

AN INVENTORY OF DEMOGRAPHIC CAPABILITIES  
AND ACTIVITIES IN THE SAHEL

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It is hoped that the baseline data on demographic capabilities and activities presented in this report will be useful to the Sahelian countries and donor organizations in pursuing the development of demographic programs in the region.

## I. INTRODUCTION

This report presents the results, on a regional and a country basis, of an inventory and assessment of capabilities and activities in seven<sup>1</sup> of the eight member countries of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). Missions to these countries during the period of January to April 1979, were undertaken jointly by the Sahel Institute, the research arm of the CILSS located in Bamako, Mali and Family Health Care, Inc. (FHC), Washington, D.C., and the Population Council (PC), working under contract to the United States Agency for International Development (USAID). The purpose of the inventory was to identify and assess currently available resources in the area of demography; that is, trained personnel, public and private institutions involved in demographic activities, facilities, data sets and sources of financial support. Activities in the field of demography including training, data collection and analysis, research and publications were also assessed. This information was then to serve as the basis for the elaboration of a program strategy for the development of a Sahelian demographic capability to be implemented through the Sahel Institute.

The terms of reference for the creation of a demographic unit at the Sahel Institute and the development of a regional program of demographic research were first presented at the donor consultation on the Institute held in Ouagadougou in October, 1977. Following discussion and approval

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1. A team was unable to visit Chad due to the political situation there in March 1979.

of the proposal, it was recommended that the Institute proceed immediately with the recruitment of a unit coordinator. With funding from UNFPA, this person was identified and began work in April 1978. During the first few months at the Institute, the coordinator visited key national and regional institutions involved in demography-related activities. Following this preliminary assessment of needs and resources, an outline of a demographic program was prepared and formally presented in October 1978 to technical representatives of the CILSS countries (except the Cape Verde Islands, Chad and Niger) and to representatives of major bilateral and multilateral funding agencies. A work plan for 1978-1979, which included the inventory activity, was also submitted and approved by the participants.

USAID had previously expressed an interest in providing long-term assistance to a Sahel regional demographic activity. In preparation for its project design process, the Agency wished to undertake an inventory similar in scope to that proposed by the Institute. Thus, a collaborative effort by the two institutions was agreed upon, with AID contracting technical assistance from Family Health Care, Inc., and the Population Council.

Guidelines for the inventory were finalized in early January, and the first team began work later that month. Visits were made to national and international institutions involved in the collection, analysis and/or application of demographic and related social science data and/or in training in statistics and demography. Information was collected on institutional and financial resources, including personnel, computer documentation and library facilities, and demographic activities

including training, data collection, analysis and application. An inventory was also made of all available demographic data sets, their current location, the form in which they are stored and their degree of analysis.

During the course of the missions, it became apparent that there are many critical needs which must be addressed in the area of demography at both the regional and national levels. At the regional level there is an important role to be played by the Sahel Institute and the Socio-Economic/Demographic Unit in facilitating the flow of information between national institutions, in encouraging collaborative ties between researchers and planners, and in coordinating regional research and training programs. A demographic program with a regional focus is essential in order to take full advantage of the demographic research now being done, to further the exploitation of existing data and to promote the incorporation of demographic factors into long-range development planning for the Sahel.

At the level of each CILSS country, there are demographic activities which are priority national concerns. These could be initiated in the very near future if personnel and funding were made available. These activities are in response to individual country needs and priorities and may or may not be of immediate interest to the Sahel Institute.

It is hoped that the information contained in this report will provide a useful resource to Sahelians and non-Sahelians alike for the planning and programming of future activities in the area of demography and in the integration of demographic issues and data in long-range development planning in the Sahel.

## II. DEFINITION OF TERMS

For the purposes of the inventory and assessment of demographic capabilities and activities in the CILSS member countries undertaken by the Sahel Institute/Family Health Care/Population Council teams, the following definitions are used for "capabilities" and "demographic activities".

The components of capabilities are:

- The pool of personnel trained in demography, statistics, computer programming and related social sciences such as economics, human geography and sociology. The level of training of personnel should be such that they are capable of undertaking demographic data collection, analysis and research independently or are capable of providing the technical support to such activities.
- The existing network of institutions and the availability of physical facilities. This includes effectiveness of working relationships developed between institutions involved in demographic activities (as defined below), especially between data generating and policy implementing institutions. Physical facilities that are of relevance to this inventory include the availability of computer services, other computational equipment, documentation centers, publishing and reproduction facilities.
- Financial resources. This includes national investment and operating budgets as well as funds from the national government or donor agencies for special projects.

The demographic activities that are of interest to the inventory and assessment missions include the following categories:

- Training -- in-service or basic training in the field of demography or statistics;
- Data collection and analysis;
- Application of demographic data -- in policy formulation, economic or social planning, in the design and evaluation of development projects;
- Policy relevant research -- studies of the determinants and consequences of demographic behavior and their interactions with the socio-economic development in the Sahel;
- The translation, publication and dissemination of demographic material.

One of the findings of the missions is that while there are common elements with regard to demographic capabilities and activities among the CILSS countries, there are also significant differences which need to be noted in assessing the needs for strengthening demographic capabilities in the region. This report will first provide a general overview of the situation in the region as a whole. Then, an assessment of each country will be presented.

### III. A PERSPECTIVE ON THE REGION: CURRENT SITUATION AND NEEDS

#### A. Demographic Capabilities

##### 1. Personnel

For the region as a whole there is a shortage of trained demographers at the professional level.<sup>2</sup> In particular, there are very few demographers trained as social scientists and very few not trained in the traditional French statistician mode. Most of these demographers are trained at the University of Paris (IDUP), Institut de Formation et de Recherche Demographique (IFORD), in Yaounde, and more recently, at the Centre Demographique de l'Organisation des Nations Unies en Roumanie (CEDOR). Furthermore, with some exceptions, demographers are not well versed in the use of the computer in data processing and analysis.

There is an even more critical shortage of technical support staff i.e., computer programmers/analysts and statistical analysts/assistants.<sup>3</sup>

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2. Ingenieur-statisticien or statisticien-demographe in the French system or the equivalent of a master's level technician in the U.S.
  3. Statistical analysts/assistants in the region are mainly trained at the Ecole de Statistique in Abidjan, the Ecole Nationale d'Economie Appliquee in Dakar (ENEA), the Institut de Statistique, de Planification et d'Economie Appliquee (ISPEA) in Yaounde or the Institut National de Statistique et d'Economie Appliquee (INSEA) in Rabat.

Recruitment is generally at the baccalaureat level or the equivalent of post-secondary school level in the U.S. Training programs are technical rather than academic and range from one to three years in duration. With three years of training the diploma of Ingenieur des Travaux Statistiques is awarded, which is approximately equivalent to a Bachelor's level in the U.S. With two years of training, the diploma is Agent Technique de la Statistique and with one year of training, Adjoint Technique de la Statistique.

While there is an abundance of trained computer programmers in Dakar, where there is great competition for them by banks and computer companies, other countries are seriously lacking such expertise.

The shortage of middle level technical personnel aggravates the already heavy work load of demographers. The primary cause of this shortage does not seem to be the lack of training opportunities. Rather, this shortage is due to the excess of demand for trained personnel in the region over the supply of suitable candidates for such training.

In some countries, such as Mali and Senegal, there is no serious shortage in the number of trained demographers. However, in Mali, for example, the financial resources for supporting demography projects are seriously lacking. A related problem is that young demographers in the region generally lack practical experience. This is mainly due to the emphasis on theoretical training at the expense of practical training, which is typical of the educational system inherited from the colonial period. This tends to reduce their effectiveness during the first few years on the job.

Other reasons for the shortage of trained personnel are the poor working conditions and low salaries. National salaries are significantly lower than salaries of international organizations in Africa such as the United Nations Development Program (UNDP), Economic Commission for Africa (ECA), International Labor Organization (ILO), the African Development Bank and potentially, the Sahel Institute, which tend to siphon off qualified demographers. The problem is most acute in Mali where civil service salaries are extremely low and demographers are lured away from the Census Bureau and Office of Statistics into posts of office chiefs in other ministries.

Currently, one way of mitigating this problem of shortage of personnel is the use of expatriate advisors. While this is a viable temporary solution, it has certain disadvantages. First, it creates discontinuity in activities in cases where the advisors are assigned on a one to two year basis. Secondly, these persons usually have no responsibility to train the host country personnel with whom they work. This represents a loss of very good, practical learning opportunities and thereby delays the achievement of self-sufficiency in this area of expertise. Finally, the presence of expatriates is often undesirable from a socio-political point of view.

## 2. Institutional Network

### a. Government Institutions

Those institutions involved in demographic activities in the Sahel are presented in Table 1. In each country the institution most involved in demographic activities is the National Office of Statistics, which also has among its functions the collection of socio-economic as well as agricultural data. It is usually involved in the design of the survey instruments, and from the enumeration to analysis and evaluation of the data. These statistics offices provide the primary data for other government and international agencies. For example, data on the size and composition of labor force age population are provided for the Office of Manpower, the size and composition of the school age population for the Office of Educational Planning, etc. Thus, some working relations do exist between the central statistics office and other government agencies

which have the potential of facilitating the use of demographic data in national and sectoral planning. The extent to which this potential is exploited varies from country to country. For example, in Senegal, the Office of Human Resources Planning in the Ministry of Planning and the Statistics Office collaborated on a study of the economically active population, using data from the 1970-71 National Demographic Survey collected by the latter. In Niger, however, although the Office of National Educational Planning was very enthusiastic about collaborating with the Office of Statistics in obtaining and analyzing 1977 census data on the school-age population, that cooperation never materialized.

Among the Sahelian countries, the most concrete steps undertaken to establish formal relations between the various ministries and the statistics office to ensure the consideration of population factors in policy formulation and socio-economic planning have been in Senegal and Upper Volta. They have submitted proposals to the United Nations Fund for Population Activities (UNFPA) for the funding of a population unit in the Ministry of Planning. This approach has not yet been adopted by other countries.

Since the commencement of the 1970 round of the African Census Program in each of the participating countries (except The Gambia), a Bureau of the Census has been created by each government and the UNFPA to be responsible for the latest census. The staff is usually drawn from the demography division of the Office of Statistics, with expatriate computer and data analysis advisors funded by the UN. Thus, there is a very well-established working relationship with the UN.

Other government agencies involved in data collection, analysis and

application activities which are related to population include the Office of Health Statistics, Office of Human Resources Planning, Office of Manpower, Office of Agriculture Development and the Office of National Educational Planning. In some countries these offices are very closely linked to the Office of Statistics, as discussed above. Some of these institutions themselves are closely linked to international organizations, such as the Office of Health Statistics with the WHO, the Office of Manpower with the ILO, the Agricultural Development Office with the FAO and/or the World Bank, and the Office of Education Planning with UNESCO.

Some universities and other research institutions in the region which are involved in some aspects of population research, such as the University of Dakar and the University of Niamey, are not well integrated into the mainstream of the demographic network in their countries. This is in the French tradition of regarding demographic analysis as strictly for administrative purposes and not in a broader social science research context. However, it should be noted that in the case of Upper Volta the CVRS (now the CNRST)<sup>4</sup> has collaborated with the Statistics Office in demographic surveys and studies.

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4. Centre Voltaïque des Recherches Scientifiques now renamed the Centre National des Recherches Scientifiques et Techniques

b. Supra-Governmental Institutions

There are various organizations set up for the implementation and monitoring of large-scale development projects in the region such as the Organisation de Mise en Valeur du Fleuve Senegal (OMVS), the Autorite des Amenagements des Vallees des Volta (AVV) and the Societe pour la Mise en Valeur de la Casamance (SOMIVAC). These organizations each contain a social and economic planning and evaluation unit, which has the responsibility of collecting demographic and socio-economic data over the lifetime of the project for evaluation purposes.

c. Private Institutions

A few private research organizations can be found in the region: Societe Africaine d'Etudes du Developpement (SAED) and the Institut Pan-Africain du Developpement (IPD) in Upper Volta and the Societe Nationale d'Etudes du Developpement (SONED) in Senegal. These agencies tend to focus on applied research pertaining to the possible impact of development projects and are not involved in specifically demographic research.

d. Other

The Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM) is a French governmental research organization, headquartered in Paris, with offices in numerous countries in the developing world. In the Sahel, it has offices in Dakar, Ouagadougou, Niamey and Bamako. Within its human science division, it undertakes data collection,

analysis and research projects in demography, population studies and human geography in its Dakar and Ouagadougou offices. They use researchers from France who are assigned on two-year missions. They generally collaborate or consult with the offices of statistics and demography of the host country. However, it appears that in recent years the budget for demographic and population studies in ORSTOM has been significantly diminished.

### 3. Physical Facilities

#### a. Computer Facilities

Physical facilities in the region vary widely from country to country, and a detailed assessment should be undertaken on a country-by-country basis. In general, in terms of computer facilities, with the exception of the Cape Verde Islands and The Gambia, the statistical offices and the census bureaus of the CILSS countries visited have access to computer systems with the capacity to handle large data sets such as censuses. A mini-computer has been ordered and should be delivered to The Gambia in the next few months. However, the capacity utilization of these systems is usually quite low. Basic census tabulation programs are available on the systems in each of the countries. However, more general social science statistical packages such as SPSS are only available in Upper Volta and Senegal and more sophisticated demographic analysis programs have not yet set up. The system at the Census Bureau in Mali, a Honeywell-Bull 6260, is incapable of handling most of the general statistics packages that are currently available. The lack of emphasis on using these packages may be reflecting the bias towards a more statistical rather than a social

science approach to population studies in the region. (For a detailed discussion of computer capabilities in the Sahel, see the report prepared by Dualabs dated April 3, 1979 on the results of an inventory mission to Senegal, Mali, Upper Volta and Niger.)

It appears, therefore, that computer hardware in the region is not lacking. Rather, at this stage of computerization of data and analysis, the emphasis should be on the need to install software and develop the computer capabilities of programmers as well as of demographers, researchers and planners.

b. Library, Documentation and Publication Facilities

Documentation centers exist within some institutions. In general, the best documentation centers are usually found in research and training institutions and in the Offices of Statistics. The best centers in the region are the library at the Institut Fondamental d'Afrique Noire (IFAN) and the National Archives of Senegal in Dakar. For example, the documentation centers of the Office of Statistics in Senegal and of IFAN have lists of publications which are available to the public. The libraries of the CNRST and the Institut de Recherches en Sciences Humaines (IRSH) maintain a relatively substantive collection of demographic material of both in-house and external documents. The library at the Institut du Developpement Economique et de la Planification (IDEP) in Dakar maintains a system of exchange of documents with international institutions although their material is mainly oriented towards economic development and planning. At other institutions where the documentation centers are less established, they

are merely make-shift depositories for in-house or external documents without any system of cataloguing or exchange with other institutions. The OMVS is developing a computerized documentation center in Saint-Louis. At the regional level, the documentation unit at the Sahel Institute is developing a regional computerized documentation network funded by the International Development Research Center (IDRC). This is a much needed step towards the coordination and centralization of documentation in the region.

Those institutions that publish in-house work are presented in Table 1. They range from statistics offices to research institutions. There are no translation services in any of the institutions visited except at IFAN where the list of publications is in both French and English. Translation services in French and English are very important facilities for bridging the language barrier in the dissemination of information, and are badly needed in the region.

### 3. Financial Resources

The inventory guidelines did not call for detailed information on existing financial resources. Generally speaking, the operating budgets of the government institutions, the largest percentage of which are allocated to personnel salaries, are provided by the national governments. However, the costs of special projects, such as surveys or particular studies, are usually supported by external donor agencies.

## B. Demographic Activities

### 1. Training

Very few of the non-academic institutions surveyed are involved in basic long-term or short-term training.

The College de Statistique of the ENEA in Dakar provides training in statistics and applied economics but not in demography. However, training opportunities for non-Senegalese students are rare. None of the universities surveyed has a formal program in demography, although the Department of Human Geography of the University of Dakar offers a course in population structure and distribution, and the basic economics course in the Faculty of Law and Economics at the University of Ouagadougou incorporates a component on population structure and growth. Sahelians are eligible for post-university basic training fellowships at the Regional Institute for Population Studies (RIPS) in Ghana, IFORD and CEDOR. These fellowships are supported by donor agencies such as UNFPA and AID either through the training institutions themselves or through individual governments. In the latter case, training at these schools is often a component of a larger bilateral assistance program or project.

