questionnaire, in terms of variables and their indicators, will be established. Once established, questions and question sequences will be developed to obtain data on the chosen variables. Finally, the questionnaire itself will be designed to facilitate enumeration and processing.

A data processor will carefully review the draft questionnaire to ensure that it can be easily keyed and processed. Working with the questionnaire, the table outlines, and the estimated number of households the data processor will recommend a software system for processing the Census.

Data Processing Preparation and Implementation

Data processing/systems analysis technical assistance will be provided by the U.S. Bureau of the Census. BI staff will be trained to use several computer software packages used to enter, edit and tabulate data. Census Bureau staff will also work closely with BI analysts to prepare an overall plan for Census processing.

CENTS 4 (CENSus TABulation System, version 4) is a generalized computer software package written in structured COBOL. It produces statistical cross-tabulations of census and survey data in a format which permits publication of tables without further manual preparation. A team of data processors will install the package and teach a three-week course to the available Senegalese programmers. The course will include formal lectures and hands-on application of the package, with specific reference to the tables required for the 1986 Pilot Census.

Training will also be given in CONCOR (CONsistency and CORrection), a generalized computer software package written in structured COBOL which has already been installed on the computer at the Ministry of Finance. CONCOR identifies missing, invalid or inconsistent data in census and survey files. It can also perform automatic imputation procedures to correct these errors. This assistance will also be given by a team of programmers in a three-week workshop which will emphasize census applications.

In addition, BI supervisory personnel will learn to use a data entry software package which will permit the utilization of microcomputers for the data entry process. In turn, they will train staff actually responsible for data entry. While training BI personnel in the use of these packages, the Census Bureau advisors will work with them to develop the specific programs to be used during the actual data entry.

After completing the data entry software, the BI analyst responsible for processing the Census will work with the Census Bureau counterpart in developing the overall system for this activity. This will include a general flow chart of the system, specific and detailed charts of the individual elements in the system and detailed specifications for any custom-coded programs required. During the development, testing and production phases of this system, Census Bureau advisors will monitor activity of BI personnel.

The Census Bureau will provide general supervision and monitoring during critical stages of data processing immediately prior to and following the Census enumeration, and will respond to anticipated but as yet undefined difficulties likely to occur during processing, both in producing preliminary results and in processing complete data.

Development of a Post-Enumeration Survey

No matter how careful statistical offices are in carrying out a census program, errors will inevitably result, most typically from failure to follow correct enumeration procedures, omissions, etc. An assessment of the impact of the errors is required in order to determine the reliability and completeness of the Census data. One way to do this is to compare the results of the Census with the results of a Post-Enumeration Survey (PES) conducted soon after the Census itself.

Mathematical statisticians from the U.S. Bureau of the Census will conduct a workshop on census evaluation and post-enumeration surveys. Participants will learn concepts and techniques of post-enumeration surveys, as well as alternative procedures and definitions associated with coverage error. Content of the PES questionnaire will be decided and preliminary matching rules and procedures will be developed.

Additional technical assistance will be given in the areas of preparation of a sample design and statistical plan for the Post-Enumeration Survey, field observation of the PES, and development of estimation methodologies.

Policy Development

In order to ensure that the results of the Census are made available to GOS planners in a useful and appropriate manner, the BNR will undertake the following activities:

- participate in an in-country training seminar to review the methods by which Census data analysis can be made more useful to development planners (mid-1988);
- hold a workshop for GOS ministries and other interested parties detailing the major findings of the Census, inter-censal trends, and the implications for development planning (mid-1989);
- meet individually with the major groups who must use Census data for their planning and assist these groups by the preparation of special analyses and computer models (mid-1989 to 1991);
- produce a report which analyzes the results of the Census in a way useful to non-statisticians who nevertheless need to be cognizant of demographic trends (late 1989);

--document the procedures and methodology used to carry out the Census and evaluate data accuracy. Documentation, often referred to as a Procedural History, will include a description of Census planning and publicity, inter-ministerial cooperation, questionnaire content and definitions, quality control procedures, review of data processing system, description of the data files generated from the Census, review of data processing activities and problems encountered, discussion of data reliability and suggestions and recommendations for the next census.

The bilateral project will provide support for the workshop and training costs for the special reports. It is expected that central resources will be used to provide the necessary technical assistance for these activities.

GOS Logistical Support

Little logistical support is required for the short-term consultants provided by USAID, except for the following:

1. DS/ENR guides for field trips taken to observe the data collection of the post-enumeration survey; and
2. Classroom, supplies and an overhead projector for the CENTS 4, CONCOR and PES workshops.

III. Analysis of Major Technical Assistance

Prior to the visit by three U.S. Bureau of the Census staff in March, 1985, the staff of BNR prepared a detailed plan of Census activities. The BNR staff identified three areas for which they considered technical assistance to be appropriate: cartography, data processing and analysis and design of a master sample frame.

As a large measure of the proposed cartographic activities were being funded by a separate PASA agreement between USAID and the U.S. Bureau of the Census, little time was spent on further detailing these activities, beyond identifying some commodities which will be purchased under the terms of the bilateral agreement. Census Bureau staff also suggested that technical assistance in the design and execution of a post-enumeration survey would be appropriate.

Following a week-long review of planned Census activities, the U.S. Bureau of the Census team and BNR staff were able to specify the most appropriate nature, scale, and timing of project inputs to these substantive areas to assure the maximum effectiveness in reaching the objectives of a quality Census with timely availability of results. A plan of technical assistance was thus designed to correspond with these objectives.

One of the major bottlenecks to the timely publication of the results of the 1976 Census of Population was in the area of data processing. A processing software package was used which was itself slow. In addition, programming errors resulted in miscalculations and the publication of erroneous data. In order to avoid similar difficulties with the 1987 Census of Population and Housing, the Census Bureau team strongly recommends the use of a concise, precoded questionnaire, and emphasizes the value of detailed table definitions, tabulation specifications, and editing protocols and specifications. Using a precoded questionnaire can greatly reduce coding errors as well as facilitate and speed data entry. Well-developed edit specifications are necessary to find and correct errors, and imputation specifications can be used to accurately adjust data. A well-developed set of table formats and specifications permits computer processing of tables with minimal manual intervention.