Several governmental institutions offer fellowships for professionals for short-term training abroad, funded by various donor agencies either independently or in conjunction with specific assistance projects. These short-term training opportunities include sessions at the Cairo Demographic Center, the United States Census Bureau, the ILO in Geneva, the UNESCO Regional Center in Dakar, and CEDOR. In-service training opportunities are also available to nationals involved in local

projects sponsored by international agencies such as the UNDP and the ILO. However, there is no formal arrangement for short-term in-service training of demographers, although this is urgently needed.

Among some of the supra-governmental organizations such as the AVV in Ouagadougou there are provisions in the operating budget for short-term training fellowships.

## 2. Data Collection and Analysis

The major sources of strictly demographic data in the CILSS countries are national demographic surveys, population censuses and specialized surveys on migration, mortality, labor markets and employment and fertility (See Table 2). Agricultural surveys also provide good demographic data if they are well implemented.

### a. Data from Surveys and Censuses

The quantity and quality of general and specialized demographic data in the region vary from country to country depending on national priorities. In general, Senegal, Upper Volta and The Gambia have the greatest amount of demographic data.

### General Population Characteristics

Before the 1970 round of censuses, nationally representative demographic data were available only for Senegal, The Gambia and the Cape Verde Islands. Although national demographic surveys had been conducted in the other CILSS countries in the 1960's, their coverage was not

extended to the entire population. Thus in these countries, it is not possible to obtain a series of nationally representative data for the period of 1960 to the mid-1970's. Each of the CILSS countries, except Chad, has undertaken a national population census in the 1970's. In more pragmatic terms, it is not possible to compare the demographic dynamics of the region prior to and after the drought in the early 1970's. Nor has it been possible for these countries to trace their national demographic trends and to use demographic data in national or sectoral planning. Presently, except for The Gambia and Upper Volta, the results of the latest national census of the other countries have yet to be fully processed and published due to the lack of sufficient number of trained personnel.

#### Mortality

In the area of mortality, the Infant Mortality Survey sponsored by IFORD will be the first major coordinated effort in the study of mortality in the region with the survey being implemented in N'Djamena and Ouagadougou. To date, there are no major data sets on mortality in the region.

#### Migration

Data on migration are especially abundant in Upper Volta, where migration is a priority concern. Although it is also an extremely important phenomenon in all the CILSS countries, less effort has been put into the collection of migration data in the other countries. In fact, Mauritania, Cape Verde, Mali and Niger have no major migration data

sets. There are localized migration studies in Senegal, especially of the Senegal River Valley Region, the Sine Saloum and the Casamance. The World Bank and the Organization for Economic Cooperation and Development (OECD) have recently completed a research project, Demographic Aspects of Migration in West Africa, which included the CILSS countries in which they collated available data on migration from censuses, demographic and migration surveys.

### Labor Force

There is a study of the labor force in Mauritania done by the ILO in 1977 entitled Esquisse sur la Situation de l'Emploi en Mauritanie: Situation Presente et Perspective, the Urban Labor Force Survey of Banjul 1974-75 and the Employment and Unemployment Survey 1978 of Praia and Mindelo are of selected regions of the countries. The Employment and Migration Survey soon to be implemented in Senegal will be on a national basis. There have been studies done on the structure and production technologies of the urban informal sector sponsored by the Programme de l'Emploi et des Competences Techniques en Afrique (PECTA) in Mali and Upper Volta, but they do not provide demographic or socio-economic information on the labor force as a whole.

### Fertility

Fertility data on limited geographic areas are relatively abundant in Senegal where researchers from the ORSTOM have undertaken localized studies in the Sine Saloum and the Cap Vert regions. The Gambia is the only CILSS country with a time-series of nationally representative

fertility data from 1953 to 1978. A fertility survey was undertaken in Niger and Upper Volta in the late 1960's by a team headed by a New Zealand demographer, Ian Pool. Fertility data are very sparse for the other countries. Furthermore, the latest censuses of Upper Volta, Mauritania<sup>5</sup>, Niger and Senegal do not have any questions on fertility.

#### Household Budget/Consumption

Household consumption and budget information is potentially available from household budget surveys in selected areas of Senegal (1973-75) and in Banjul, The Gambia. The survey in Senegal, however, has not been completed. The Ministry of Rural Development in Niger is responsible for the agricultural survey in the country which incorporates a survey on the family structure and consumption and time-budgets of the rural population. This type of data, if reliable, is an invaluable source of information for studying decision-making and the allocation of time within the household. Given the importance of the family or the household in Sahelian societies and the utility of data at this level for the design and evaluation of development projects covering limited geographic areas, it is within this framework that demographic behavior should be studied. This approach, however, has not been adopted in other CILSS countries, although Mali has expressed an interest in obtaining funding for such a survey.

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5. Fertility questions were included only in the sample survey of the nomadic population.

## b. Permanent Data Collection Systems

Other sources of data that are relevant to population studies include health statistics collected on a national basis, national agricultural survey data and civil registration data. These systems of data collection are potentially valuable sources of data on births, deaths, morbidity and family structure. However, in their current state, their coverage of the target population is very low -- about 20%-30% for civil registration in most countries and about the same level of coverage for health statistics. Work is underway in The Gambia, Mali and Niger to upgrade coverage of the national agricultural surveys. Some countries, such as Cape Verde, are also collaborating with WHO to improve their health statistics systems.

## c. Analysis of Data

The analysis and utilization of demographic data in the Sahel are well below capacity. Some exceptions are the data sets collected under the sponsorship of the Institut National des Statistiques et des Etudes Economiques, France (INSEE)/Service de Cooperation in the early and mid-1960s and those collected by ORSTOM, Dakar and Ouagadougou. The primary reasons for this are the shortage of personnel and the lack of computational facilities. Where computer facilities are not available in the region, data have had to be transferred to either London, Lisbon, Paris or Geneva to be processed. In some cases, therefore, the host country no longer has direct access to the data.

Even with the availability of computer services, many data sets have

not been analyzed beyond the very basic age-sex structure and geographic distribution of the surveyed populations. This situation is illustrated by the stage of data analysis of the latest round of the census in these countries. Census results in Cape Verde, Niger and Mali remain unanalyzed. Mali has encountered administrative problems in getting the computer system installed and technical problems in the computerization of the data. Cape Verde simply lacks the facilities and human resources to do the analysis. The Gambia and Upper Volta have, however, published definitive results as well as evaluated the data. Senegal has begun publishing results on a sub-national but not on a national basis. Mauritania has put the data on tape and some preliminary analysis has been done.

The ability to analyze data from current and past surveys is also dependent on how well the data are preserved. During the inventory, the teams found data cards to be destroyed or data tapes to be missing or erased. In some cases, the data collected in collaboration with European institutions are kept outside the Sahel and are simply not accessible to the country.

### 3. Application of Population Data to Planning and Project Design

The use of demographic data in policy formulation, social and economic planning and project design varies from country to country and will be discussed in greater detail in the country specific assessments. In general, the use of demographic data in planning is not up to its potential. This is partly due to the lack of suitable data, since the most recent censuses are only available for one or two countries, and

partly due to a lack of knowledge of the possibilities of the application of such data. For example, in the Fifth Economic Plan of Senegal, data on the age-sex composition of the national population from the 1976 census were used to project the demand for grains, and the need for potable water, cultivable land and primary schooling. However, because data were not available by region or more localized areas, they were not incorporated into the development of the regional plans.

The design and evaluation of most development projects, which concern a limited geographical area, require even more localized data, i.e., data at the village level. Sometimes data can be obtained from agricultural surveys or a recent census, such as in the Action Ble project in Mali. Census data are organized by census tract in their raw form but are usually published only at a more aggregated level. Published data at the village level, such as the fichier village in Mauritania are invaluable to project design and evaluation. Where such data are not readily available or in the case of regional projects where data need to be pooled from different countries, the projects may need to collect their own baseline data for design and evaluation purposes.

#### 4. Policy-Relevant Research

Research on the determinants and consequences of population dynamics in the Sahel is not abundant. Although masters and doctoral theses on the subject do exist, the inventory focused on larger scale projects undertaken by research teams. ORSTOM researchers in Dakar have undertaken a series of studies on migration from the Senegal River Valley and the Ground Nut Basin. A currently on-going study by researchers at

IFAN and the University of Maryland is aimed at studying the pattern of migration in the Senegambia region (Senegal, The Gambia, Mauritania and Mali). In Upper Volta, ORSTOM researchers have studied the patterns and determinants and consequences of migration among the Mossi and migration from Upper Volta to the Ivory Coast. More recently, the Office of Statistics and Demography, in collaboration with the CNRST and the University of Montreal, has recently completed a national migration study, including an analysis of the motives of migration.

In the area of mortality and fertility, there have been localized studies of the relationship between infant mortality and fertility in Upper Volta. Fertility studies have been carried out in Upper Volta and Niger in the late 1960's by the CVRS and IRSH, respectively, in collaboration with a team of demographers from Cornell University. There are also studies on sterility and subfecundity in selected areas in Upper Volta. Researchers from ORSTOM Dakar, have studied fertility in the Sine Sa'oum region from 1962-68. A study of the determinants of fertility in Dakar was done in 1972.

IDEP has recently completed a project to analyze the inter-relations between population movement and economic activities in the region by doing case studies of selected villages. This is the most direct attempt, to date, to research the interaction between population and economic development at the micro-level. Funding for extension of this project has been approved by AID but activities have not yet begun. Similar studies within the framework of regional development projects such as the AVV, SOMIVAC, SAED, OMVS are being planned.

### c. Priority Needs/Recommended Activities

#### Personnel Development

The needs for the development of personnel in demography and the related social sciences can be summarized as follows:

- increased recognition by the Sahelian countries of the importance of training personnel in demography, statistics and computer programming;
- better incentives for attracting and retaining qualified personnel in government service;
- increased and centralized information on available training opportunities and scholarships;
- increased numbers of scholarships for training mid-level technicians;
- modification of the basic training curricula in demography and statistics to incorporate a more interdisciplinary social sciences approach and practical experience in the use of the computer and in data analysis;
- increased opportunities for short-term practical training for entry-level personnel;
- increased possibilities for long-term research;
- institutionalization of a training function as part of the role of technical assistance personnel.

#### Data Collection and Analysis

In data collection, first, given the paucity of demographic data in these countries in the last twenty years, a self-sustaining system of demographic data collection needs to be established in each country. It appears that it would be most appropriately done within the framework of the National Statistics Office, a greatly improved national civil registration system and an upgraded health and agricultural data collection network. One prerequisite is a permanent in-house team of

demographers (six to ten, depending on the scope of work), statisticians and enumerators in the Offices of Statistics hired specifically for this purpose.

Secondly, there is an urgent need for current reliable information on the population dynamics of these countries, on a Sahel regional, national and sub-national basis. This need can be partially met by expediting the analysis of the latest censuses and also by making the data available at the census tract and village levels.

Thirdly, depending on the priorities of the country and the region as a whole, there is a need for data on the components of population dynamics, i.e., migration, fertility and mortality, of the region. Regardless of priorities in population issues, household consumption budget and time budget surveys should be promoted since they provide the necessary data for the study of any aspect of demographic and economic behavior.

Fourthly, secondary sources of demographic data need to be strengthened. The civil registration system needs to be reorganized to increase coverage in order to provide a reliable system of continuous recording of births and deaths. Plans are underway in the region, with support from the UN, to reorganize the system and to improve the methodology. These efforts need to be coordinated to ensure a consistent methodology for the region as a whole. While the long-term benefits from this may be high, it is essentially a long-term project which will not yield very tangible results for many years to come.

Finally, both the health statistics and agricultural statistics

systems need to be strengthened to ensure good coverage. This implies the need for assistance both in statistical and field personnel as well as in equipment to ensure access to the more remote areas of the country. In the case of monitoring health statistics, a more far-reaching system of registration needs to be developed by coordinating data collection with health delivery services and health projects in rural areas.

In data analysis, the primary need is an expansion of personnel trained in demography and statistics to undertake the analysis. Such personnel should also be conversant in the use of the computer for computerized statistical analysis packages. Another crucial category of personnel is the programmer who must be able to code the data in computerized form, input the data in the system, access data on the computer system and process the data statistically as directed by demographers. Personnel building is a long-term process while there are immediate needs for analyzing existing data and collecting additional data. The interim solution is judicious use of expatriate technical assistance, especially in the field of computer programming.

Another urgent need is the preservation of data in whichever physical form is most appropriate for the country or the region. This points to the need for a centralized data bank for data sets that are in processible form. For data that have not yet been transferred onto magnetic tapes, this needs to be done as soon as possible. Data sets which are currently not available to the country should be retrieved.

## Use of Population Data in Planning and Project Design

It also appears that in each country the structure exists for collaboration between the Statistics Offices, the census bureau and other government agencies which plan and implement social and economic policies. Central planning processes have been developed in all the countries through the creations of Ministries of Planning and Economic Development. There is the need, however, for this potential to be better exploited through more formalized coordination between the various agencies. One possibility is the creation of a population unit, such as that proposed by the Governments of Senegal and Upper Volta. Another less structured method is to hold periodic work sessions for all officials concerned so that a continual exchange of ideas and collaboration may be developed and sustained. The appropriate university faculties should also be included in this network so that their research interests and findings may be channeled to complement the work of government demographers and planners.

The importance of the use of demographic data in planning and project design needs to be demonstrated to planners and project officers. This can be done through regional and national seminars illustrating the use of population projections on a national and subnational level in forecasting the demand for social services, employment and foodstuffs. Seminars on using demographic data for improved design and evaluation of development projects should also be held for project officers.

### Policy Relevant Research

The list of research projects previously discussed is not exhaustive; however, it clearly points to an extensive non-Sahelian involvement in these socio-economic studies of population in the region. There is a need to promote direct involvement of Sahelian researchers, such as in the IFAN - University of Maryland Project and the National Migration Survey in Upper Volta. Organization is underway for a study of the determinants and consequences of migration in West Africa to be coordinated by CODESRIA. The results of such a study should provide insights into the mechanisms determining migration decisions as well as policy recommendations on how to incorporate the consequences of migration flows into planning for economic development and social services.

A similar emphasis has not been given to the study of fertility and mortality in the region. This creates a gap in the understanding of the dynamics of natural population movements in the region. The extension of the IFORD Infant Mortality Survey is a beginning. The participation of Senegal and the planned participation of Mauritania in the World Fertility Survey is also a first step in expanding the study of fertility. In countries where the capacity for such participation does not yet exist or where it is more appropriate to embark on smaller scale studies, such endeavours should be encouraged.

## CAPE VERDE ISLANDS

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

The primary site of demographic activity in Cape Verde is the Department of Statistics (Direccao Geral de Estatistica) located in the Secretariat of Cooperation and Planning (Secretaria de Estado da Cooperacao e Planeamento). The Director of Statistics also serves as the Director of Planning, and working for him in the Demographic Section of the Department are several expatriate technicians and one Cape Verdean who has received short-term training at the INSEE in Paris. The section houses the UNFPA-funded 1979-80 census program, which is staffed by an expatriate demographer and cartographer and several lower-level Cape Verdean technicians. The Cape Verdean supervisor of the 1960 census, who had retired from service, has returned to act as an advisor to the census staff. There are no trained Cape Verdean demographers or statisticians.

Two expatriate technicians with backgrounds in statistics work in the Office of Rural Surveys, which also employs several Cape Verdean enumerators. The cadre of local social affairs workers has received some minimal training in data collection and field survey methods.

#### B. Institutional Network

Other institutions involved in demographic activities (primarily in the form of data collection) include the Ministry of Health and Social Affairs (the Departments of Health and Social Affairs), the Ministry of

Rural Development's Office of Rural Surveys, the Registration Department of the Ministry of Justice, the Ministry of Interior and the Ministry of Labor. None of these offices is served by mid- or senior-level Cape Verdean personnel with advanced training in the social sciences or statistics.

## C. Facilities

### 1. Computer and Computational Facilities

Computer facilities do not exist in Cape Verde. For the censuses carried out under the Portuguese administration, schedules were coded in Cape Verde and processed in Lisbon.

### 2. Library, Documentation and Publication Facilities

A documentation center is maintained at the Department of Statistics, which contains all of the department's publications as well as routine publications from the United Nations and other international organizations. The Ministry of Rural Development documentation room contains mainly publications on agriculture dating from the colonial period, as well as U.N. and other documents.

Despite the scarcity of personnel and financial resources, there are nonetheless three publications of demographic interest in Cape Verde. The Boletim Trimestriel de Estatística has been published regularly for many years, although the most recent edition dates from the last quarter of 1977. Also of interest is REVISTA, a publication of the Planning Office of the Ministry of Health and Social Affairs. The December, 1978 edition included a report of a small socio-economic study on Sao Vicente

Island. The third publication is the Bulletin Agricole published by the Ministry of Rural Development.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

No basic or in-service training programs exist in Cape Verde for the social sciences, demography or statistics. Further, there are no Cape Verdeans receiving training abroad in either of the latter two areas, who are destined to serve in any of the institutions which were surveyed. The one exception is the Ministry of Health and Social Affairs which has sent four persons to be trained as a preliminary step to establishing a functioning statistics office. Difficulties in recruiting qualified candidates for training were cited repeatedly as a major constraint to resolving this problem.

The Department of Social Affairs has designed a project for the training of sixty social work aides (animateurs sociaux) at a total cost of \$152,000 over three years. The project, which has been submitted to both UNFPA and UNICEF for funding, will consist of two 18-month training courses, each of which will have three to four months of practical field experience including methods of data collection. The Department places high priority on improving its data collection and analysis capability, and, in this regard, would like to provide in-service training for existing personnel.

## B. Data Collection and Analysis

### 1. Data Sets from Surveys and Censuses

Censuses were carried out under the Portuguese administration in 1950 and 1960, and analyzed results were published and are available in Praia. However, the schedules and coding cards remain in Lisbon where the data were processed. The census of 1970 was never analyzed by the Portuguese, but the schedules have been coded and are available in Praia.

The 1979-80 census, the first to be undertaken by an independent Cape Verde, is supported by UNFPA for a total of \$358,290. Mapping of both urban and rural areas was to be completed by early March, 1979, and a three-month training program for enumerators and their supervisors to begin shortly thereafter. The target date for the census is the end of November, 1979, although if national elections are held, the date may be postponed, but to no later than March, 1980.

As of early March, 1979, the census project was still awaiting adoption of three draft decrees relating to the organization of a Census Bureau and a National Census Commission as well as census enumeration. It is anticipated that approximately 500 persons will be engaged in the census operations, in which school teachers will serve as enumerators. The modalities for processing the data have not been decided, although the installation of a small computer is under study at this time.

## General Population Characteristics

Since the 1970 census results remain unanalyzed, the most recent demographic data on the national level are from the 1960 census. The 1970 census is a potentially good source of data on the general characteristics of the population, such as age, sex, geographic distribution and education.

## Fertility

Fertility statistics, both cumulative fertility by age groups and annual birth rates, can be elicited from the 1960 and 1970 censuses. These, along with judicious use of vital statistics for the 1960-70 period, can provide a good idea of fertility trends in that ten-year period.

## Mortality

Unfortunately, mortality questions were not included in the two censuses so that vital statistics are the sole source of information on the subject. Deaths by age have been tabulated regularly from this source. This, with the inter-censal natural growth rate of the population, can be used to derive life-tables for the country.

## Migration

Life-time migration rates can be computed from both censuses. The 1970 census asked questions on the duration of current residence and

place of previous residence which should enable the computation of migration in a given period of time and the pattern of flow of migrants. International migration statistics are available but the degree of detail and quality are not known.

### Labor Force

Labor force status, occupation and sector of employment of the population can be computed from the 1960 and 1970 censuses. A more recent source of labor force data, although only limited to Praia and Mindelo, is the 1978 Employment and Unemployment Survey conducted by PECTA and directed by a Portuguese advisor. This provides detailed information on the profile of economic activities of the surveyed population. Measures such as unemployment rates by age and sex, by occupation and sector; duration of unemployment and means of employment search can be obtained.

### Household Budget/Consumption

The 1978-79 Agricultural Census conducted by the Rural Survey Office comes the closest of any surveys to a household budget-consumption survey. It provides data on the social infrastructure and the economic structure of villages as well as household land tenure, crops and livestock. If its questions can be extended to include age of household members, their time budgets, inputs into production and household income and consumption for a representative sample of the agricultural population, it can be the beginnings of a household survey.

## 2. Permanent Data Collection Systems

Vital statistics are collected by the Registration Department of the Ministry of Justice, which issues certificates for live and still-births, deaths and marriages and forwards the information for tabulation by the Demographic Section. These data have been collected for a number of years by the Portuguese who, since 1951, were administering an overseas province of Portugal. Limited tabulation of these data have been published regularly in the Boletim Trimestriel de Estatística. The coverage of the data is estimated to be about 70% to 80% which is about three times that of other CILSS countries.

Deaths have been tabulated by age and sex and, in conjunction with the census of 1970 and 1979, could be used to derive life tables, something which has apparently never been done despite available sources of data. Births have never been tabulated by the age of mother, although this information is readily available on the birth certificate.

Complementary data reported to the Demographic Section includes the number of emigrants and immigrants by sex, collected by officials of the Ministry of Interior. The quality of this data is not known. The Department of Health in the Ministry of Health and Social Affairs reportedly receives monthly information from all health facilities on the causes of morbidity and mortality by age group, using a simplified version of the international classification of diseases. The Demographic Section indicated, however, that the last reports from the Ministry of Health were received in 1975. A Statistics Office at the Ministry exists on paper, but it is not, in fact, a functioning unit.

In addition to the routine reporting of diseases and deaths, local Department of Health personnel also collect data on mothers and children participating in the Maternal and Child Health/Family Planning program which currently operates on Sao Vicente and is soon to be extended to other northern islands as well, gradually covering the entire country. A form kept on the mother provides information on pregnancy history, including a record of abortions. The form for the child, which is maintained until the child is six years of age, provides a record of height and weight and also includes, for the first three years, a record of contraceptive practices used by the mother (and father). There are no statistical tabulations of these data.

As mentioned earlier, data collection activities are also undertaken by the Department of Social Affairs, the Rural Survey Office, and the Department of Labor. Social affairs personnel in the field prepare and maintain portfolios (dossier de zone) for each of the country's fourteen counties (concelho) which include qualitative socio-demographic and economic data on all the villages in those areas. Some of the data collection is carried out by local volunteer members of the Social Action Committees, with social workers in charge of the tabulations.

### C. Application of Demographic Data to Planning

The Cape Verde government is now in the process of preparing its first five-year development plan for 1980-85. It is unclear to what extent the Department of Planning can and will utilize the relatively large amount of fairly good available data to undertake various analyses and projections regarding the population. An agriculture sector

assessment was recently carried out by USAID in collaboration with the Ministry of Rural Development. Using available census data, this document presents a basic demographic profile of the country and outlines current factors affecting population growth. Based on 1977 population estimates, the study also includes figures on total and rural population densities in relation to total agricultural lands. The study report has been well received by the government, despite the conclusion that Cape Verde can never become self-sufficient in food production, given current and projected population growth and the amount of available arable land. Judging by the favorable reaction to the analyses which have been done, it appears that the government is aware of the importance of good demographic data and the need to incorporate these data into their development planning.

#### D. Future/Planned Projects

The 1979-80 census is the major future demographic project which will provide new population data.

#### E. Priority Needs/Recommended Activities

Although important demographic data are available in Cape Verde, there is a critical need to train Cape Verdean demographers and statisticians at all levels. At the present time no plans for such training exist. However, in conjunction with the creation of a Census Bureau, the UNFPA census advisor has recommended to the government that training be carried out in three areas: statistics, demography and data processing, with priority being given to the latter.

A second priority need is to analyze and exploit existing data. For example, the Department of Statistics wants very much to carry out an analysis of the 1970 census. One means of doing this would be to send the coded schedule to Lisbon, an operation which would cost approximately \$80,000 plus the services of a consultant. A second, politically more desirable possibility would be to do the analysis somewhere in the region, for example, at the Sahel Institute. If this analysis could be completed, then together with an analysis of the 1979 census, there would be time series data available for Cape Verde covering a period of thirty years.

Another ingredient of an analysis of demographic changes in the Cape Verde Islands would be an evaluation of the completeness of the vital registration system. The evaluation could consist of matching the 1970 census returns with births for the previous five years and then repeating the same procedure using the 1979 census.

In terms of specific studies which might be undertaken, a high priority is attached by both the Department of Statistics and the Ministry of Rural Development to gaining a better understanding of the process of emigration. The relatively high rates of emigration recorded for the period 1970-72 declined beginning in 1973 as a result of the worldwide energy crisis and the associated decline in employment in Europe and elsewhere. Unfortunately, detailed migration data between 1973 and 1976 are almost totally lacking due to the change in government administration during that period.

## THE GAMBIA

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

There are currently only four Gambians with training in demography. One has an advanced degree in demography from the London School of Hygiene, another was trained at the RIPS. There is no shortage of statisticians and statistical clerks.<sup>6</sup>

#### B. Institutional Network

##### 1. Government

The coordination and collection of demographic data are undertaken primarily by the Central Statistics Bureau within the Ministry of Economic Planning and Industrial Development (MEPID). This bureau was responsible for the 1963 and 1973 Population Censuses, a National Sample Survey of Agriculture, a Household Budget Survey, an Urban Labor Force Survey, and the 1978 Migration Survey.

Other government institutions directly involved in demographic data

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6. The U.N. supports two positions within Central Statistics and provides scholarships through their Strengthening of Statistical Services Program.

collection include the Ministry of Agriculture, where a socio-economic monitoring unit collects data useful to planning and evaluating the large Rural Development Project. Also, the Ministry of Health is responsible for the vital registration system. There is not a division in the Ministry of Health responsible for the collection of health statistics. Such statistics are available from maternal/child health clinics but not on a systematic basis.

## 2. Other

The Medical Research Council (MRC), an autonomous British research group, has conducted a 26-year demographic and health study of four villages. The Council is set apart from the network of institutions involved in socio-economic and demographic research in the Gambia, and relies on an expatriate staff.

Communications between the offices of the different ministries are often frequent and personal, due to The Gambia's small size, the limited number of trained professionals, and the lack of large bureaucratic structures within the ministries. Agriculture and Statistics work together fairly closely and share data, and MEPID relies on Central Statistics for its statistical data.

## C. Facilities

### 1. Computer and Computational Facilities

Although office space and facilities appear adequate within the planning ministries, The Gambia is severely hampered by the lack of any

computing facilities. Plans are underway to install a mini computer within Central Statistics with U.N. support.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

Currently, there are no opportunities in The Gambia for advanced training or university level training in demography, statistics, economics, sociology or other population related subjects. Some fellowships are available for long-term training abroad. There are Gambians currently in training at the Cairo Demographic Center and RIPS. Gambians have also participated in the short-term training program in data analysis at the U.S. Census Bureau.

### B. Data Collection and Analysis

#### 1. Data Sets from Surveys and Censuses

The major demographic studies of The Gambia are three: the 1963 and 1973 censuses and a longitudinal study of four rural villages conducted over a 26-year period by the MRC. In addition, there is a national sample census and migration survey currently being processed, and separate socio-economic data from an urban labor force survey, annual agricultural sample surveys, the Ministry of Agriculture's socio-economic monitoring unit, as well as a 1968/69 Banjul area household budget survey.<sup>7</sup>

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7. In the colonial period there were almost decennial (11-year average interval) population counts dating back to 1891.

The 1963 census was a simple de facto population count, with a minimum of questions concerning demographic behavior and no socio-economic aspects. The 1973 census was slightly more complex in that it included questions on education, household relationships, fertility, and mortality--but no socio-economic data beyond ethnicity and place of birth. The MRC study provides data with extremely long time depth, on a tiny population (it is complete for one village of about 1100, less complete for a total population of ca.4000). It also lacks economic data, although the agricultural surveys conducted annually since 1973/74 complement it to a certain extent. As a result, one can only roughly estimate the demographic structure and behavior of the Gambian population, and socio-economic data cannot be correlated with demographic variables. The latter data have been collected separately, tabulated manually (as have demographic data), and are too thin and/or particularistic to assure depth, breadth, and accuracy.

#### General Population Characteristics

Of the general characteristics of the population, age, sex, ethnicity and place of birth have the best and longest historical records. Questions on education and relation to head of household were added for the 1973 census. The only nationwide data on marital status, occupations, and economic activities, on the other hand, come from the 1978 1% Sample Census and Migration Survey. Other general characteristics, including languages, religion and income, have yet to be surveyed on a nationwide basis.

## Mortality

Regarding mortality, accurate data are available only for the four villages in the MRC Keneba study. Rough estimates of infant and overall mortality are possible for the nation as a whole from the 1973 census through household heads' estimates of number of living and deceased children of women in the household. It was also asked whether each person's parents were alive.

## Fertility

Fertility data are not lacking in The Gambia. Questions on births by age of women, children-ever-born and the number of surviving children were asked in the 1963 and 1973 Population Censuses and the 1978 sample census. This provides a good time-series on age-specific birth rates, children-ever-born by age for the country as a whole from which age-specific birth rates of age cohorts may be obtained. This represents the most valuable source of fertility data in all the CILSS countries.

## Labor Force/Household Budgets

Data on the labor force and on household budgets and consumption are currently available only in separate sectoral studies, not on a nationwide basis. The urban areas have the greater number of studies, including those already mentioned done by Central Statistics, as well as the socio-economic data collected for a recent survey of the impact of tourism on The Gambia. The socio-economic component of the Land Resources Study of twelve large Mandinka villages in the estuary of the Gambia River collected information on time budgets of individuals, income

and consumption and the composition of households as well as information on the social and economic structure of villages. If this format can be extended to cover a representative sample of all villages and to include specific demographic questions it can be a potentially invaluable source of household socio-economic and demographic data. The National Migration Survey asked primary and secondary occupations and areas of economic activity for individuals of all ages.

### Migration

The question of migratory patterns is of priority interest to The Gambia, particularly international migration and the rural exodus. The national migration survey of 1978 will provide the first detailed information on migratory trends in the area, the only previous information being place of birth as opposed to previous residence (in the 1973 census). A study of seasonal migrants farming in The Gambia (strange farmers) was done by Kenneth Swindell. The study covers only a small geographical area, but estimates that "strange farmers" may account for at least five percent of the agricultural labor force.

Projects in The Gambia which rely on national financing are very modest and limited in scope. Within all of the ministries visited there exist projects with external donor support. The 1973 census as well as the 1978 migration survey relied almost exclusively on external support. The U.N. will be financing the 1983 census, although the question of support for field staff salaries is still being discussed.

## 2. Permanent Data Collection Systems

Vital events registration data are very incomplete. Gambian law requires all Gambians to report each live birth and each death, but this is practiced only in the urban areas. Those records are currently kept by the Health Ministry. A reorganization of the registration system has been proposed by Central Statistics.

## 3. Related Social Science Research

There are no other Gambian institutions conducting social science studies outside of the government system. The Medical Research Council does medical research, and foreign institutions such as the University of California-Santa Cruz, have collaborated with national institutions (Health) on specific projects.

## 4. Data Dissemination

Results of the 1963 and 1973 censuses are available, and three volumes of the 1973 Census have been published. The Ministry of Agriculture plans to publish an annual report including data from its socio-economic monitoring unit, and has published an impressive volume of results from the baseline study done in preparation for the Rural Development Project. The Medical Research Council has largely confined the publication of results from the longitudinal Keneba study to professional journal articles, but the data are currently being computerized in England, and the results of the study may be disseminated more widely following completion of the computer analysis.

### C. Application of Data to Planning

Statistics from the Central Bureau of Statistics as well as U.N estimates are being used by MEPID in the design of the next five-year development plan. There is disagreement between the two sources on the estimated rate of net immigration. Other ministries, including Education and Tourism, but primarily MEPID, are interested in the utilization of demographic data for program and policy planning.

Advisors from the World Health Organization (WHO) collaborated with the Ministry of Health and utilized population estimates and projections in the preparation of a health planning strategy paper.

A Statistics Coordinating Committee has been created to plan the statistical base needed for planning within MEPID. The posting of a full-time population advisor (or half-time advisor with responsibilities for health or environmental planning) is also being discussed. There was a good deal of interest expressed in considering the effects of population trends in formulating development plans, and some interest in examining how population variables--specifically migration and mortality--have been affected by development.

### D. Future/Planned Projects

A household budget sample survey is planned by Central Statistics for 1981, but not yet financed. This would cover both rural and urban areas and would provide very important information for planning.

The 1983 census will collect socio-economic as well as demographic

information, including information on economic activity, literacy, and condition as well as type of housing. More data will be sought on fertility as well as mortality, and questions on migration and nuptuality will also be included. It is still pending funding from the ECA for salaries for field personnel.

Central statistics has proposed a reorganization of the registration system of the Health Ministry. If implemented, it would establish a system for the rural areas as well, beginning with a pilot area and extending gradually to the whole country. Ultimately such a record, together with marriage registration, would provide comprehensive demographic data. The reorganization would involve a lengthy process, and the vital registration data could not be expected to replace survey data for at least a quarter of a century.

The Ministry of Agriculture has plans to publish an annual report to include data from its socio-economic monitoring unit.

The UN plans to provide support to install a mini-computer within the Central Statistics Office.