Both CENTS 4 and CONCOR will greatly facilitate Census processing by reducing the amount of custom programming necessary. Given that the very limited programming staff available to DS has had no experience in processing a census, these packages will facilitate their work because less experience is required to use them than to write custom COBOL programs.

Although the General Census of Population and Housing itself provides data on basic demographic, educational, and employment characteristics of the population, it is preferable to conduct small-scale sample surveys in order to collect detailed information on health, migration, fertility, and mortality. In order to successfully implement such surveys, it is imperative that a statistically sound national sample frame be constructed can be used in the design of thematic surveys, such as are planned to take place during the 1987-1997 intercensal period.

The Census Bureau consultants concur with BNR's request for technical assistance to develop a master sample frame, and suggest that this activity take place once the majority of primary Census processing activities have been completed.

The last area for which the Census Bureau team strongly recommends technical assistance is the preparation, execution, and processing of a post-enumeration survey (PES). A post-enumeration survey was conducted after the 1976 Census of Population, but review of the published methodology and discussions with BNR staff indicated that the survey was in fact not conducted independently of the Census and that its usefulness in determining completeness of coverage was therefore limited. Given the level of effort being made to guarantee that the 1987 Census is of high quality, it is equally important to conduct a high-quality PES which can be successfully used to determine coverage and, if desired, quality of response to particular questionnaire items.

Technical assistance should therefore concentrate on identification of a PES sample independent of the Census population, the design of an appropriate questionnaire, specification of matching procedures to determine PES coverage of the Census population, and appropriate statistical techniques to estimate coverage errors.

IV. Implementation Plan

A. U.S. Bureau of the Census Role and Proposed PASA Statement of Work

The U.S. Bureau of the Census will provide technical assistance and training in questionnaire design and coding; development of specifications to code, edit, and tabulate the data; overall planning for the data processing; implementing data processing and software use; sampling, design, and estimation methodology for the post-enumeration survey to evaluate coverage; and preliminary design of a master sample frame. Assistance will be collaborative in nature and will correspond to actual scheduled Census activities.

The Census Bureau role will be specified in a Participating Agencies Service Agreement (PASA) between AID and the Census Bureau. The PASA will include a scope of work for technical assistance and will cover personnel costs (including salaries and benefits), travel and per diem costs, miscellaneous costs such as translation costs and computer time, and Census Bureau overhead.

Annex VI contains a preliminary scope of work for the U.S. Bureau of the Census short-term advisors. Annex VII contains a preliminary schedule for Census Bureau technical assistance activities. Annex VIII contains preliminary cost estimates for the Census Bureau technical assistance, by year. These cost estimates include the activities shown in Annex VII, as well as approximately six person-months for PASA management over the life of the project.

B. Other Assistance

Assistance for Census activities is also being provided by the United Nations Fund for Population Activities (UNFPA). More specifically, the UNFPA is supporting the Pilot Census, a publicity campaign, part of the enumeration activities, and printing costs of questionnaires, manuals, summary pamphlets and eleven reports of raw data (one national report and one for each of the ten administrative regions in Senegal). It is not clear whether technical assistance will be offered during the course of any of these activities; none is specified in the project agreement between UNFPA and the GRS.

Additional short-term technical assistance for data analysis and survey activities will be provided through contractual agreements between AID and private consultants or other non-governmental entities.

C. Commodities

The purchase of commodities in support of the 1987 Census of Population and Housing will be managed through a separate contractual agreement negotiated between International Science and Technology Institute (ISTI) and AID. The U.S. Bureau of the Census is not responsible for any procurement activities.

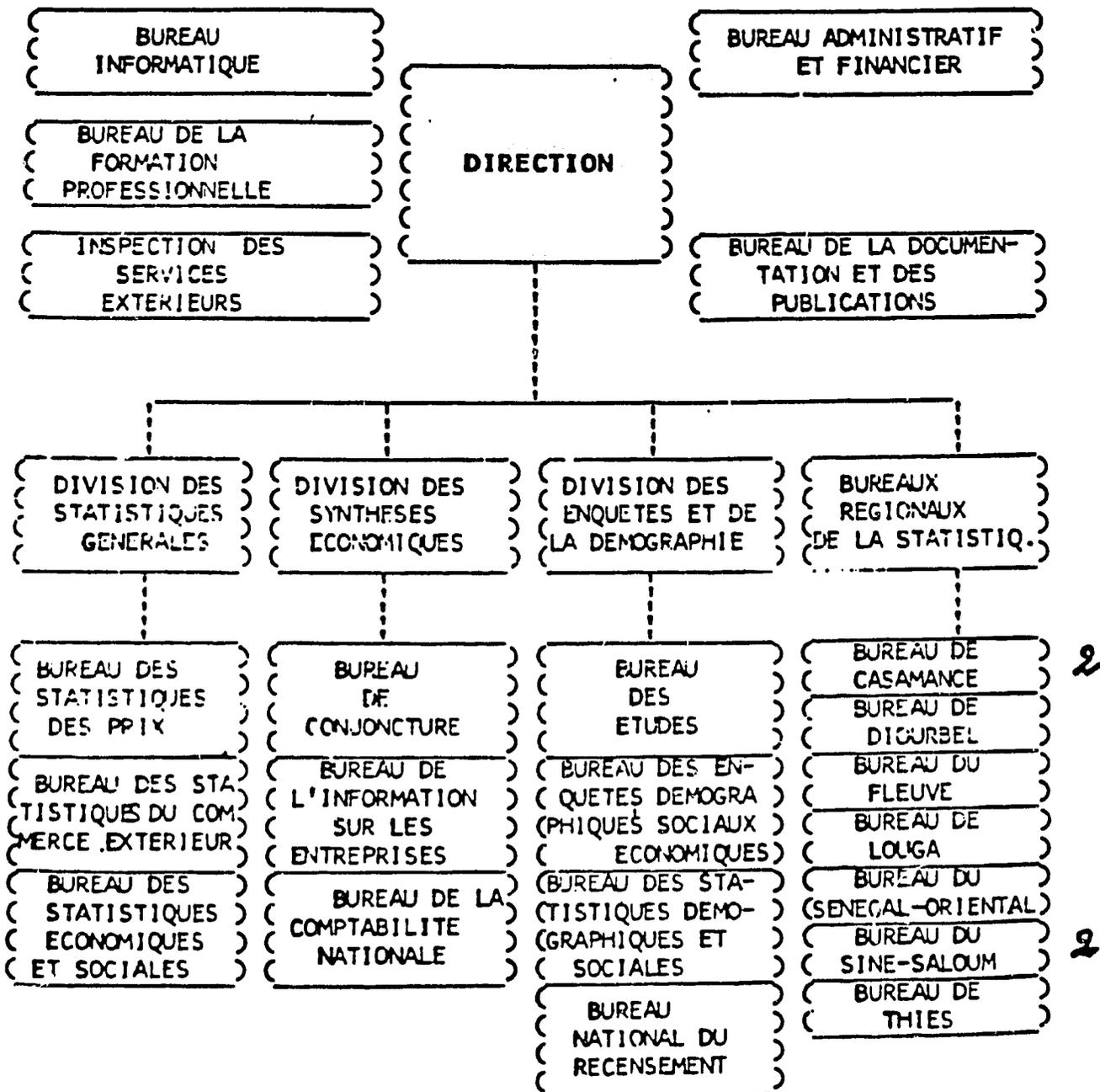
D. Conditions Precedent for GOS-USAID Support for BNR