## E. Priority Needs/Recommended Activities

### Data Collection

Virtually all of the institutions surveyed in The Gambia needed better demographic data, particularly infant mortality. Planners in agriculture feel that mortality affects willingness to live and work in certain areas, hence migration. Those in health and family planning are interested in related questions of infertility, subfertility, and infant

mortality because they are believed to have a strong effect on receptivity to child-spacing programs. No study of these questions is currently being planned, but there is general interest in having such data. Most people feel that if regional coordination can be achieved by the Sahel Institute, such data will be even more useful. However, if a regional study proves cumbersome, national data are still an immediate priority.

Similar questions as those found in the National Migration Survey regarding economic activity for individuals of all ages, if included in the 1983 census, together with income estimates (monetary and in kind), would provide the necessary beginning to economic analysis for The Gambia. Even if the absolute accuracy of the data were questionable, it could constitute the first step to a national data base on which a time series could be built through subsequent censuses or representative sample surveys.

### Personnel

There is a severe shortage of statisticians and statistical clerks. Although additional scholarships are needed for training in demography, statistics, and socio-economic disciplines related to population, it may be difficult to identify a sufficient number of candidates for such training to meet projected personnel needs. (An estimated 25 statisticians are needed by the time of the 1983 Census, for example.)

### Computer Facilities

The lack of any computing facilities in The Gambia is another

serious limitation on the processing and analysis of demographic data. Installation of a mini-computer which can support standard statistical packages and large data sets an essential first step in removing this constraint.

## MALI

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

Mali is not severely lacking in trained demographers. There are currently ten demographers trained at IFORD and IDUP working in the country. Four are working at the Census Bureau and the rest distributed among the Human Resources Planning Division (Division de la Planification des Ressources Humaines), the Urban Affairs Workshop in the Department of Urban Affairs and Housing (Atelier d'Urbanisme, Departement de l'Urbanisme et de l'Habitat), the Office of Educational Planning (Direction de la Planification et d'Equipement Scolaire) and other various departments. Currently, one demographer is in training at CEDOR. Thus, effectively only four or five demographers are engaged in demographic data collection and analysis activities, in the strict sense of the term.

It appears that the time of the demographers at the Census Bureau will be totally absorbed by the analysis of the census, and they will not be available for other projects until the analysis is well underway. A UNFPA advisor for data analysis has been assigned to the Bureau.

Statisticians staff the Bureau of Health Statistics (Section des Statistiques Sanitaires), the Survey Division of the National Statistics Office (Division des Enquetes, la Direction Nationale de la Statistique et de l'Informatique), the Urban Affairs Workshop, the Bureau of Manpower Statistics (Bureau de la Statistique de la Main-d'Oeuvre) and the Office of Education Planning.

The availability of statistical assistants constitutes more of a problem. There is an insufficient number to staff the regional centers of the Office of Statistics. There is also a general shortage of such support staff in the various ministries.

At the time of this report, the Census Bureau has four programmers working on the census results. At least two of these programmers have been trained in Hungary.

## B. Institutional Network

### 1. Government

The Population Division under the Office of Statistics is the primary organization involved in demographic work in Mali. Since the 1976 census, this division has been reorganized into the Bureau of the Census with new facilities quite separate from the Office of Statistics, funded by the UNFPA.

Other governmental institutions which are also involved in the collection and analysis of data related to population are the Health Statistics Section, the Office of Education Planning, the Human Resources Planning Division, the Urban Affairs Workshop and the Survey Division of the Statistics Office. There are no well-developed working relations between these governmental agencies.

### 2. Academic

There are two post-graduate training institutions in Bamako -- the

Ecole Normale Superieure and the Ecole Nationale d'Administration -- neither one of which offers any training in demography, nor is there any research on population currently being done. ORSTOM in Bamako is not involved in any demographic work.

The Socio-Economic and Demography Unit of the Sahel Institute (Unite Socio-Economique et Demographie) is in the process of building up a staff of demographers and social scientists in related fields. This unit plans to build up a demographic data bank in-house and to coordinate and stimulate demographic activities in the CILSS countries.

## C. Facilities

### 1. Computer and Computational Facilities

There are three computer systems in Bamako. The Office of Statistics, the Census Bureau and the Office of Education Planning share a Honeywell-Bull 6260. This is not a very sophisticated system and cannot support general statistical packages that are readily available such as SPSS, BIOMED, OSIRIS, etc. COCENTS, a tabulation package, has been installed by the US Census Bureau. The Urban Affairs and Housing Division has access to the systems of the Societe Malienne de l'Importation et de l'Exportation and of the Banque Malienne du Developpement. In contrast, some offices, such as the Health Statistics Office and the Office of Manpower Statistics, are constrained to doing mental calculations because they do not even have access to electronic calculators.

## 2. Library, Documentation and Publication Facilities

There is no well-organized and well-linked documentation center in the country. The Office of Statistics has a room for storing their in-house documents and publications. The other institutions discussed above publish their own yearbooks and other documents and keep copies of them.

The institutional support budgets of the governmental institutions discussed are funded by the Government of Mali, although the Bureau of the Census is heavily funded by the UNFPA both in institutional and operational expenses. Most of the other institutions receive external assistance in special projects.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

There are no formal training activities in Demography or Statistics in Mali. Scholarships for long-term training abroad are available to nationals through the UN or directly through the training institutions themselves. Short-term (3-4 months) training scholarships are available to employees of the Office of Statistics and the Office of Manpower Statistics.

## B. Demographic Data Collection and Analysis

### 1. Data Sets from Surveys and Censuses

#### General Population Characteristics

The first complete Population Census of Mali was taken in 1976. Prior to that a National Demographic Survey was conducted in 1960-61 which only sampled selected regions of the country. Its results have been analyzed and evaluated by INSEE in collaboration with the Office of Statistics. There was a problem of underenumerations of the total population sampled. Thus, there are no comparable data sets for studying demographic trends in the last decade and a half. Furthermore, besides preliminary tabulations, the 1976 census remains unanalyzed.

Two censuses of Bamako have been taken, one in 1958 and one in 1965-66. They provide information on the age and sex structure, the ethnic and occupational characteristics of the population. The Office of Statistics has issued a preliminary report on the 1965-66 census, but no further analysis has been done on the data. These two sets of data, if of reasonable quality, could be very useful in studying the evolution of the structure and selected characteristics of the population of Bamako.

#### Migration

Migration data on a large scale are unavailable except for information that may be elicited from the 1976 census and the 1960-61 demographic survey, which is limited to measuring life-time migration. The Urban Affairs Workshop undertook a small scale sample study of migrants in Bamako in 1978, mainly for planning purposes.

## Fertility/Mortality

Neither fertility nor mortality studies have been undertaken. Such information can be obtained from the 1960-61 Survey and the 1976 Census.

## Labor Force

Labor force surveys, strictly defined, do not exist in Mali. However, in 1978 the Office of Manpower, under the direction of PECTA, carried out a survey of the informal sector (l'Enquete sur le Secteur Non-Structure). It was also responsible for a census of salaried employees in 1968 (Recensement General des Salaries). Therefore, there is no information on the labor force status or rate of employment of the population of labor force age. Household budget and consumption surveys also have not been undertaken in Mali.

## 2. Permanent Data Collection Systems

Other sources of population in Mali are the annual agricultural surveys which have been ongoing since 1970, health statistics collected by the Health Statistics Office and vital statistics from the civil registration system. Unfortunately, all of these are hampered by incomplete coverage, which greatly reduces the usefulness of the data.

The agriculture survey collects information on family structure, land use, crop yields and inputs to agriculture. Health statistics include information on births, deaths and the incidence of diseases. Both the system of collecting health statistics and of registering vital

events suffer greatly from a lack of administrative organization and trained personnel to ensure the monitoring of the relevant events, especially in the more remote rural areas.

#### C. Application of Demographic Data to Planning

There is no official population policy in Mali. Since reliable national demographic data have not been available for more than a decade, it is to be expected that policy-makers and planners do not use such data in their work. The Human Resources Planning Division plans to use data from the 1976 census in their work. However, in general, there is little contact between the demographers, statisticians and the planners and policy-makers. Rural development projects do occasionally use localized data from the agricultural survey (e.g., the Action Ble Project). When there is a need from good baseline data for the design of projects, baseline surveys have to be conducted to obtain such data.

#### D. Future Projects

The Socio-Economic and Demography Unit of the Sahel Institute, as mentioned above, is building up its demographic staff and plans to establish an in-house demographic data bank and provide greater support to regional demographic activities.

Currently, there is one Malian demographer who plans to do a study of infant mortality in Bamako for his doctoral dissertation.

## E. Priority Needs/Recommended Activities

The need for activities in demographic data collection and analysis in Mali is enormous, touching on all aspects of the study of population.

### Data analysis

The first priority is to complete the analysis of the 1976 Census as soon as possible, since it is the most substantive demographic data base for the country to date. New projects that are being proposed include a household budget survey and a post-census survey on population, migration, employment and living conditions. However, as long as the demographers in the Census Bureau remain occupied with the census, new projects will not be able to be implemented without recruiting additional personnel.

### Personnel

One serious problem for the government of Mali is the lack of financial resources to make civil service jobs sufficiently attractive to its nationals. As a result, trained demographers work abroad or are hired away from the Statistics Office to more administrative positions, such as division chief in the government, which offer greater economic incentives. Although there is a need to attract demographers to work in the statistics office, the civil service salary scale has to be compatible with the economic means of the country.

There is an insufficient number of statistical assistants to staff

the regional centers of the Office of Statistics, and a general shortage of such support staff in the various ministries. This problem can be mitigated by active recruitment of secondary school students for training in statistics. Information on training opportunities and employment possibilities should also be made more readily available. In addition, the Census Bureau is in need of experienced systems analyst-programmers. There are several newly trained programmers and it is a matter of time before they will acquire the desired level of experience.

#### Improvement of Data Base

The agricultural survey needs to be up-graded. Plans are underway to do this with support from the World Bank.

The up-grading of the Health Statistics System and the vital registration system are more of an administrative issue. Given the limited resources of Mali this will not be feasible without substantial external assistance. The UNFPA has expressed an interest in funding the improvement of the civil registration system in West Africa. Mali will be able to benefit from this as well as from the collaborative efforts of the region.

#### Social Science Research on Population Issues

There is an urgent need to promote efforts in the area of social science research in population. However, due to the paucity of data, such research will most likely have to include a primary data collection component.

## MAURITANIA

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

##### 1. Current

The Minister of Planning, who is also Director of Statistics, has training in statistics from the Centre Europeen de Formation des Statisticiens-Economistes pour les Pays en Voie de Developpement (CESD), in Paris.<sup>8</sup> The seven technical officers in the Bureau Central de Recensement de la Population (BCRP) in the Department of Statistics include one demographer trained at IFORD who heads the BCRP, two with qualifications largely in economics and statistics from the Ecole Nationale de l'Administration in Nouakchott, and two with training in statistics obtained at Rabat, Morocco, and Yaounde, Cameroun. The cadre of statisticians assembled for the 1975 census was diminished when several of them left for jobs in the Central Bank and other organizations.<sup>9</sup> The Department of Statistics cannot offer civil servants salaries and working conditions that are competitive with the private sector or international agencies.

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8. Ingenieur-Statisticien/economiste, 1976, CESD, Paris, from African Directory of Demographers, (UNECA, Addis Ababa, July 1978).

9. UNFPA Population Needs Assessment, Draft Report (UNFPA 1978).

In addition to national staff at the BCRP, there are three expatriate advisors, one on general duties and two on processing of the census data.

## 2. Planned

The BCRP hopes that by mid-1984 a total of at least fourteen technicians in demography, data processing and statistical analysis and four or five statisticians will have been trained and will be available for the 1986 census. <sup>9</sup> The UNFPA has agreed to finance the training of three of these technicians abroad (one in demography, one in statistics, and one in data processing).

## B. Institutional Network

### 1. Government

The BCRP is the principal institution in charge of the collection and analysis of demographic data. It is a part of the Department of Statistics which is in the Ministry of Planning. The Ministere du Developpement Rural et d'Amenagement works with the FAO in collecting agricultural and related population data.

The Societe Nationale pour le Developpement Rural (SONADER), which operates a number of development projects supported with foreign assistance, recently created the Evaluation and Sociology Bureau. This office is to assist in the design and evaluation of these projects but has not been directly involved in data collection. It has contact with the Census Bureau through utilization of the socio-economic profiles of

the 3,000 villages in the country (fichier village) generated by the 1976 Population Census.

## 2. Other

Outside of the government, there is little population research or analysis being done in Mauritania. The Institut Mauritanien de Recherche Scientifique does research on archaeology, history, and Mauritanian traditions and culture, but their sociological research has not had a demographic component, being confined primarily to small scale studies of culture and cultural change. They are building a research library, however, which could provide a resource to outside researchers.

## C. Facilities

Office facilities at the BCRP are limited. They hope to acquire new offices when several UNFPA supported projects begin. Offices in other national ministries are also underequipped.

### 1. Computer and Computational Facilities

A computer is available to the BCRP and the Ministries of Planning and Finance. Statistical packages, such as COCENTS and XTally, are available. Two foreign advisors are working with the computer processing of census data and are assisting in the training of a Mauritanian programmer.

## 2. Library, Documentation, and Publication Facilities

The BCRP maintains an in-house documentation center, as does the SONADER. There are two libraries with collections of social science, historical, and cultural publications at the Institut Mauritanien de Recherche Scientifique and the Centre Cultural Saint-Exupery, a French cultural center whose director takes a particular interest in maintaining a collection of available research publications on Mauritania. USAID is establishing a large documentation center as part of its Rural Assessment and Manpower Study (RAMS) in collaboration with the Ministry of Planning.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

There are no training programs in statistics or demography in Mauritania. A training program in statistics was established at the Ecole Nationale d'Administration in preparation for the 1976 census, but was subsequently ended. Plans are under consideration to develop a training program for middle level statisticians through the Demographic Centre, which may be created with UNFPA support. Mauritians argue that they have been at a relative disadvantage compared to students from other francophone African countries in gaining admission to regional institutions where admission is awarded on the basis of competitive examinations.

In the past, Mauritians have been sent for training in demography to IFORD in Yaounde, Cameroon, and in statistics to the INSEA in Rabat,

Morocco or ISPEA ISPEA in Yaounde. The BCRP is anticipating the return of three technicians currently in training abroad. In addition, the government of Canada has provided scholarships for masters level training at the University of Montreal, where a number of Mauritians have studied economics.

## B. Demographic Data Collection and Analysis

### 1. Data Sets From Surveys and Censuses

Demographic data in Mauritania are very limited. The two principal sources of demographic data in Nouakchott are the 1964-65 Sample Demographic Survey and the Population Census of December 1976 - April 1977. The 1964-65 survey was carried out under the supervision of a French team of experts. The results were published in France, and the survey schedules are not available in Nouakchott.

The 1976 census took place in two phases: 1) a complete enumeration of the sedentary population in December 1976, and 2) a one in ten enumeration of the nomadic population in February-April 1977. One questionnaire was prepared for the household, another for the village. The village questionnaire included questions on type of cattle, crops, and the social infrastructure of the village. For the nomadic sample, the household questionnaire was the same as that for the sedentary sample, except that the occupation questions were left out and fertility questions were added. Questions were also asked for the whole household on extent of agricultural activity, stability of residence, distance travelled and sedentarisation intentions. The sampling methodology used for the nomadic sample was innovative and esteemed relatively successful,

and could be instructive to other countries with significant nomadic populations.

Results from the 1976 census have been tabulated manually and have been published. The first computer printouts, with the results of the fichier village, are now available.

### General Population Characteristics

Until the 1976 census results are analyzed, Mauritania has nationally representative demographic data only for 1965. The 1965 survey and 1976 census results can be used for the analysis of the change in the age-sex, occupational, ethnic structure, and the geographic distribution of the population in the 1965-76 period.

### Fertility

Fertility data are available from the 1965 survey but only for the nomadic population in the 1976 census. Thus, no direct measure of fertility for the total population will be available for this decade. Furthermore, estimates of current fertility will have to be made to create a time-series.

### Mortality

Information on mortality is only available for 1965 and for the nomadic population in 1975. However, estimates of survival rates can be made using the age-sex structure of the two sets of data to fill in the gap.

## Migration

Information on life-time migration and migration in a given period of time can be obtained from both the 1965 and 1976 data sets. The 1976 census includes a question on previous place of residence and duration of current residence which, with the other information, enables migration flows in a given period of time to be computed. Information on spatial mobility of the nomadic population from the census is even more detailed including questions on the frequency and distance of moves, and intentions of sedentarisation.