In order to implement the above program of activities, the GOS will provide the following:

1. Assignment of appropriate trained personnel to all phases of Census preparation and execution.
2. A minimum of one data entry specialist and three computer systems analysts/programmers to be assigned to the Bureau Informatique for the duration of Census processing.
3. Authorization of access to the Ministry of Finance computer facilities and priority for Census processing for those tasks not completed on the microcomputers at the BI.
4. Authorized use of 500 GOS vehicles during the enumeration process and appropriate logistical support for the transfer of Census materials.
5. Authorization of tax and customs exemptions documented with appropriate certificate the purchase of all equipment and materials listed in the budget.

Annex I

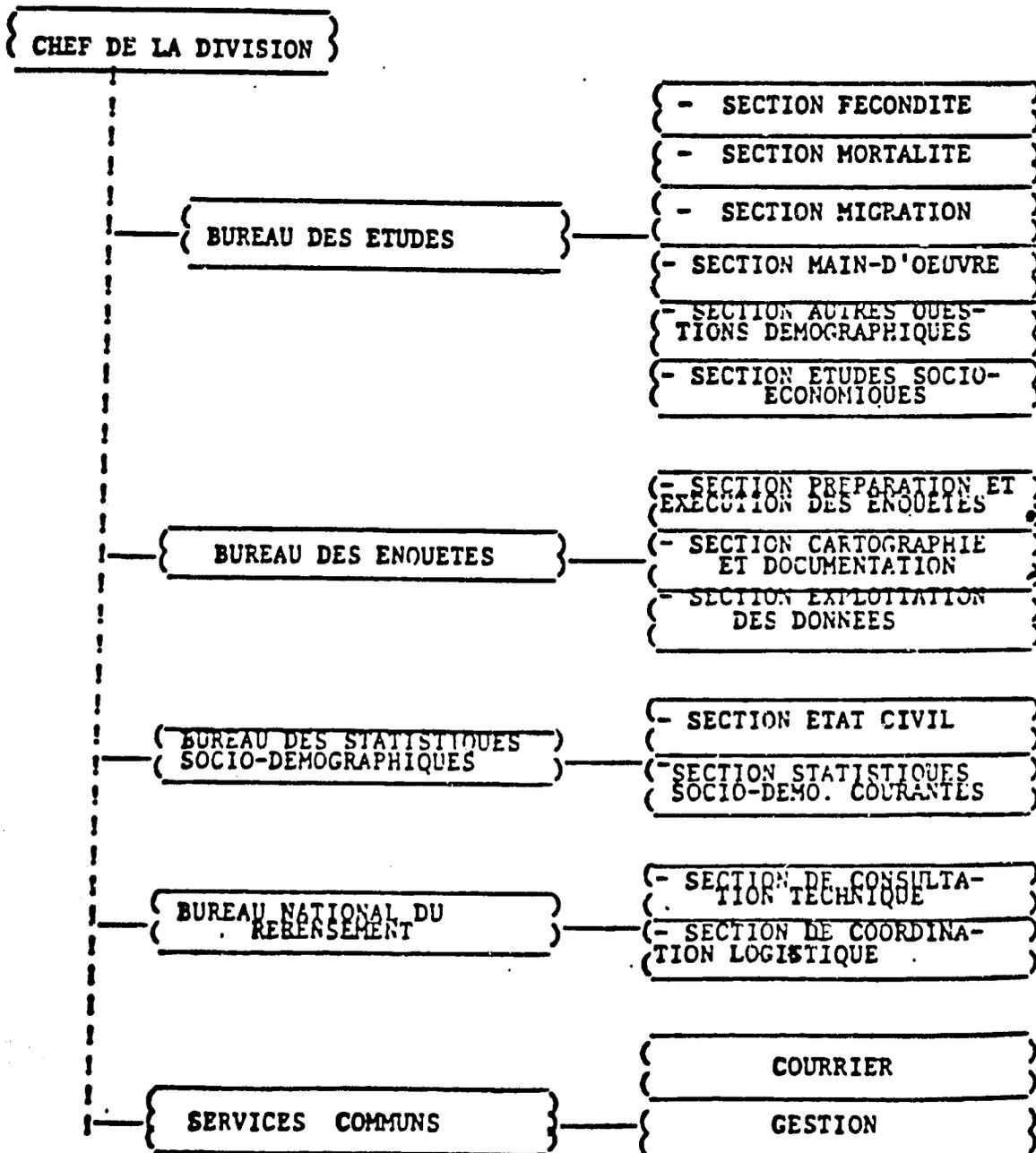
ORGANIGRAMME DE LA DIRECTION DE LA STATISTIQUE



Annex II

ORGANIGRAMME DE LA DIVISION DES ENQUETES
ET DE LA DEMOGRAPHIE

-:-:-:-



Description of Division of Surveys and Demography

I. Role and Attributions of the Division of Surveys and Demography (DSD)

1.1 Personnel

The DSD is one of three divisions which make up the Department de Statistique (Office of Statistics) whose structure is defined by Article 63 of Decree 80-892 dated July 29, 1980 of the Ministry of Economy and Finance. This article stipulates that "the Office of Statistics is responsible for the collection, centralization, coordination, establishment, and diffusion of all statistics necessary to the design of the economic and social policy of the country but also to the evaluation of the results of such policy, considering the current situation and the objectives of the plan."

In other words, the Office of statistics is the governmental structure equipped to produce and disseminate numerical information necessary to the awareness of problems which may occur in the different areas of life. Only data which are published by the Office of Statistics are considered official by the Government of Senegal.

At the heart of the Office of Statistics, and as its name indicates, the Division of Surveys and Demography is responsible for the conception and execution of demographic and socio-economic surveys which have been scheduled by the Office of Statistics. In addition, the Bureau National du Recensement (National Census Bureau), created within the DSD by Decree 74-367 dated April 19, 1974, had its mission defined as the execution of the 1976 Census of Population. (The current organizational structure of these entities can be seen in Annexes I and II.)

1.2 Organization

The DSD is composed of the following four bureaus:

- a bureau of studies;
- a bureau of surveys;
- a bureau of socio-demographic statistics;
- a census bureau, better known as the National Census Bureau

Each of these bureaus is made up of various sections (see Annexes I and II). In addition to these bureaus, the DSD has certain common services (e.g., administrative), a cartography workshop, and a printing workshop.

The DSD is under the responsibility of a division chief, whose mission is to coordinate and supervise the activities of the various bureaus and to assume the role of monitor of the budgets involved. The DSD is also the head of the BNR.

The role and attributions of each bureau are as follows:

- The bureau of studies is responsible for the conception, technical preparation, field operations and follow-up, and analysis of results of all studies and surveys of mortality, fertility, labor force, migration, and other demographic or socio-economic phenomena. Each study makes up a separate unit within the bureau.
- The bureau of surveys is in charge of planning and implementation of surveys in the field (cartography, sampling plan, data collection and processing).
- The bureau of socio-demographic statistics is responsible for collection, updating, and analysis of statistics issued by certain administrative services (marital status, health, education, employment, housing, etc.)
- The Bureau National du Recensement (National Census Bureau) was instituted in 1974 to carry out the 1976 Census of Population, and it is still responsible for all of the tasks of planning and execution of a census, from the initial idea to the analysis of results.