## Labor Force

Statistics on labor force status and occupation are available from the 1965 survey and the 1976 Census. A study of the current and future employment situation in Mauritania was done by the ILO in 1977.

## Household Budget Surveys

No such surveys have been conducted in Mauritania.

## 2. Permanent Data Collection Systems

Vital statistics are almost non-existent outside of the urban areas, and even there, the registration of deaths is quite deficient. There appear to be two potential sets of data for births: one set would originate from the birth certificates which are filed with services of the Ministry of the Interior and another set which would originate from

the records of the maternities and maternal and child health clinics. While no tabulations from the birth certificates could be located, some analysis of the records of the Nouakchott maternities indicated that their records are more complete than those of the Ministry of Interior.

#### C. Application of Demographic Data to Planning and Research

The application of demographic data in government planning is limited due to the lack of data. The application of research findings at the SONADER is confined to their utilization in specific projects.

#### D. Future Projects

Demographic work in Mauritania has been financed primarily with external assistance, and this will probably continue to be the case in the near future. A large investment from international sources for population-related activities in Mauritania is anticipated. The UNFPA has provided assistance for the implementation and analysis of the census. It will also be sponsoring a multi-million dollar program of assistance to population projects in Mauritania over the next three to five years. USAID is conducting a multi-million dollar RAMS study to be done in collaboration with the Ministry of Planning. This study will review the available population literature and data on Mauritania, and will analyze population trends and their implications for national development strategies.

With UNFPA support, the following demographic data collection projects are envisaged over the next five-year period:

A National Fertility Survey within the World Fertility Survey Program

- A two-round migration survey
- Improvement of the birth registration system (currently limited to cities), extending it to other areas.

A national population census is planned for 1986. To provide basic training in statistics to mid-level personnel, plans are underway to establish a Demographic Centre in Nouakchott with UNFPA support. This centre would be a base for population research activities and would conduct a small training program. Training in computer programming is being considered as a possible project at the proposed Demographic Research Centre.

The Ministere du Developpement Rural et d'Amenagement is planning an agricultural census in 1980 with assistance from the FAO.

#### E. Priority Needs/Recommended Activities

##### Training

The training of technically qualified personnel is seen as a priority area for the future. Where competitive exams have been required to gain entrance into the regional institutions, the Mauritians have been at a disadvantage relative to candidates from more developed countries in the region. Building staff capacity to undertake demographic data collection, analysis and application is the most urgent priority. Scholarship opportunities for study in outside institutions should be provided in demography, statistics, and programming, and technical training for support personnel should be a part of ongoing projects. There is some debate, however, whether the most appropriate means for training mid-level technicians would be through the development

of a program in Mauritania, as part of CESD, or whether it would be better to work out an arrangement with a relatively more developed country in the region such as Senegal to facilitate the entrance and training of Mauritians in an already established institution there.

Additional training opportunities and the development of attractive career opportunities are crucial to the development of future demographic activities. The shortage of both mid-level and university-trained personnel is acute, and the demographic activities now being planned will have to rely heavily on expatriate advisors in the immediate future. Given this problem, internationally sponsored projects should include provisions for the training of Mauritanian counterparts. The RAMS project does not yet include such a component, but given the scope of the study and the tremendous investment USAID is making in the project, every effort should be made to integrate the project into work being done at Mauritanian institutions, for example working with the BCRP to analyze population trends. Attention should be specifically focused on providing training to Mauritanians and building Mauritanian institutional capacity within the context of the project.

Financial resources for population-related activities are not lacking. However, the lack of trained Mauritanians may be a constraint to their implementation.

#### Data Collection and Analysis

To increase the demographic data base through the processing of existing data and the collection and analysis of new data, the following activities are recommended:

- Continued analysis of the 1976 census and nomadic sample.
- 1986 census.
- Updating of the fichier village (The continued registration of basic data on villages as begun during the 1976 Census).
- Fertility and Mortality Survey (Participation in the World Fertility Survey is under consideration).
- Migration Survey (could be coordinated with other studies in the region).
- Improvement of the civil registration system -- A live birth civil registration project is being considered.

#### Other areas

Two other areas representing priority needs are the provision and upgrading of research/analysis facilities, the preservation of existing data, and the publication and dissemination of data and research results.

Preserving copies of demographic reports, with information on the methodology used, is a problem. Results from the 1965 census were published in France and copies are not easily obtainable in Mauritania.

There is little social science research published in Mauritania. The Institut Mauritanien de la Recherche Scientifique publishes a journal, but to date its sociological research efforts have been largely descriptive work on culture and traditions. The socio-economic studies done by the SONADER are not published and circulated outside that institution.

## NIGER

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

##### 1. Current

The primary institution involved in demographic activities in Niger is the Demography Division (Service de la Demographie) in the Office of Statistics (Direction de la Statistique) in the Ministry of Planning. It is staffed by one demographer who is also involved in the analysis of the latest census of 1977 in the Census Bureau (Bureau du Recensement), the only Nigerien demographer currently working in the country. He is a recent (1976) graduate from the University of Paris, with a Doctorat du Troisieme Cycle and has completed a short-term training course at CEDOR. The Census Bureau has been set up as a separate organization for dealing with the 1977 Census. The UNFPA funds a foreign expert in statistical demographic analysis. There are at least two professional statisticians in the Office of Statistics. Another Nigerien demographer, graduated from IDUP, is now working at the Sahel Institute.

##### 2. Planned

Information on students currently in training from the Office of Human Resources (Direction des Ressources Humaines) shows students being trained in economics and statistics at the undergraduate and graduate levels but none in demography. The possibility exists for training some of these graduates in short-term (1 year) programs in demography at IFORD or CEDOR.

## B. Institutional Network

### 1. Government

The Demography Division is the focal point in the network of institutions involved in demographic work.

The Census Bureau, because of its origins, has a very close working relationship with the UNFPA. Since it is staffed by the demographer from the Demography Division, there is also a link between the UNFPA and that division. During the visit of this mission to Niamey, the UNFPA regional demographic advisor for the Sahel (Conseiller Regional en Demographie) was present and had been involved in reviewing a proposal from the Demographic Division for funding of a national fertility and migration survey of Niger. The demographer from the Demography Division used to give a course in the Department of Human Geography at the University of Niamey. However, this has recently been terminated and that working relationship no longer exists. The Bureau of the Census, through its dissemination of preliminary census results, provides data used by other government institutions such the Agriculture Division in the Ministry of Rural Development. On the whole, working relations between the Demography Division or the Census Bureau and other government divisions are very weak.

Other institutions which are involved in population data collection and analysis include the Office of Health Infrastructure (Direction de l'Infrastructure Sanitaire), the Office of Agriculture (Direction de l'Agriculture) in the Ministry of Rural Development and the Educational

Planning Division (Service de la Planification Scolaire).

2. Academic

The Department of Human Geography at the University of Niamey, the Institut des Recherches en Sciences Humaines (IRSH) and the Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM) are involved in social science research but not specifically in demography.

C. Facilities

1. Computer and Computational Facilities

Both the Demography Division and the Bureau of the Census have access to a computer system, although, to date, no statistical analysis in either office has been done on the computer. The computer, however, is in operation. The Education Planning Division has access to the computer system at the Ministry of Finance and it began in 1978 to computerize its data processing and analysis. Some calculations are still done manually on electronic calculators.

2. Library, Documentation and Publication Facilities

The Office of Statistics maintains a collection of in-house publications dating back to independence, including documents of the Demography Division and the Bureau of the Census. There is no well-developed documentation center with a system of exchange, but it does have publishing facilities for in-house work, including the preliminary results of the census. There is no documentation center as such in the Agriculture Division, but the division maintains a stock of

its publications and working papers, such as the Annual Report on Agricultural Statistics. The Education Planning Division also does not have a documentation center; it publishes a directory of education statistics. IRSH has a good library which has a collection of general material on demography and population studies in both French and English and also studies on Niger published by the Office of Statistics or by its own staff.

The major demographic activities in Niger have been financed by the Government of Niger, the FAC, and the UNFPA. The institutional budgets are mainly governmental, and operational budgets for special projects are primarily funded by donors. Currently, availability of funds for demographic activities does not present a problem.

### III. DEMOGRAPHIC ACTIVITIES

#### A. Training

There is no formal training program in demography in the country. The Department of Geography at the University of Niamey used to offer a course in Introductory Demography. Nigeriens have access to training opportunities in demography at IFORD, IDUP and CEDOR. Training in educational statistics is available at the UNESCO regional center in Dakar. Training in statistics is available at INSEA in Rabat, Morocco, the ISPEA Yaounde, Camaroon or the Ecole de Statistique in Abidjan.

#### B. Data Collection and Analysis

The principal sources of demographic data for Niger are presented in Table 2. The secondary sources include health statistics collected by

the Ministry of Health and the Agricultural Survey conducted annually by the Agriculture Division.

#### 1. Data Sets from Surveys and Censuses

Since independence the Office of Statistics and recently the Demography Division have been involved in major data collection and analysis projects in Niger. This includes a national demographic survey, an administrative census of Niamey, a study of the nomadic population, a household budget survey of Niamey and the 1977 population census. Except for the 1977 Census, the other projects were done in collaboration with INSEE.

#### General Population Characteristics

The first complete count of the total population was attempted by the 1977 Population Census. However, except for a preliminary count of the population by regions, the results have not been analyzed. Prior to that, no nationally representative demographic data existed, since the 1960-61 National Demographic Survey only covered the sedentary population, and the study of the nomadic population was done at a later point in time, 1963. Thus, the study of national population dynamics over time has not been possible. However, the results of these two studies have been very thoroughly analyzed and utilized in research.

#### Migration

There are no detailed migration data for Niger except for a small scale localized study done at the Nigerien frontier bordering on Nigeria,

Upper Volta, Benin and Mali. Life-time migration statistics can be obtained from the 1960-61 Survey, the Study of Nomads and the 1977 Census.

### Fertility/Mortality

There is one fertility survey done in 1969 by Ian Pool and a group of researchers from Cornell University in collaboration with IRSH. This survey collected information on fertility, mortality and family structure and covered selected regions of the country. Where these regions coincided with regions covered in the 1960-61 survey, the researchers have done a comparison of the fertility and mortality rates between the two points in time. Comparisons of urban and rural areas were also made. Mortality data, except from 1960-61 survey and the 1969 fertility survey, do not exist on a large scale.

### Labor Force/Household Budget

There have not been any labor force surveys in Niger. A household budget survey was conducted in Niamey in 1961-62, and the data has been analyzed by INSEE.

Demographic data are available from the agricultural, household consumption and time budget surveys conducted by the Agriculture Division of the Ministry of Rural Development. This is a very good potential source of annual household data once the implementation and coverage of the survey can be improved.

## 2. Permanent Data Collection System

Data on births, deaths and morbidity are very poor. The Health Statistics Office has had trouble with monitoring health statistics since 1968 due to a change in personnel. Coverage is very poor and the system of monitoring very inadequately developed.

The vital registration system is functioning very poorly so that vital statistics collected by the system are not reliable, since coverage is only about twenty to thirty percent.

### C. Application of Demographic Data in Planning and Research

The Agriculture Division of the Ministry of Planning conducts annual agricultural surveys which collect agricultural, socio-economic and demographic data for planning purposes. It also uses data from the census for projecting food consumption needs of the country. In regions of special interest to project development, local surveys are carried out on family structure, the division and utilization of land and other economic activities.

The Education Planning Office conducts a survey of primary, secondary and post-secondary schools in the country. The purpose of this survey is to obtain information on the enrollment of schools so as to plan for the need for teachers and facilities. However, because data on the age and sex structure of the population from the latest census is still unavailable and there is no alternative source of up-to-date data, it is not possible to know and project the school age population and

thus, the current rate of schooling and future needs are unknown.

A member of the faculty of the University of Niamey is currently writing a doctoral dissertation on settlements on the outskirts of Niamey. IRSH, although not currently involved in any work related to population, has collaborated in the past with expatriate researchers in population research such as the fertility survey of Niger, 1969, directed by Ian Pool. ORSTOM is not currently involved in population research.

#### D. Future Projects

A proposal for a national fertility and migration survey has been submitted by the Service de la Demographie to the UNFPA. Most of the attention of the Service and the Census Bureau will have to be devoted to the analysis of the census in the next few years. Any additional projects will have to rely heavily on expatriate technical assistance.

#### E. Priority Needs/Recommended Activities

There is clearly a very urgent need for more demographers in the Demography Division, the Census Bureau and the country as a whole.

The government ministries do not seem to be demonstrating a demand for demographers; that is, there are no vacant positions for demographers waiting to be filled by qualified people. If this reflects the low priority of demographers in the skill needs of the country, the importance of demography needs to be promoted. The statistical and technical support staff also needs to be strengthened. This includes the need for statistical assistants who could take on the responsibility of

the coding, processing and computation of data under the direction of the demographer. There is also the need for experienced computer experts to implement the transition to computerized data processing in the Demography Division and the Census Bureau.

The existing situation in demographic data availability points to a very urgent need to expand the data base by increasing data collection and analysis activities as well as improving the instruments of data collection. Given the paucity of data, the demographer in the Demography Division sees desired future projects as covering all areas. These include: 1) a migration survey at political frontiers, 2) a study of urban and rural fertility and mortality, 3) a survey of mortality and fertility in the nomadic zone, 4) the improvement of the vital registration system, and 5) a national fertility-migration survey. The last two projects are under consideration for funding by the UNFPA. There are plans to reorganize the vital registration system on two fronts--the administrative organization of the system and the registration methodology.

The current staffing of the Health Statistics Office appears to provide sufficient capability for collecting and analyzing health data in the capital city. However, the problem of monitoring diseases, deaths and births in rural areas is related to the larger problem of the low coverage of the health delivery system in these areas and the low level of education of rural health workers. Thus, although the needs of this office are clearly an upgrading of field staff to collect health data and an extended network of such staff to increase its coverage of the total population, they are closely linked to the development of the health delivery system.

IRSH, ORSTOM and the University of Niamey could provide a potential base for implementing demographic research in Niger. There is definitely a need to institute this kind of activity with funding for specific projects and personnel.

## SENEGAL

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

There are currently six Senegalese demographers working in the country. This is far below the number of trained Senegalese demographers. One works in the Ministry of Planning and five in the Division of Surveys and Demography (la Division des Enquetes et de la Demographie [DED]) and the affiliated Bureau of the Census, both in the Statistics Office (la Direction de la Statistique) of the Ministry of Finance. The Statistics Office is the primary institution involved in demographic data collection and analysis. It has a support staff of mid- and lower-level statisticians and three systems analyst-programmers. The seven regional statistics offices established for the implementation of the 1976 Census are understaffed due to a shortage of qualified statisticians.

This shortage of mid-level statisticians is quite acute despite the training available at the ENEA in Dakar and other training opportunities available to Sahelians in Africa. This shortage is due to the great demand for such expertise in the private sector and the inability of the civil service to offer competitive salaries. The situation is similar for systems analysts-programmers. While there is an abundance of such qualified people in Dakar, they are absorbed by banks and the private sector. There are other statisticians specializing in labor, health and education statistics working in various government ministries.

## B. Institutional Network

### 1. Government

The DED and the Census Bureau form the focus of the network of institutions involved in demographic activities. The DED and the Office of Statistics have been involved in demographic data collection and analysis since 1960. The Census Bureau was created out of the DED for the design, implementation and analysis of the 1976 Population Census.

There are other government institutions involved in such activities. The Bureau of Health and Demographic Statistics in the Ministry of Health collects data on the incidence of diseases and, to the extent feasible, on births and deaths, and publishes an annual report.

The Division of Human Resources in the Ministry of Planning collects data on manpower needs and educational resources, coordinates the two sources of information for planning purposes and publishes a directory of such information. It has collaborated with the DED in an analysis of the active population of Senegal using data from the 1970-71 National Demographic Survey.

The Labor Statistics Service in the Ministry of Public Service, Employment and Labor (Ministere de la Fonction Publique, de l'Emploi et du Travail) is involved in collecting data on employment and salaries in commercial establishments in the modern sector. It is also interested in information on the traditional sector, which is more difficult to collect. A survey of migration and manpower in Senegal is planned jointly with the Census Bureau as a second phase of the National Fertility Survey.

Within the Ministry of Education, the Bureau of School Statistics collects, analyzes and publishes statistics on school enrollment at all levels, personnel and physical resources. The Bureau of Education Planning is currently involved in projecting the school-age population by region using 1976 Census data. This is being done by an American demographer under contract with UNESCO.