II. Facilities

Three facilities will be particularly involved in the activities of the 1987 General Census of Population and Housing; they are the National Census Bureau, the Regional Census Offices, and the Bureau Informatique(Data Processing Bureau).

A. Bureau National du Recensement (National Census Bureau, BNR)

The major responsibilities of the BNR are as follows:

1. Planning of all activities necessary to the carrying out of the Census, including conception, technical preparation, preliminary and final design of the questionnaire and all other related documents, the selection of the method to be used to collect the data, and liaison with the BI and the Regional Census Offices (RCOs).
2. Implementation of all preliminary activities--cartography, preliminary cartographic studies, geographical subdivision, selection and training of Census crew leaders, supervisors, and enumerators, and preparation and distribution of all material to be used in the Census.
3. Publicity, for which all of the country's media will be involved in the preparation and diffusion of material. Planned are the production of a publicity film, the organization of a poster network, and the setting up of a system to inform appropriate local authorities of census activities in their areas.
4. Organization of activities in the field, including data collection.
5. Publication and analysis of the data, which is planned to be presented to the public as was done for the 1976 data. This will include tabulations detailing the lowest geographical subdivisions and wide dissemination of the publications, each of which will contain a section on analysis.

B. Regional Census Offices (RCOs)

It is planned to invite the active participation of the regional offices of the DS in the planning and execution of the Census. In addition, the BNR plans to establish Regional Census Offices which will be administratively responsible to the regional statistical offices but which will be responsible in all technical and statistical matters to the BNR. The head of each RCO will be responsible for the organization and implementation of the Census, at the regional level with respect to such matters as the calendar of operations, the furnishing of equipment and supplies, maintaining relations with the appropriate regional authorities, publicity, etc.

Within each region, there will be for each department an individual responsible for certain activities within that department, including recruitment and training of the enumerators and crew leaders.

C. Bureau Informatique (Data Processing Bureau, BI)

Originally a part of the DSD, the Data Processing Bureau (BI) is, since January 1, 1980, attached directly to the Director of Statistics. It is directed by an analyst/programmer

The BI was created in 1976 in order to process the data from the Census of that year. At that time it was composed almost exclusively of temporary personnel (e.g., 80 data keyers, 100 coders, etc.) For the keying of that Census the BI used 20 machines with 2 keying positions each (IBM 3742). These machines were, for the most part, rented and were thus returned to the manufacturer after Census data were keyed.

The BI is currently responsible for all processing of statistical data within the DS, including manual and computerized phases: reception and check-in of documents, manual coding and correction, data entry, and data processing. It is currently composed of three sections--coding, data entry, and analysis/programming.

1. Coding

At the moment, this section is composed of twelve coders and one supervisor. Some of the personnel have been employed in this task for more than 10 years. The coding section works on only one application at a time.

2. Data Entry

This section currently works with 3 double-position IBM 3742 keying machines and 2 microcomputers (IBM PC and IBM PC/XT). These latter two machines are used exclusively for entry of data from the Sahel Infant Mortality Survey (EMIS). There are a total of twelve operators and one supervisor in the section, all of whom have been with BI for several years.

3. Analysis/Programming

At the moment, there are only three persons assigned to this section, including the supervisor (who is also the head of the BI). It is hoped that three more persons will be assigned to this section by mid-1985.

V. Project Justification

The Government of Senegal is determined to establish a statistical, and specifically demographic, tradition in hope of obtaining a greater knowledge of its population. This desire satisfies, at the same time, the recommendation of the United Nations that a general census of housing and population be carried out every ten years. Several years ago, the Government committed itself to the process of re-establishing the macro-economic balance in the hopes of guaranteeing, for the mid- and long-term, viable demographic growth.

In order to do this, the Government has adopted the Mid- and Long-Term Plan for Financial and Economic Adjustment, covering the period 1985-1991. This Plan was presented to Senegal's partners at the first meeting of the World Bank's consulting group, which was held in Paris December 13-14, 1984. On this occasion, the Government referred to the strategic role of demographic data and solicited a concerted effort on the part of the international community to help it master this factor.

In this context, a better knowledge of demographic data can be seen as an indispensable prerequisite to any mid- or long-range programming and planning. The present project constitutes, therefore, a fundamental contribution to the success of policies and strategies for economic and social development of the Country.

Schedule of Activities for 1987 Census

| <u>A. Preliminary Activities</u> | <u>Locale</u> | <u>Start Date and Duration</u> |
|---|-----------------|--------------------------------|
| 1. Promulgation of legislative text | Dakar | July 1985; 1 month |
| 2. Reinforcement of National Census Bureau | Dakar | July 1985; 1 month |
| <u>B. Preparatory Activities</u> | | |
| 1. Consultation missions by Economic Commission for Africa (ECA) advisors | | |
| (a) census | Dakar | December 1985; 2 weeks |
| (b) cartography | Dakar | April 1987; 1 month |
| (c) data processing | Dakar | October 1985; 2 weeks |
| (d) analysis | Dakar | March 1986; 2 weeks |
| | | April 1986; 2 weeks |
| | | October 1987; 2 weeks |
| | | April 1986; 2 weeks |
| | | June 1989; 2 weeks |
| 2. Contact with data users | Dakar | August 1985; 2 months |
| 3. Prepare technical documents | Dakar | August 1985; 6 months |
| 4. Contact with regional authorities | Regions | March 1986; 1 month |
| 5. Census cartography | | |
| (a) prepare manuals | Dakar | August 1985; 2 months |
| (b) recruitment and training | Dakar | October 1985; 1 month |
| (c) technical preparation | Dakar | November 1985; 2 months |
| (d) <u>rural</u> : update maps, establish demarcation of areas, sketch maps, etc. | Non-urban areas | January 1986; 7 months |
| (e) <u>urban</u> : same as (d) | Urban areas | January 1986; 10 months |
| (f) obtain multiple clean copies, set up files | Dakar | March 1986; 11 months |
| (g) reinforce Dakar team | Dakar | November 1986; 3 months |
| 6. Pilot Census | | |
| (a) train trainers | Dakar | 15 March 1986; 1 week |
| (b) train crew leaders and enumerators | Regions | 1 April 1986; 12 days |
| (c) assign enumerators to areas | Regions | 13 April 1986; 3 days |
| (d) Pilot Census | Regions | 16 April 1986; 2 weeks |
| (e) process Pilot Census and finalize documents | Dakar | May 1986; 3 months |

| | | |
|--|------------------------------|-------------------------|
| 7. Print documents | Dakar | August 1986; 6 months |
| 8. Publicity campaign | Country | January 1986; 16 months |
| 9. Distribute documents | Country | January 1987; 2 months |
| C. <u>Enumeration Activities</u> | | |
| 1. Enumerate country | | |
| (a) train trainers | Dakar | 5 March 1987; 1 week |
| (b) train supervisors | Regions | 19 March 1987; 10 days |
| (c) train crew leaders and enumerators | Arrondissements and communes | 1 April 1987; 12 days |
| (d) enumeration | Country | 11 April 1987; 3 weeks |
| (e) return documents to central office | Dakar | May 1987; 1 month |
| 2. Post-Enumeration Survey | Sample areas | 16 May 1987; 2 weeks |
| D. <u>Processing and Analysis</u> | | |
| 1. Processing | | |
| (a) preliminary check-in | Dakar | June 1987; 2 months |
| (b) manual editing | Dakar | June 1987; 7 months |
| (c) data entry | | |
| (i) train operators | Dakar | June 1987; 2 months |
| (ii) entry operation | Dakar | August 1987; 15 months |
| (d) editing and tabulation | Dakar | October 1987; 16 months |
| (e) publication | Dakar | July 1988; 10 months |
| 2. Evaluation | Dakar | August 1989 |
| 3. Analysis | Dakar | July 1989; 12 months |

Tentative Statement of Work for U.S. Bureau of the Census Advisors
to the 1987 Senegal General Census of Population and Housing

Qualifications Desired

The short-term technical assistance for the Census will require three areas of expertise:

Mathematical Statistician: At least five years of experience in designing samples for large scale surveys, preferably of national scale. BA or MA in mathematical statistics or sampling. Developing country experience preferable. French language capability required.

Survey Statistician: At least five years of experience in planning and implementing large-scale (preferably nationwide) surveys and censuses in developing countries. Expertise in population census design, tabulation plans, questionnaire design, editing and coding specifications, and manual development. French language capability required.

Data Processing Systems Analyst/Programmer: Experience in COBOL and software packages for census editing and tabulation (preferably CONCOR and CENTS 4). Experience in developing and implementing data processing systems for large-scale (preferably nationwide) surveys or censuses in developing countries. Experience teaching programming to developing country nationals preferred. French language capability required.

Relationships/Responsibility

All advisors will report to the USAID/Dakar Population Officer. The GOS Mathematical Statistician counterpart should have at least 3 years experience with BNR and must have a degree in mathematics and/or statistics. Knowledge of sampling principles preferable.