The Department of Regional Planning (Direction de l'Amenagement du Territoire) in the Ministry of Urban Affairs (Ministere de l'Urbanisme) is not currently involved in data collection related to population. However, it did conduct a demographic survey of Saint-Louis in 1970. As an on-going concern, it studies and maps those factors affecting regional population change and distribution for planning purposes.

Within the network of government ministries, although there are no formal arrangements between departments and ministries informal collaboration exists. There is also evidence of the use of demographic data in planning such as in the Ministries of Education, Public Service, Employment and Manpower and Planning. Senegal has proposed a more formalized organization of integrating population issues and data in socio-economic planning through the establishment of a Population Unit in the Ministry of Planning. This unit will be the liaison between the DED and the Ministry of Planning as well as acting as a technical advisory group to the National Population Commission, the policy-making body.

## 2. Academic

In the major academic institution in Senegal, the University of Dakar, there are three departments which are involved in research related to population. The Department of Geography is involved in migration and the spatial distribution of population studies. The Center of Applied Economic Research (Centre de Recherche Economique Appliquee) is involved in research on Senegalese migrant workers in France. IFAN is currently involved in an interdisciplinary study of migration patterns in Senegambia (Senegal, Gambia, Mali and Mauritania). However, due to French influence on the government system, the academic community is not well integrated into the activities of the government network in population activities. These activities are viewed as being important mainly for administrative and not research purposes.

## 3. Other

IDEP, a training institution funded by the UN, is no longer involved in population studies but until 1977 had a demographer on its staff. It offered a course in demography and conducted a project, funded by the UN, on Population Movement and Productive Activity in West Africa.

The OMVS is a regional development organization funded by international agencies and foreign donors. It was established by the member countries, Mauritania, Senegal and Mali, to develop the region along the Senegal River. It contains a socio-economic planning and evaluation component which is charged with collecting baseline socio-economic and demographic data and also with setting up a monitoring

and evaluation unit. A Voltaic demographer will be loaned by the ECA and will be working with a social scientist from OMVS. The component will also be working with ORSTOM, Dakar.

The training institution in statistics, the College de Statistique of the ENEA, will be discussed later on in this report.

ORSTOM is a French research institution which has been heavily involved in demographic data collection and studies in Senegal since 1960. Its demographic activities have almost stopped completely since 1974 due to a lack of funding, and it currently has no demographer on its staff in Senegal. A geographer in residence is involved in migration studies and is collaborating with the OMVS. In the past ORSTOM has worked with the DED, for example, in the 1972 Fertility Survey of Dakar. Currently, it has a permanent staff of enumerators and supplements them with temporary personnel for specific projects.

SONED (Societe Nationale d'Etudes du Developpement) is an applied research consulting firm supported by public and private funds. It is mainly involved in economic studies of development projects in all sectors of the economy which are done under contract. At present, SONED has not been involved in any primarily demographic studies. However, it has the organizational structure to do applied studies of population impacts of development projects.

## C. Facilities

### 1. Computer and Computational Facilities

The Office of Statistics, the DED and Bureau of the Census have

access to computer facilities at the Ministry of Finance. The system is an IBM 370 with the capacity to handle large data sets. Statistical packages such as SPSS and OSIRIS and census analysis packages such as COCENTS have been installed in the system. The DED and the Census Bureau have been using these facilities and packages for the processing and analysis of the 1970-71 National Demographic Survey and the 1976 Population Census. SONED, the Department of Regional Planning, the University of Dakar and ENEA have access to the system.

The University of Dakar has recently acquired its own system which its various departments can use. However, the system is new and not yet fully operational.

The OMVS has access to a system at its headquarters in Saint-Louis.

It appears that many institutions are dependent on the system in the Ministry of Finance, which rents out its computer time. As a result of the demand, some users, such as the Bureau of the Census, are given very low priority for using the system.

## 2. Library, Documentation and Publication Facilities

There are several good libraries/documentation centers and publishing facilities in Dakar and Saint-Louis.

The Office of Statistics maintains a list and a stock of its publications but does not have a documentation center. The Ministry of Planning publishes a statistical yearbook of Senegal entitled Senegal en Chiffres. IFAN puts out regular publications and a list of its publications. It maintains a library which collects external

publications as well. OMVS is building up its documentation center in Saint-Louis. The center will collect in-house documents as well as studies relevant to the work of the organization, and the system will be computerized. ORSTOM, Dakar, publishes in-house work and maintains in its library a collection of these documents as well as other ORSTOM documents. This is probably the most population-oriented collection in Dakar, although the library is small and not highly organized. IDEP has the most systematic library of all the institutions visited. It has a collection of in-house publications and maintains a system of exchange with other libraries. The National Archives has a good collection of population studies, censuses and surveys done in Senegal, including censuses and surveys done in the colonial period dating back to the nineteenth century.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

#### 1. Basic

Long-term basic training in socio-economic statistics is available in the College de Statistique at the ENEA. It trains students to the levels of Ingenieur des Travaux Statistiques and of Agent des Travaux Statistiques, which require 3 years and 2 years of training, respectively. Students are accepted after their Brevet d'Etudes du Premier Cycle (BEPC), which is equivalent to the completion of tenth grade. The curriculum includes six months of field work in data collection. There is no training in the use of the computer. Graduates are prepared to fill the posts of statistical analyst and assistant. The

curriculum is currently being modified to incorporate some courses in demography. The program will also be open to students from other Sahel countries.

There is no long-term training for demographers in the country. They are all trained abroad at IDUP, IFORD or CEDOR.

The various faculties in the University provide training in the social sciences related to population studies such as geography, economics and sociology. At IFAN six-month to two-year short-term training programs are available.

## 2. In-Service

ORSTOM Dakar incorporates an in-service training component for Senegalese researchers in some of their non-demographic projects.

### B. Demographic Data Collection and Analysis

#### 1. Data Sets from Surveys and Censuses

A list of the major demographic data sets in Senegal is presented in Table 2. In addition, a national fertility survey within the WFS program which is the first round of a post-censal survey is currently underway. In contrast to the other CILSS countries, there have been many socio-economic and demographic studies of selected local areas and regions. Some of these studies involved data collection on a small scale. A selected list of these studies will be attached to this report; only the most important of these will be discussed here in Section 3 below.

## General Population Characteristics

Since 1960, there have been two national demographic sample surveys, in 1960-61 and 1970-71, and one population census in 1976. These provide demographic data representative of the country at three points in time over a 16-year period. Although the census did not ask questions on mortality or fertility, a time-series of the age-sex structure and the geographical distribution of the population, life-time migration and occupational structure can be constructed from these data. At the time of the mission to Senegal, census results had been published only for the regions of Casamance, Senegal Oriental and Diourbel.

## Migration

Information on life-time migration can be obtained from the three data sets mentioned above. The 1970-71 Demographic Survey provides more detailed information on the migratory history of individuals. However, results of the survey have not been fully analyzed or published in an official report. The data tape is lost so that further analysis of the migration data will not be possible for some time.

## Mortality

Information on mortality by sex in a 12-month period is available from both the 1960-61 and 1970-71 surveys. In the 1970-71 survey, there is information on mortality by age. This information has not been analyzed except for Dakar. This was done by a researcher at ORSTOM. Mortality data are available for Niakhar and Paos-Koto in the Sine-Saloum

Region from the ORSTOM demographic study of the Sine-Saloum 1963-65. The most current data on mortality, especially infant and child mortality, will be generated by the WFS.

### Fertility

Fertility data representative of the country are available for 1960 and 1970 on births by age of the woman, total numbers of live births, number of surviving children and births in 12-month period. The 1970-71 survey results provide the reproductive history of women in the child-bearing ages. On a more localized level the demography study in the Sine-Saloum Region, the fertility survey of selected villages in the Sine-Saloum and the outskirts of Dakar 1968-69, and the Fertility Survey of Dakar 1972 all provide data on fertility. The WFS results will soon extend the existing 1960-61 to 1970-71 time-series data.

### Labor Force

There has not been any comprehensive labor force survey in Senegal to date although the ILO attempts to monitor labor force statistics on a regular basis. Information on the labor force, occupation, employment by sector, employment status and labor force age population is available for 1960, 1970 and 1976. Detailed information on the use of time of individuals in various economic activities is potentially available from the 1973-75 Pilot Survey on Household Budgets and Consumption, which is still uncompleted. There have been studies done on employment and wages in the modern sector: a study of employment in the public sector done in April 1977 and of employment and salaries in the modern sector, public and private, in December 1978.

## 2. Permanent Data Collection Systems

Data on fertility and mortality are available from civil registration but their quality is very inadequate. Coverage is very poor although it is generally better in urban centers than in rural areas.

## 3. Demographic (Population) Studies

Population research has not been lacking in Senegal. Between 1960 and 1974 ORSTOM was actively involved in such activities (See Appendix 3).

IFAN and the Department of Geography at the University of Dakar are actively involved in social science research related to population. These include the study of the changing geographical distribution of population over time, the trends in migration, the study of attitudes of women in Dakar towards marriage and the family, and the situation of rural migrants in urban areas. The researchers involved are predominantly Sahelian.

IDEP has been involved in a study of population movements and productive activities at the village level in West Africa. The study was terminated in 1977 and further funding has not been approved.

## C. Application of Demographic Data

There is no integrated approach at the policy-making level to relate population issues to issues of socio-economic development. The formation

of a National Population Commission whose function will be to consider policies pertaining to population has been proposed.

At the level of socio-economic planning there is evidence of the use of population data by some ministries: census data are used in the Fifth Plan for education planning, and planning for housing, food and water. However, there is no formal system for the use of population statistics in planning.

Regional development agencies such as the OMVS and the SOMIVAC are in the process of developing the capability to collect and apply demographic data in their project design and evaluation.

#### D. Future/Planned Projects

A proposal has been submitted to the UNFPA for the funding of a Population Unit in the Ministry of Planning to promote and ensure integration of population statistics into the national planning process.

The DED and the Office of Employment are planning to collaborate in a migration and a labor survey as the second and third rounds of a post-censal survey.

#### E. Priority Needs/Recommended Activities

##### Data Collection

The most urgent next step for Senegal at this point is to analyze its existing data sets. Since the data tape for the 1970-71 National Demographic Survey is lost, it is imperative that the results be recoded and transferred into tape as soon as possible. With that completed,

analyses of the national trend in fertility and mortality can be done for the period 1960-70. The processing of the 1976 census results should be expedited so that the trend in age-sex structure, geographical distribution, employment and occupation patterns, and life-time migration of the country can be analyzed for the 1960-1970-1976 period. The census results represent the most current source of demographic information for the country. This is an invaluable source of data for planners if data at the village level could be published. If not, at least the raw data should be made available to them upon request.

The Pilot Survey of Household Budget and Consumption should also be completed, since this represents a very important first step in obtaining data at the village and household level. Such household information is invaluable in studying the determinants of economic and demographic behavior at the micro level. Information on the socio-economic and demographic structure of villages is also very important for the planning of social services and the design of development projects.

A second priority should be to supplement the existing data, such as in the planned Senegal Fertility Survey and the Migration and Labor Survey. If Senegal can establish a system of carrying out decennial population censuses supplemented by regular fertility and migration and labor surveys of the WFS mode on a permanent basis, the country can accumulate a very rich store of national demographic data in the next five to ten years. This requires a diminishing reliance on ad hoc external funding and technical assistance by building up national technical capabilities and promoting national interest in such activities. In the case of Senegal, these appear to be attainable goals in the next five to ten years.

The civil registration system offers the potential of providing continuous data on marriages, births and deaths. However, to improve it to the level of being able to generate reliable data requires both administrative reorganization and methodological improvements. Thus, while it is an important component of the demographic data system, its reorganization is essentially a long-term project. Currently, the UNFPA has expressed an interest in assisting West African Countries in improving their civil registration systems. Senegal will be able to benefit from such assistance and also from any regional efforts in this direction.

#### Documentation

Although there is not a lack of documentation and publication facilities in Senegal, there is a need for a more extensive and coordinated system such as that planned by the OMVS.

The OMVS documentation center has the potential of centralizing studies and published data related to population and development in its member countries. This is a potential resource which can be tapped by the Sahel Institute documentation center.

#### Research

Currently, demographic research in Senegal needs to be revitalized, while population-related research needs to be sustained. The emphasis should be on analyzing the factors and mechanisms which influence

demographic behavior. Studies in the mode of the IDEP project should be encouraged, since they represent a much-needed attempt to study the link between population dynamics and economic activities at the micro level. Socio-economic analysis of demographic data at the macro-level is also very much needed.

### Application of Data

There is also a need to train planners in the basic relationship between demography and development and in the application of demographic data to planning.

### Personnel

Although there is clearly a need in Senegal for more demographers, statisticians and programmers, given the desired scope of demographic activities, the situation is not as urgent as in other CILSS countries. The need for a planned, long-term build-up of personnel in these areas is already underway in the development courses in demography in the College de Statistique in Dakar. The public sector also needs to make salaries and working conditions competitive with the private sector.

### Training

In demographic training, the Director of the Bureau of the Census has expressed a very urgent need for scholarships for short-term (3 months) in-service training for demographers in statistics offices. This would provide them with the opportunity to acquire practical experience in data processing and analysis. Courses in computer programming and

computerized data analysis should be incorporated in the College de  
Statistique curriculum.

## UPPER VOLTA

### I. INSTITUTIONAL CAPABILITIES

#### A. Personnel

Until recently, there were four Voltaics in Ouagadougou with training in demography. One, a Ph.D. demographer trained in the U.S. and Canada, heads the Demographic Division of the Institut National de la Statistique et de la Demographie (INSD); one holds an administrative post in another ministry; one was recently recruited from the Office National de la Promotion de l'Emploi (ONPE) to work with the Economic Commission for Africa in Addis Ababa; another is currently the Minister of Planning.

There are also two French demographers working on demographic research projects at ORSTOM in Ouagadougou. Although ORSTOM has contributed greatly to the stock of demographic data in Upper Volta, the organization does not train local demographers, and there are no plans to continue the demographic research office beyond the term of the two current researchers, which ends July 1979.

While the number of Voltaics with specific skills in demography is limited, there are researchers with advanced social science training at a number of institutions (SAED, CNRST, AVV, IPD) capable of collaborating with INSD on specific projects or undertaking more qualitative population-related research. Some are working on contractual research within private research/consulting firms (SAED, IPD). Others are working with the on-going analysis of specific development projects such as those

being undertaken by the AVV or the UNESCO project to promote female literacy.

## B. Institutional Network

### 1. Government

The INSD coordinates and directs demographic data collection and research through its Demographic Division. Although civil registration vital events data are not currently being received by the INSD, a proposed reorganization of the system would assign to INSD responsibilities for coordinating and analyzing this data. It is the chief source of demographic statistics for all the government ministries.

The ONPE carried out an employment survey in 1975 and collects statistics which are related to its divisional programs (employment and migration, adult education, manpower planning).

The Ministry of Health receives epidemiological and administrative data from its clinics. The health planning unit works with these and with census data from INSD. The WHO representative used these sources in preparing a background monograph on health needs and resources in Upper Volta.

The Centre National de Recherche Scientifique Technologique (CNRST) began as a branch of the French sponsored Institut Fondamental de l'Afrique Noire (IFAN) which then became established as the government-supported Centre Voltaïque de Recherche Scientifique (CVRS). They have research units in: 1) the social sciences, 2) nature and the

environment, and 3) the physical sciences. Although they collect qualitative data for most of their research projects, the three research areas in which they have undertaken more quantitative analysis include: 1) agricultural development, 2) a socio-linguistic atlas, and 3) population distribution and settlements, the latter from a demographic and historical perspective. They worked closely with the INSD on the 1974-75 National Migration Survey, and still maintain close collaborative ties. Were INSD to establish a data bank for the country's migration data, research projects sponsored by the CNRST would be anticipated. CNRST is responsible for coordinating social science research in Upper Volta and all foreign researchers who want to do work in Upper Volta are expected to seek permission through CNRST. In coordinating national research, collaborating with other institutions on specific studies, publishing research results and maintaining a library with facilities for the in-house consultation of documents, the CNRST contributes to a climate favorable to social science research in Upper Volta.

## 2. Other

The AVV is an autonomous entity created within the Ministry of Rural Development for the development and resettlement of the Valleys of the Red and White Volta Rivers. It is supported by government funds and also by various donors including France, the Netherlands, Germany and the U.S. It comprises a unit of statistics and economics whose responsibility is to study the demographic and socio-economic characteristics of the zones from which families are recruited for settlement in the Volta Valley. It also studies families which have been resettled by recording their demographic and socio-economic attributes at

the time of resettlement and monitoring their changes over time. The unit works in cooperation with Purdue University, which also assists in computerized analysis of the data collected.