At least one of the Survey Statistician counterparts should have had experience with the last Census. The Survey Statistician counterparts must have authority to make major decisions concerning conduct of the 1987 Census.

The principal Data Processing counterpart should be the head of the Bureau Informatique or another equally qualified counterpart.

Anticipated Problems/Constraints

Very few of the current staff members of BNR were involved in the 1976 Census. Therefore, although the current staff is highly qualified and motivated, experience in actually planning and executing censuses has been somewhat limited.

Access to the Ministry of Economy and Finance computer will be necessary for laboratory exercises during the CENTS 4 and CONCOR workshops; priority for workshop participants should be assured before the workshop dates.

Objectives

The primary objective of the proposed assistance is to aid in planning and execution of the 1987 Census, so that Census results will be published within three years after the data collection. A related objective is to assist the BNR in evaluating the Census coverage through a Post-Enumeration Survey. Specific activities planned for achieving these objectives are indicated below.

Activities

Following is a list of major activities to be undertaken as part of the program of technical assistance to the 1987 Senegalese Census. Tasks to be completed in the course of each activity are specified. Dates are approximate. Each activity listed notes the in-country time for each temporary duty (TDY). Additional time has been allotted for preparation prior to each trip, follow-up activities subsequent to each trip, and for documentation of activities.

1. Preliminary Census Design

One 3-week TDY for a Survey Statistician in August 1985

- Develop a complete list of output tables for the Census;
- Develop table formats with titles and row and column stubs for each table;
- Draft principal definitions to be used in the Census;
- Begin questionnaire design based on output tables defined;
- Document activities accomplished; and
- Trip report.

2. CENTS 4 Installation and Workshop

One 4-week TDY for 2 Data Processors o/a October 1985

- Prepare computer tapes and materials for workshops;
- Install CENTS 4 software on Ministry of Economy and Finance computer, and test and debug installation;
- Conduct a 3-week workshop with formal lectures and hands-on exercises using computer;
- Document activities accomplished; and
- Trip report.

3. Questionnaire Design and Detailed Specification of Output Table

One 3-week TDY for a Survey Statistician o/a November 1985

- Review pilot questionnaire prepared by BNR, and recommend modifications as appropriate;
- Verify that questionnaire has: verbatim questions, interviewer instructions in body of questionnaire, precoded response categories where possible, unique identification for each household, and unique identification of data cells;

- Verify questionnaire design in conjunction with the data processors of the Bureau Informatique;
- Develop detailed table specifications for each output table format, including indication of data cells to be used in preparing the tables (specifications will be developed in conjunction with the data processing staff of the Bureau Informatique);
- Document questionnaire and table specifications; and
- Trip report.

4. Edit Specifications

One 3-week TDY for a Survey Statistician o/a January 1986.

- Prepare edit specifications for computer editing of the questionnaires, including consistency edits and range edits;
- Document overall rationale of the edit procedures; and
- Trip report.

5. Data Processing Systems Design and Programming Support

One 3-week TDY for a Data Processor o/a January 1986.

- Review progress of Bureau Informatique (BI) in writing output table programs using CENTS 4;
- Assist BI in resolving problems encountered in programming with CENTS 4;
- Collaborate with the Survey Statistician in preparing edit specifications (see activity 4);
- Document progress, problems, and resolutions; and
- Trip report.

Two members of the data processing staff of BI will come to Washington o/a February 1986--one for 6 weeks, the other for 12 weeks. The objectives for the first 6 weeks will be to:

- Train the BI data processors in the data entry program to be used for the Census;
- Assist the BI data processors in preparing all data entry programs based on the final pilot questionnaire;
- Assist the BI data processors in testing and finalizing all data entry programs;
- Develop a system for processing the Census, including a flow chart and description of all programs;
- Develop a detailed schedule of all data processing activities related to the Census;
- Estimate time required in person-months and calendar time to complete all major data processing activities.

23

The objectives for the remaining six weeks for the BI analyst will be to:

- Prepare all editing programs using CONCOR, based on edit specifications prepared during the Survey Statistician TDY (see activity 4);
- Test and finalize all edit programs to be used in processing the pilot census and the 1987 General Census.

6. Planning and Implementation of the Post-Enumeration Survey

Three TDY's for a Mathematical Statistician: for 2 weeks o/a February 1986; for 4 weeks o/a November 1986; and for 4 weeks o/a May 1987.

The first TDY will include:

- a one-week workshop on Post-Enumeration Survey objectives and procedures;
- one week of technical assistance in specifying questionnaire content and developing preliminary matching procedures;
- documentation of these activities; and
- trip report.

During the second TDY, the Mathematical Statistician will:

- finalize matching procedures;
- design the sample for the survey;
- develop the overall research plan for the study;
- prepare final documentation; and
- trip report.

The third TDY will take place during implementation of the Post-Enumeration Survey, and will include:

- observation of field operations;
- developing the estimation methodology;
- assisting BNR in applying the estimation methodology;
- final documentation; and
- trip report.

7. Pilot Census Data Processing Assistance

One 3-week TDY by a Data Processor o/a May 1986.

- Review progress made by BI in processing the Pilot Census data;
- Identify bottlenecks in processing operations and recommend modifications to be implemented during the processing of the actual Census;
- Document activities; and
- Trip report.

8. Revisions to Questionnaire and Related Materials Following Pilot Census

One 3-week TDY by a Survey Statistician o/a August 1986.

- Review results of the Pilot Census;
- Based on the results of the Pilot, revise the questionnaire, table specifications, and edit specifications in collaboration with BNR staff;
- Review field manuals and recommend final modifications, as appropriate;
- Discuss revised questionnaire, table specifications, and edit specifications with data processing staff of BI;
- Document changes made to census materials;
- Trip Report.

9. Revise Computer Programs and Present CONCOR Workshop

One TDY for 2 Data Processors: one DP for 4 weeks, one DP for 5 weeks, o/a October 1986.

- Based on revisions to the questionnaire, table specifications, and edit specifications (see activity 8), work with data processing staff of BI to revise data entry, edit, and tabulation programs;
- Prepare materials for CONCOR workshop;
- Conduct 3-week CONCOR workshop for BI staff;
- Document program revisions and workshop activities;
- Trip report.

10. Census Data Processing Assistance

One 3-week TDY for a Data Processor o/a February 1987

- Review data processing activities and preparations for the Census;
- Confirm proper operation of CONCOR and CENTS 4;
- Assist in problem resolution; and
- Trip report.

11. Census Data Processing Assistance

One 4-week TDY for a Data Processor o/a May 1987.

- Review progress made by BI in processing the Census;
- Identify bottlenecks in the processing and assist BI in modifying procedures to eliminate these obstacles;
- Document modifications made; and
- Trip report.

12. Census Data Data Processing Assistance

One 3-week TDY for a Data Processor o/a July 1987.

- Review processing and documentation activities as appropriate;
- Identify bottlenecks in processing and assist BI in modifying procedures to eliminate obstacles;
- Document modifications; and
- Trip report.

13. Census Data Processing Assistance

One 3-week TDY for a Data Processor o/a September 1987.

- Review processing, documentation and publication activities as appropriate;
- Assist in problem resolution;
- Facilitate and coordinate communication among personnel involved in various phases of Census activity; and
- Trip report.

14. Monitoring Census Production Activities

One 3-week TDY for a Survey Statistician and a Data Processor o/a November 1987.

- Review processing, documentation and publication activities, as appropriate;
- Assist in problem resolution;
- Facilitate and coordinate communication among personnel involved in various phases of the Census activities;
- Document tasks accomplished; and
- Trip report.

15. Preliminary Development of a Master Sample Frame

One 4-week TDY by a Mathematical Statistician o/a October 1989.

During the TDY, a Mathematical Statistician from the U.S. Bureau of the Census will collaborate with a consultant from another organization designated by USAID to undertake the following activities:

- Discuss with appropriate GOS personnel the needs and plans for an intercensal survey program;
- Review Census materials and results and advise DS on optimum design and procedures for establishment of a master sample frame to accommodate the varying content and methodological requirements for multipurpose household surveys;
- Document plans and options; and
- Trip report.

Tentative Implementation Activities and Schedule

| <u>Approximate Date</u> | <u>Duration</u> | <u>Activity</u> |
|-------------------------|------------------------|---|
| May 1985 * | 2 weeks | Plan program of cartographic activities |
| August 1985 | 3 weeks | Definition of tables and questionnaire design |
| September 1985 * | 2 weeks | Cartography workshop |
| October 1985 | 4 weeks (2 persons) | CENTS 4 installation and workshop |
| November 1985 | 3 weeks | Review table specifications and questionnaire for Pilot Census. |
| January 1986 | 3 weeks | Prepare specifications for edit and tabulation programs for Pilot Census. |
| February-April 1986 ** | 6 weeks 12 weeks | Learn data entry software, prepare data entry programs; prepare edit program |
| February 1986 | 2 weeks | Post Enumeration Survey workshop and matching procedures |
| May 1986 | 3 weeks | Monitor processing of Pilot Census |
| August 1986 | 3 weeks | Make final changes to table and edit specifications and to questionnaire |
| October 1986 | 5 weeks (2 persons) | CONCOR workshop and update of programs for data entry, edits, and tabulations |
| November 1986 | 4 weeks | Prepare sample design and statistical plan for Post-Enumeration Survey |
| February 1987 | 3 weeks | Monitor processing of Census |
| May-June 1987 | 4 weeks | Monitor processing of Census |
| May-June 1987 | 4 weeks | Field observation of Post-Enumeration Survey and estimation methodology |
| July 1987 | 3 weeks | Monitor processing of Census |
| September 1987 | 3 weeks | Monitor processing of Census |
| November 1987 | 3 weeks (2 persons) | Monitor post-Census operations |
| October 1989 | 4 weeks | Master Sample frame design |

*These activities financed by sources other than those included in the present agreement.
 **BI staff (2 persons) training in Washington.

Preliminary Implementation Plan: Schedule of Estimated Costs by Fiscal Year
Population and Housing (in \$000's).

ANNEX VII (1)

| <u>LINE ITEMS</u> | <u>85</u> | <u>86</u> | <u>87</u> | <u>88</u> | <u>89</u> | <u>90</u> | <u>91</u> | <u>92</u> | <u>LOP</u> |
|---|-----------|------------|------------|-----------|------------|------------|-----------|------------|------------|
| I. Technical Assistance and Training | | | | | | | | | |
| A. U.S. Bureau of the Census | | | | | | | | | |
| Survey Statisticians | 24 | 81 | 9 | 25 | 7 | 5 | - | - | 151 |
| Math Statisticians | - | 17 | 46 | - | - | 35 | - | - | 98 |
| Data Processors | - | 133 | 114 | 19 | - | - | - | - | 266 |
| Census Bureau | 24 | 231 | 169 | 44 | 7 | 40 | - | - | 515 |
| B. Coordinator | - | 25 | 20 | 20 | 25 | 20 | 20 | 20 | 150 |
| Total | 24 | 256 | 189 | 64 | 32 | 60 | 20 | 20 | 665 |
| II. Training | | | | | | | | | |
| Study Tour | - | 12 | - | - | - | - | - | - | 12 |
| Work-study Visit | - | 17 | - | - | 32 | - | - | - | 49 |
| Long-term | - | - | - | - | 132 | 131 | - | - | 263 |
| In-country Refresher | - | - | - | - | 16 | 16 | 16 | - | 48 |
| Short-term | - | - | 15 | - | 30 | - | 15 | 15 | 75 |
| Total | - | 29 | 15 | - | 210 | 147 | 31 | 15 | 447 |
| III. Surveys | | | | | | | | | |
| Regional | - | - | - | - | - | 47 | 47 | 143 | 237 |
| Health, etc. buy-ins | - | - | - | - | - | 36 | 37 | - | 73 |
| Total | - | - | - | - | - | 83 | 84 | 143 | 310 |
| IV. Population Policy | | | | | | | | | |
| Planning Models | - | - | - | - | - | 26 | 26 | - | 52 |
| Seminar for Policy Makers | - | - | - | - | - | - | 6 | - | 6 |
| Research Reports | - | - | - | - | - | - | 26 | 26 | 52 |
| Total | - | - | - | - | - | 26 | 58 | 26 | 110 |