The Societe Africaine d'Etudes du Developpement (SAED) is a private research consulting firm which does studies on the socio-economic impact of development projects. In the past, they have done studies looking at the impact of development projects on women's roles and status. Although they are not presently involved in demographic studies they have the organizational structure to do population-related applied studies.

The Institut Pan-Africain du Developpement (IPD) is an independent pan-African research institute which conducts training seminars, undertakes applied research in development issues and is in touch with a network of researchers across Africa. While it has not done demographic studies in Upper Volta, the Institute could potentially do research and project analyses related to population and development.

ORSTOM is a French research institution supported by French government funds which has played an important role in the production and analysis of demographic data in Upper Volta. Although ORSTOM's research projects are typically small scale they have produced important demographic data, particularly in the area of migration. The organization has established working relations with the INSD. Future demographic activities at ORSTOM will depend upon whether or not the two demographers currently on the staff are replaced at the end of their contracts by other demographic researchers.

## C. Facilities

### 1. Computer and Computational Facilities

The INSD works with the IBM 370/125 computer system at the National Center for Information Processing (CENATRIN). This computer center is a smoothly functioning unit staffed with experienced and well-trained systems analysts and programmers. The census analysis COCENTS package is available on the system. Plans are underway to install other more sophisticated statistical packages such as SPSS.

### 2. Library, Documentation and Publication Facilities

The CNRST is responsible for the coordination of all research in Upper Volta. It has an extensive library which attempts to keep copies of all research done in or about Upper Volta and is open, with permission, to outside researchers. CNRST publishes results of its research in a quarterly bulletin, Notes et Documents Voltaiques and a professional journal, Recherche Voltaique.

The INSD maintains a documentation center for its own publications. These include methodologies, analyses and results of surveys and censuses and special studies.

The IPD and SAED both publish in-house work and maintain collections of works relevant to their research. SAED publishes a monthly review, Developpement Voltaique.

ORSTOM, Ouagadougou puts out mimeographed working papers of in-house work.

## II. DEMOGRAPHIC ACTIVITIES

### A. Training

There are no basic or in-service demographic training programs at any level in Upper Volta. Specific projects may offer in-house seminars, short-term training abroad, and on-the-job training in statistics and economics.

### B. Data Collection and Analysis

#### 1. Data Sets from Surveys and Censuses

The major sets of demographic data are presented in Table 2. Relative to other CILSS countries, Upper Volta has a good data base on the subject of migration but is seriously weak in mortality, fertility, and labor force data.

### General Population Characteristics

The first nationally representative demographic data set is from the 1975 Population Census. The 1960-61 Demographic Survey excluded Ouagadougou and Bobo-Dioulasso. Information on age, sex, occupation, education, ethnicity and geographical distribution is available from both. A measure of change in these characteristics is possible for the population excluding Ouagadougou and Bobo-Dioulasso.

### Mortality

Data on mortality are not available from the census, only from the

1960-61 Survey. Data on infant and child mortality should be available from the IFORD Infant Mortality Survey currently underway for a non-representative sub-population of Ouagadougou. Thus, there are no national data on mortality.

### Fertility

Similarly, data on fertility are sparse. They are available from the 1960-61 Survey and from the 1969 Fertility Survey. These two sources provide comparable information on age-specific birth rates and children-ever-born for certain areas of the country. The 1975 census did not include any questions on fertility.

### Migration

Measures of life-time migration on the national level can be obtained from the census and the 1974-75 National Migration Survey. The latter provides further data on migration flows, frequencies and rates of migration by origin and destination and various socio-economic factors which may influence the decision to migrate. On a more localized level, with a sample restricted to the central part of the country populated by the Mossi and Bissa, the 1973 ORSTOM Migration Study provides similar but less detailed information.

### Labor Force/Household Budget

Labor force data are available from the 1973-1975 migration surveys and include information on labor force status, occupation, employment status, sector of employment and income.

The ONPE with support from PECTA undertook a survey of the informal sector (Enquete sur le Secteur Non-Structure). The study provides information on the size, inputs and outputs of production units in the sector.

Household time-use, budget and consumption surveys have not been undertaken in Upper Volta.

## 2. Permanent Data Collection Systems

The civil registration is a potentially good source of continuous birth and death statistics. However, in its present state, the coverage of the system is very low, so that the reliability and the usefulness of its statistics are questionable.

## 3. Demographic (Population) Studies

While currently there are no demographic research projects being undertaken in Upper Volta, some studies have been done in the past. For example, studies on infant mortality and fertility, and on the determinants of fertility and family planning, have been done using the 1969 Fertility Survey data. A study of the motives of migration was done using the 1974-75 Migration Survey.

## 4. Dissemination of Data

Research is disseminated by the CNRST through its journal Recherche Voltaïque. ORSTOM publishes working notes in Ouagadougou and research articles in France in its journal Cahiers Sciences Humaines. Published

data from the 1975 census are awaiting distribution, and nine volumes of results from the 1974-75 Migration Survey were recently distributed.

Much of the research currently being done is being subsidized by external support. Contractual research is done at the SAED for donor organizations, and the AVV project receives assistance from USAID and others to support its evaluation and research operations. The UNFPA has supported the population census.

### C. Application of Demographic Data to Planning

The current Minister of Planning has training in demography and statistics. His understanding of the importance of demographic research in planning facilitates a consideration of population-related variables in national planning efforts. His participation or representation at the recent OECD/World Bank Migration Conference also led to television and press coverage.

Upper Volta recently hosted two major conferences on migration--the first to discuss the OECD/World Bank Migration Study and the second to present the results of the 1974-75 National Migration Survey and discuss its research and planning implications. The second conference was well attended by government planners who, it was hoped, will help shape future research agendas and be able to apply the results of current research to their projects and plans. Planning and policy implications were discussed among the researchers who had worked on the project and among planners from the national ministries.

#### D. Future Projects

A reorganization of the vital registration system has been proposed which would give INSD responsibility for coordinating and analyzing vital events data.

Installation of SPSS or a similar software package is planned by the INSD to facilitate social science research. The INSD hopes to have a programmer on its staff.

The UNFPA sent a basic needs assessment mission to Upper Volta in May 1979, to consider population-related projects which could be supported through the UNFPA.

Upper Volta is considering the establishment of a population policy unit within the Ministry of Planning to consider demographic data needs and to help in the design of appropriate population policies.

#### E. Priority Needs/Recommended Activities

Upper Volta lacks sufficient personnel with training in demography to analyze the demographic data currently available. Were funding available, the INSD would like to offer a training program for recent graduates combining supervised research on projects with regular in-house seminars and working group discussions. There is also a need for additional demographers on the staff.

The centralization and computerization of existing migration data is a first priority in data analysis. A second priority is the installation

of statistical analysis packages to enable the computerized analysis and synthesis of the data. A related need is the training of demographers and statisticians in the understanding and use of such packages.

As in other CILSS countries, there is a need for a more systematic preservation of methodologies, data and analyses of past studies. There is also a need to repatriate data which are currently located outside the country.

Fertility and mortality data need to be more current and representative. The reorganization and improvement of the civil registration system is a long-term priority. The extension of the IFORD Infant Mortality Survey to rural zones and secondary urban areas will yield detailed but unrepresentative data in the short-term. Participation in the World Fertility Survey Program is a good way of obtaining representative national fertility, mortality and socio-economic data at the household level.

Upper Volta sees a need to integrate population issues and information in national policies and planning. It has applied to the UNFPA for assistance in setting up a population unit in the Ministry of Planning to address this need.

## V. SUMMARY: EVOLUTION OF A STRATEGY

The foregoing description of the current status of demographic capabilities and demographic activities in the Sahel permits the identification of specific needs in the area of demography with regard to the establishment of a useful and accurate population data base, and to the successful implementation of the Sahel Demographic Research Program (SDRP) of the Sahel Institute. The goal of the SDRP, as presented by the Coordinator of the Socio-Economic/Demographic Unit, is to promote a better comprehension and appreciation of the relationships between demographic phenomena and socio-economic development in the Sahel.

### General Observations

The extent of demographic activity undertaken by the CILSS Countries has increased significantly in the last decade. Population censuses carried out under the auspices of the African Census Program, funded by the UNFPA, have generated national demographic data for the first time in some of these countries. U.N. regional training institutions, IFORD and RIPS, have provided long- and short-term basic training for African demographers. Conferences, studies and publications supported by the ECA, CODESRIA and OCAMM have directed increased attention on population issues in Africa. The impact of the prolonged drought of 1968-74 on the environment, human settlements, migration and mortality has made population dynamics and their interrelationships with socio-economic development in the Sahel a particular concern among policymakers, planners and technicians in the region.

Despite this increased focus on studying and understanding demographic phenomena, and their relationship to the development process, the following major weaknesses characterize existing population data and their application in the Sahel:

- a general lack of current data;
- inadequate exploitation, analysis and dissemination of existing data;
- inadequate preservation and centralization of existing data;
- inadequate use of available data in regional and national planning.

These deficiencies are the result of a weak Sahelian institutional capacity, that is:

- lack of appropriately trained personnel at the professional and technical levels
- lack of institutional networks, facilities and equipment
- lack of adequate financial resources for basic and special operations
- lack of coordination and collaboration at regional and national levels

They constitute the major constraints to the development and maintenance of a Sahelian demographic capability and thus must constitute the target of a multifaceted strategy to mitigate these problems over the long term.

### Personnel

The poverty of the CILSS countries and the generally low level of education of their population are two factors which impinge directly on the problem of personnel. The key issues are three: first, an inadequate pool of candidates who could be recruited for training in demography,

economics, sociology, statistics, geography and related disciplines in the face of the demand for trained personnel in engineering, agronomy and the medical sciences. Secondly, while training opportunities for Sahelians are not lacking, students from some of the CILSS countries are at a disadvantage where selection is on a competitive basis for all African students. Thirdly, once trained, they cannot be attracted to and maintained in service in the public sector, given the relatively low salary levels and poor working conditions compared to the private sector and to international agencies. The lack of attention accorded to demography and population, at least relative to other development issues, tends to exacerbate the problems affecting recruitment into these professions.

Thus, although the shortage of trained manpower constitutes a major constraint to strengthening a demographic capability, the options for interventions in the training area will only partially solve the problem in the immediate, and in some countries, the medium-term future. The inventory suggests that an increase in the supply of training opportunities and scholarship support are not what is needed by Sahelians, except perhaps in the case of technical support personnel, such as statistical analysts/assistants and computer programmers. The fact is that the number of training slots at the post-graduate levels may exceed the demand, mainly because of the small pool of eligible and interested candidates applying for such training. Rather, the need is for more extensive practical training within existing programs, a more interdisciplinary and applied approach in demography curricula, and for promotion of the importance of demography and population studies as a discipline.

## National Institutional Networks/Physical and Financial Resources

In addition to the problems of personnel, there are deficiencies related to the existing institutional infrastructure in which those who are trained are or will be working. Generally speaking, in most if not all countries of the region, the potential exists for developing formal working relationships between the different institutions involved in demographic activities. However, it is the responsibility of each national government to create a mechanism for realizing this potential and thus helping to ensure the consideration of population factors in policy formulation and socio-economic planning. This means stimulating an awareness of the importance of such activities on the part of key decision-makers and political officials.

Although several universities and specialized research institutions are involved in certain aspects of population research, their resources and the results of their studies are not utilized and disseminated for the purpose of national planning. In the francophone system, demographic research is primarily the responsibility of government statistical offices rather than universities. Furthermore, in the francophone university system, pressures to publish research results do not exist. If existing and future resources are to be maximized, it will be critical to bring these institutions into the mainstream of demographic research and its utilization.

Physical facilities and financial resources vary widely across the region. In some cases, basic equipment, such as calculators, is unavailable. Where computer facilities exist, they are often not used to

capacity. The latter is due mainly to the lack of appropriate software packages and the lack of trained personnel. Operating budgets are small and often hinder the execution of routine activities, including basic data collection. A shortage of office materials is often compounded by the lack of transportation and the lack of good communication systems. Documentation centers exist, but often their holdings are limited to in-house publications. Most institutions do maintain some type of publication, although translations are not provided. All of these factors in the work place tend to discourage well-trained personnel.

There is definitely a need for increased national commitment to demographic activities and thus increased budget allocations to provide the basic resources an institution needs to support its personnel. If qualified cadres are to be attracted and retained, current conditions of employment must be improved. An increased commitment from national governments should also increase the flow of external resources needed for special studies, analysis/reanalysis of data, pilot projects, and decennial censuses.

#### Coordination and Cooperation at the Regional and National Levels

One of the findings of this inventory was that while demographic data are not abundant in the Sahel, many data have either not been analyzed, or have not been fully analyzed. Moreover, the physical data often risk being lost as cards deteriorate and tapes are misplaced; descriptions of methodologies, questionnaires and coding instructions sometimes disappear; copies of final reports are distributed and not republished; and the original data are often taken out of the region to

research institutions in Paris, London, Lisbon, or the United States. Not only do the data need to be repatriated and the existence of data sets documented, but they need to be systematically preserved at a central location, such as the Sahel Institute, in order to facilitate further analysis and comparative research.

Moreover, within the region there is a need not only to analyze and more fully exploit national data sets, but to reanalyze them from a regional perspective. Migration trends do not stop at national borders, and there is considerable interest in the region to use existing national data sets as a base for research within regional zones of migration. The Sahel Institute in Bamako, with the only regional demographic research unit in the Sahel, offers the possibility of coordinating regional research projects and aiding in their implementation, both by serving as a documentation center for the data, and by making computer facilities available to researchers from the participating countries.

There is also a need to expand national and regional demographic data bases. A regional coordinating unit can promote the use of the same sampling plans and questionnaires, where appropriate, in the collection of new demographic data. This will improve the comparability of national data, and thus facilitate the establishment of a regional data base. Efforts in this direction have begun with the IFORD Infant Mortality Survey and the participation of Senegal and, possibly, Mauritania in the World Fertility Survey. However, similar endeavors have yet to be initiated in other areas.

In terms of planning in the region, the Sahelian countries have committed themselves to work through CILSS and the Sahel Institute to

bring their collective resources to bear on the problems which confront them. Technical cooperation among the countries in population matters, including information exchange and joint studies of significant demographic phenomena affecting more than a single country, need to be encouraged and facilitated. To promote a continued focus on development in the Sahel as a whole, it is important to convince policy-makers and planners in all of the countries of the importance of good demographic data, of the desirability of defining population policies and of the implications of the links between population and development.

#### The Sahel Demographic Research Program

The Sahel Demographic Research Program launched by the Sahel Institute is designed specifically to remove the constraints and respond to the needs discussed above. It aims to develop a Sahelian demographic capability in order to improve the demographic data base and to make possible a process of development planning based on more accurate knowledge of the demographic phenomena of the region.

The objectives of the program, extracted from official Institute documents, are expressed here in terms of the three components of demographic capability:

- To train at all levels a cadre of personnel capable of identifying, collecting, analyzing and utilizing demographic data needed for long-term development planning from both national and Sahel regional perspectives;
- To systematize/institutionalize the collection, analysis, diffusion and utilization of these data by Sahelian demographers, researchers and planners;
- To develop appropriate mechanisms for regional coordination and collaboration in the area of demography.

To accomplish these objectives, and thereby eliminate the major obstacles to the establishment of the required capability, the Institute's program can be viewed as being based on a strategy which consists of essentially five major components:

- Training
- Establishment of a centralized, computerized data bank to promote and facilitate the analysis and reanalysis of data
- Expansion of the existing demographic data base
- Promotion of the application of demographic data in policy formulation planning, project design and evaluation and policy-relevant research
- Publication, translation and dissemination of research and material on population

At the time of this report, a program development process was already underway at the Institute. Building on the results of the inventory and the interest in demography generated by the Institute over the past several months, the future program has the potential to make a significant contribution to the state of demography in the Sahel.