154

15/11/20

ANNEX VIII (2)

| <u>LINE ITEMS</u> | <u>85</u> | <u>86</u> | <u>87</u> | <u>88</u> | <u>89</u> | <u>90</u> | <u>91</u> | <u>92</u> | <u>LOP</u> |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| V. Cartography | - | 94 | 5 | - | - | - | - | - | 99 |
| VI. Publications | 42 | - | - | - | 14 | - | - | - | 56 |
| VII. Post-enumeration Survey | - | - | 25 | - | - | - | - | - | 25 |
| VIII. Temporary DP Personnel | - | - | 40 | 72 | 20 | - | - | - | 132 |
| IX. Computer Supplies and Equipment | - | 71 | 137 | - | - | - | - | - | 208 |
| Grand Total | 66 | 450 | 411 | 136 | 276 | 316 | 193 | 204 | 2,052 |

Budget for BNR

US \$

| | |
|---|----------------|
| I. <u>Technical Assistance</u> | |
| U.S. Bureau of the Census | 515,000 |
| Coordinator (non-Census Bureau consultant) | <u>150,000</u> |
| Subtotal | 665,000 |
| II. <u>Training</u> | |
| Study tours | 12,000 |
| Work-study visits | 49,000 |
| Long-term training (3) | 263,000 |
| In-country seminars (3 at \$16,000) | 48,000 |
| Short-term training (5 at \$15,000) | <u>75,000</u> |
| Subtotal | 447,000 |
| III. <u>Surveys</u> | |
| Regional surveys (5 at \$47,400) | 237,000 |
| Survey of Demography and Health (participation in DHS contract: 2 at 36,500) | <u>73,000</u> |
| Subtotal | 310,000 |
| IV. <u>Policy Development</u> | |
| Preparation of Planning Models | 52,000 |
| Seminars for Policy Makers | 6,000 |
| Population Policy Research Reports | <u>52,000</u> |
| Subtotal | 110,000 |

Note: A five percent contingency allowance is included in all costs, with the exception of gas and oil included in cartographic activities.

236

| | |
|---|---------------|
| V. <u>Cartography</u> | |
| Gas-oil | 18,000 |
| Cartographic materials | 33,000 |
| Four (4) 4-wheel vehicles | <u>48,000</u> |
| Subtotal | 99,000 |
| VI. <u>Publication</u> | |
| Historical calendars | 42,000 |
| Publications: | |
| Methodological report | 2,000 |
| 10 Analytical reports | 4,000 |
| Village listings | 4,000 |
| 2 Thematic Analysis reports | <u>4,000</u> |
| Subtotal | 56,000 |
| VII. <u>Post-Enumeration Survey</u> | |
| Materials miscellaneous | <u>25,000</u> |
| Subtotal | 25,000 |
| VIII. <u>Salaries of Temporary Personnel</u> | |
| Data entry operators | 55,000 |
| Production bonuses-data entry | 9,500 |
| Coders | 49,000 |
| Production bonuses-coders | 6,900 |
| Operational control clerks | <u>11,600</u> |
| Subtotal | 132,000 |

IX. Data Processing

| | |
|-------------------------------------|--------------------|
| 20 microcomputers and accessories | 79,400 |
| 40 tables for microcomputers | 2,800 |
| 20 chairs for microcomputers | 1,400 |
| 20 dust covers for microcomputers | 200 |
| 20 plastic keying rulers | 100 |
| 4 diskette converters (5 1/4 "--8") | 21,600 |
| 3000 diskettes (5 1/4") | 28,000 |
| 1500 diskette (8") | 11,100 |
| 5 diskette storage cabinets | 3,500 |
| 250 magnetic tapes (2400') | 14,000 |
| 4 tape storage cabinets | 3,000 |
| 275 boxes printer paper | 22,000 |
| 10 2 hp air conditioners | 9,300 |
| 25 coding tables | 1,100 |
| 25 straight chairs | 500 |
| 20 copies of data entry software | <u>10,000</u> |
| Subtotal | 208,000 |
| Grand Total | <u>\$2,052,000</u> |

Bilateral Agreement

Technical Consultants: Scope of Work

Considering the number, qualifications, and experience of the Senegalese staff in charge of project implementation, a resident expert-consultant is not envisioned. Nevertheless, a coordinator, designated by USAID and agreed to by the Direction de la Statistique, will assure implementation in accordance with the scientific and technical plan. In addition, following the work plan and at the request of DS, USAID will designate consultants who will be called upon to assist in the design and execution of certain tasks involved in the project implementation.

Principal tasks of the coordinator will be:

1. Assist GOS Technical Director with technical component design and follow-up of project implementation.
2. Assist national staff with design and technical preparation of their research, as well as editing reports of data analysis.
3. Conduct a yearly evaluation for USAID of the status of work implementation and make recommendations for the timely execution of program activities.

The coordinator must have the following qualifications:

1. a higher university degree in demography (Ph.D. or equivalent);
2. a knowledge of statistics and data processing;
3. considerable experience in design and preparation of demographic surveys, collection and analysis of data, and with a specifically socio-economic emphasis;
4. Excellent knowledge of French and English;
5. working knowledge of USAID management and accounting procedures.

The coordinator will make annually two trips to the project site, each trip to be of two to four weeks' duration.

Consultations by the technical experts will take place according to a work plan established at the beginning of each year. These consultations will also help the GOS staff to: 1) resolve problems presenting particular difficulties outside of the coordinator's area of expertise; 2) move forward with activities linked to these problems.

These consultants must have experience and qualifications in the area for which their intervention is needed. The consultants will be recruited by the major technical assistance contractor, ISTI.