## TABLES

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Table 1

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Cape Verde Islands	Direction de la Statistique	Population Census Exploitation of Vital Registration Data	X					X	
	Ministere de la Sante et des Affaires Sociales: Direction des Affaires Sociales	Socioeconomic information collected for use in social planning; Training			X				X
	Ministere de la Sante et des Affaires Sociales: Direction Generale de la Sante	Mortality, morbidity data collected				X			
	Ministere du Travail: Direction Generale du Travail et de la Fonction Publique	ILO employment survey; Registers employment information							
	Ministere du Developpement Rurale: Direction Generale de la Conservation et de l'Aménagement des Ressources Humaines	Socioeconomic survey and Agricultural Census		X				X	X
The Gambia	Central Statistics Bureau	Population Censuses Household Budget Survey Agricultural Sample Survey Urban Labor Force Survey National Migration Survey	X	X		X			X

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
The Gambia (cont'd)	Ministry of Agriculture: Planning, Programming, Monitoring Unit	Collects Agriculture Data for Project Planning, Agricultural Surveys		X		X			
	Ministry of Economic Planning & Industrial Development	Compiles, Projects, Uses Population Data for Policy Making, Planning			X	X			X
	Ministry of Education	Collects Educational Statistics							X
	Ministry of Health	Collects Health Statistics, Vital Registration							
	Gambia Family Planning Association	Collects Data to Monitor Projects			X				
	Medical Research Council	Conducts Medical Research Collects Health, Nutrition Data Conducts Longitudinal Demographic Health Study of 4 Villages	X						X
	Ministry of Agricultural: Rural Development Project	Socioeconomic Demographic Data Collection and Research to Plan; Monitor, Evaluate Large Scale Development Project			X	X			X
Mali	Direction Nationale de la Statistique et de l'Informatique: Bureau Central du Recensement	Demographic Surveys Population Census	X	X			X		

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Mali (cont'd)	Ministere du Plan: Division de la Planification des Ressources Humaines	Employment Survey; Education, Manpower, Statistics Collected	X	X			X		X
	Direction Nationale de la Statistique et de l'Informatique: Division des Enquetes	Agricultural, Demographic Surveys		X			X	X	X
	Ministere de la Sante Publique: Section des Statistiques Sanitaires	Collects health statistics on morbidity, mortality, fertility		X				X	X
	Ministere des Travaux Publiques: Atelier d'Urbanisme	Household Surveys. Studies of Urban Services, Migration to Bamako	X	X			X		X
	L'Office National de la Main d'Oeuvre: Bureau de la Statistique de la Main d'Oeuvre	Study of Female Labor Force (ILO), Salaried Employees				X	X		X
	Ministere d'Education Nationale: Direction de la Planification et d'Equipement Scolaire	School attendance data collected; Projections of school age populations for Planning Education Services Needs	X	X			X	X	X
	Association Malienne pour la Protection et la Promotion de la Famille	Statistics on Maternal and Infant Health			X			X	X

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Mauritania	Institut Mauritanien de Recherche Scientifique (Département de la Sociologie)	Qualitative Research in Social History, Archeology, Culture, Language						X	X
	Ministere du Plan: Direction des Etudes et de la Programmation	Economic Statistics Collected; Exploitation of Population Data for Sectoral Planning				X	X		X
	Ministere du Developpement Rural et des Amenagements Division de la Statistique	Agricultural Surveys		X					
	Ministere du Plan. Direction de la Statistique. Bureau Central de Recensement de la Population	Population Censuses Nomadic Survey Demographic Surveys	X	X		X	X	X	
	Ministere de l'Enseignement: Direction de la Planification et de la Cooperation	Collection of Education Statistics for Use in Sectoral Planning							X
	Societe Nationale pour le Developpement Rural (SONADER)	Socio-Economic Research as Part of Monitoring & Evaluation of Development Projects				X		X	X
Niger	Ministere du Plan: Service de la Demographie	Demographic Studies (fertility, migration, mortality, nomads) Population Census	X	X			X	X	

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Niger (cont'd)	Departement de Geographie Universite de Niamey	Doctoral Thesis on Population Settlements around Niamey Teaching & Research on Human Geography			X				X
	Institut des Recherches en Sciences Humaines (IRSH)	Collaborated with 1969 Fertility Study; Social Science Research						X	X
	Direction de la Sante: Direction de l'Infra- structure Sanitaire	Health Statistics		X			X		
	Ministere du Developpement Rurale: Direction de l'Agriculture	Agricultural Statistics Family Consumption Survey Time-Budget Survey		X	X	X		X	X
	Ministere du Plan: Direction des Ressources Humaines	Projects Manpower Needs		X		X			X
Ministere d'Education Nationale: Service Classification Scolaire	Surveys of Schools for Educational Planning		X			X		X	
Senegal	Bureau National de la Sta- tistique: Direction de la Statistique, Division des Enquetes	Population Census Demographic Surveys	X	X			X	X	X

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Senegal (cont'd)	Societe Nationale d'Etudes du Developpement (SONED)	Studies of Development Projects Census of Economic Activities		X			X	X	X
	Office de la Recherche Scientifique et Technique d'Outre-Mer (ORSTOM), Departement des Sciences Humaines	Demographic Research; Surveys & Observation Units in Rural Areas			X			X	X
	Institut Fondamental d'Afrique Noir (IFAN)	Socio-Economic Research Migration Study			X		X	X	X
	Organisation de la Mise en Valeur du Fleuve Senegal (OMVS)	Collects data on Socio-Economic Effects of Development Project			X		X		
	Centre de Recherche Economique Appliquee (CREA) (Universite de Dakar)	Research on Internal Migration Supervision of Doctoral Theses		X	X		X	X	X
	Departement de Geographie Universite de Dakar	Offers Courses in Population Distribution and Movements Population Related Research			X	X	X	X	X
	Council for the Development of Economic & Social Research in Africa (CODESRIA)	Coordination of Research (Pan-African) Working Group on Population						X	X
	Institut Developpement Economique et Planification (IDEP)	Teaching & Applied Economic Research. Case Studies of Population & Development			X	X		X	X

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library Doc. Center	Regular Publications
Senegal (cont'd)	Ministere de la Fonction Publique de l'Emploi et du Travail: Direction de l'Emploi	Employment Survey. Employment Migration Survey		X			X		
	Ministere du Plan: Direction de la Planification, Division des Ressources Humaines	Employment Studies & Planning				X			X
	Ministere de l'Urbanisme: Direction de l'Amenagement du Territoire	Demographic Survey of Saint-Louis Planning for the Development of Urban Areas				X	X	X	
	Environnement du Developpement du Tiers-Monde (ENDA)				X			X	X
	Organisme de Recherche sur l'Alimentation et la Nutrition en Afrique (ORANA)	Nutrition Survey, Survey of Food Consumption with Demographic Census Attached		X			X	X	X
	College de Statistique, Ecole Nationale d'Economie Appliquee (ENEA)	Courses in Applied Economics Trains Statisticians Data Collection by Students		X	X			X	X
Upper Volta	ORSTOM	Demographic Studies & Data Collection	X				X		X
	Institut National de la Statistique et de la Demographie (INSD)	Coordination & Collection of Demographic Statistics Population Census, Migration Survey	X	X			X	X	X

Table 1 (cont'd)

## SUMMARY TABLE OF INSTITUTIONS

Country	Institution	Activities	Demographers	Statisticians	In-Service Training	Scholarships	Computer Access	Library	Doc. Center	Regular Publications
Upper Volta (cont'd)	Societe Africaine d'Etudes de Developpement (SAED)	Research & Evaluation on Socio-Economic Impact of Development Projects			X	X		X		X
	Centre National de Recherche Scientifique et Technologique (Departement de Sciences Sociales)	Coordination of National Research Activities; Socio-Economic and Agricultural Studies, Migration Survey						X		X
	Autorite des Amenagements des Valles des Voltas: Service de la Statistique	Collects & Monitors Demographic & Socio-Economic Data from Settlement Villages	X		X		X	X		X
	Office National de Promotion de l'Emploi	Employment Studies; Registers Labor Force Information			X		X			X
	Ministere des Affaires Sociales et de la Condition Feminine	Plans Social Assistance Programs								
	Ministere de la Sante Publique	Collects Epidemiological Data								X

Country	Name of Data Set	Institution in Charge	Instrument of Data Collection	Physical Form of Data	Location of Data	Stage of Processing/Analysis/Application
Cape Verde Islands	Naissances, Morts, Res, Deces et Mariage, 1950	Ministere de la Justice et Exploitation Statistique (MJES)	Civil Registration Registers	Registers	MIES	Tabulations Published
	Recensement General de Population, 1960	Servicio de Administracao Civil Seccio de Estatistica (SAC/SEST)	Exhaustive Population Census	Coded Questionnaire	Lisbon	Tabulations Published
	X <sup>e</sup> Recensement General de la Population et 1 <sup>o</sup> Recensement de l'Habitat, 1970	Direccao Geral de Estatistica (DGE)	Exhaustive Population and Housing Census	Coded Questionnaire	DGE	Manual Processing of Data Underway
	Enquete sur l'Emploi et le Chomage, 1978	Programme des Emplois et Competences Techniques pour l'Afrique (PECTA), International Labor Office (ILO)	Single Round Sample Survey of Praia and Mindelo	?	ILO, Geneva	Report Published
	Recensemento Agricola, 1978-79	Ministerio de Desenvolviments Rural (MDR)	Exhaustive Agricultural Survey	Coded Questionnaire	MDR	Data Coded
The Gambia	Keneba Health Monitoring Project, 1953-Present	Medical Research Council, Banjul (MRC)	Exhaustive Continuous Monitoring of Villages in the Keneba Area	Coded Questionnaire	London	Some Tabulations and Analyses Published, Coding of Data Continued
	Population Census of 1963	Central Statistics Division (CSD)	Exhaustive Population Census	Coded Questionnaire	Destroyed	Tabulations Published
	Household Budget Survey - Banjul Area, 1968-69	Central Statistics Division (CSD)	14% Sample Survey of the Population of Banjul Registered for Taxation	Coded Questionnaire	CSD	Tabulations Published
	Land Resources Study - Socio-economic Studies, 1972-74	Rural Project Division (RPD)	Sample Survey of 12 Villages along the Gambia River	Coded Questionnaire	RPD	Final Report Published
	Population Census 1973	Central Statistics Division (CSD)	Exhaustive Population Census	Magnetic Tape	ICC, WHO Geneva	Tabulations Published Results Evaluated
	Gambian Rural Health Survey, 1973	University of California at Santa Cruz (UCSC)	Single Round Retrospective Survey of 15% of the Rural Population	?	?	Tabulations Published
	National Sample Survey of Agriculture Pilot Study, 1973-74	Central Statistics Division (CSD)	Sample Survey of the Rural Population-Dual Record System	Coded Questionnaire	CSD	Tabulations Published
	Urban Labor Force Survey, 1974-75	Central Statistics Division (CSD)	Stratified Sample Survey of the Urban Population	Coded Questionnaire	CSD	Report Published
	National Migration Survey, 1978	Central Statistics Division (CSD)	Single Round 1% Sample Survey of the Total Population	Magnetic Tape	CSD, Univ. of Maryland-Baltimore, Univ. of Pennsylvania	Processing of Data Underway

				of Data	Data	Analysis/Application
Mali	Enquete Demographique, 1960-61	Service de la Statistique du Mali And INSEE-Cooperation, France	Sample Survey of Selected Regions of Mali	?	?	Tabulations Published Data Evaluated
	Enquete Agricole Permanente (Annuelle), 1970-75	Direction Nationale de la Statis- tique et de l'Informatique (DNSI)	Stratified Sample Survey of Mali <u>Except</u> the Non- Agricultural Zone in the 6th Region	Coded Questionnaire	DNSI	Tabulations Published
	Recensement General de la Popu- lation du Mali, 1976	Bureau Central du Recensement (BCR)	Exhaustive Population Census	Magnetic Tape	BCR	Provisional Tabulations Computerized Processing Continued
	Enquete Rehabilitation de Bamako, 1978	L'Atelier d'Urbanisme of la Direction Nationale de l'Amenagement Foncier de l'Urbanisme et de la Construction	Sample Survey of Neighbor- hoods in Bamako	Coded Questionnaire	L'Atelier d'Urbanisme	Provisional Tabulations Manual Processing of Data Underway
	Enquete Migration de Bamako, 1978	Atelier d'Urbanisme	Stratified Sample Survey of all Neighborhoods in Bamako	Coded Questionnaire	L'Atelier d'Urbanisme	Manual Processing of Data
Mauritania	Enquete Demographique, 1965	Ministere du Plan, SEDES-Paris, INSEE-Cooperation	Retrospective Sample Survey of the Total Population	Computer Cards Magnetic Tape	Destroyed	Tabulations & Analyses Published
	Recensement General de la Population, 1976	Bureau Central du Recensement de la Population (BCRP)	Exhaustive Population Census of the Total Sedentary Population	Magnetic Tape	BCRP	Provisional Tabulations Further Analysis in Progress
	Enquete Nomade, Recensement National de la Population de 1976	BCRP	Retrospective Single Round Sample Survey of the Nomadic Population	Magnetic Tape	BCRP	Provisional Tabulations Further Analysis in Progress
	Recensement General de la Population: Dossier de Village ou Quartier, 1976	BCRP	Register of All Villages Enumerated in the Census	Magnetic Tape	BCRP	Provisional Tables (Unpublished). Further Analysis in Progress
	Esquisse sur la Situation de l'Emploi en Mauritanie: Situation Presente et Perspective, 1977	ILO	?	?	ILO, Geneva	Report Published
Niger	Etude Demographique du Niger, 1954-60	INSEE-Cooperation	Single Round Retrospective Sample Survey of the Sedentary Population	?	INSEE-Coopera- tion	Tabulations Published Analysis & Evaluation of Data
	Recensement de Niamey, 1960	?	Population Census	?	?	Tabulations, Analysis
	Les Budgets Familiaux Africains a Niamey, 1961-62	Service de Statistique, (DST), INSEE-Cooperation	10% Sample Survey of Selected Neighborhoods of Niamey	Coded Questionnaire	?	Tabulations, Analysis Published
	Etude Demographique et Econo- mique au Milieu Nomade, 1963	INSEE-Cooperation	Sample Survey of the Nomadic Population of Niger	?	?	Tabulations, Analysis and Research Published
	Recensement de Niamey, 1966	?	Population Census	?	?	Tabulations, Analysis
	Fertility in Tudu, 1968, 1971, 1975	Polph Faulkingham, University of Massachusetts	3 Round Survey of the Village of Tudu	Computer Cards or Tape	Univ. of Massachusetts	Tabulations, Analysis and Research Published

Niger (cont'd)	Famille au Niger, 1970-71		10% Sample Survey of Selected Regions			Analyses Published
	Recensement General, 1977	Bureau Central du Recensement (BCR)	Exhaustive Population Census	Coded Questionnaire	BCR	Provisional Tabulations Computerized Processing of Data
Senegal	Enquete Demographique au Senegal, 1960-61	Direction de la Statistique (DST), INSEE-Cooperation	Single Round Retrospective Sample Survey of the Total Population	?	?	Tabulation, and Evaluation Analyses Published Research Published
	Etude Demographique dans la Region du Sine Saloum, Etat Civil et Observations Demographiques, 1963-65	ORSTOM, Dakar	Annual Census of 2 Selected Areas in the Region-Niakhar and Paos-Koto	Coded Cards Tape	ORSTOM, Paris, ORSTOM, Dakar INED, Paris	Tabulations, Analyses, Evaluation and Research Published
	Enquete de la Fecondite du Senegal, 1968-69	ORSTOM, Dakar	3 Round Retrospective Sample Survey of 5 Selected Areas of Senegal	Coded Cards	ORSTOM, Paris	Tabulations, Analysis, Evaluation and Research Published
	Etude Demographique de St. Louis, 1969	Direction de l'Aménagement du Territoire	Single Round 15% Random Sample Survey of the City of St. Louis	?	?	Tabulations Published
	Enquete Demographique Nationale, 1970-71	Direction Nationale de la Statistique/ Division Demographie et des Enquetes (DST/DDE)	5% Sample 3-Round Retrospective Survey of the Total Population	Magnetic Tape	Lost	Tabulations, Analysis, Evaluations and Research Published Analysis and Research still in Progress
	Etude de la Fecondite a Dakar, 1972	ORSTOM, Dakar, DST/DDE	Single Round Sample Survey of Women in Dakar Sampled in the 1970-71 Demographic Survey	Computer Cards Tape	ORSTOM, Dakar ORSTOM, Paris	Tabulations, Analysis and Research Published
	Enquete Experimentale: Budget et Consommation des Menages, 1973-75	DST/DDE	Non-Representative Sample of the Total Population Retrospective and Multi-Round	NA	NA	Survey Not Completed
	Recensement General de la Population d'Avril, 1976	Direction de la Statistique, Bureau National du Recensement (BNR)	Exhaustive Population Census of the Country	Magnetic Tape	BNR	Regional Tabulation Being Published. National Results Not Yet Tabulated
Upper Volta	Enquete Demographique par Sondage, 1960-61	Institut National de la Statistique et de la Demographie (INSD), INSEE-Cooperation	Single Round Retrospective Sample Survey of the Total Population Except Bob-Dioulasso and Ouagadougou	Computer Cards	Destroyed	Tabulations, Analyses Evaluation Published
	Recensement d'Ouagadougou, 1961-62	Service de la Statistique; IFAN	Retrospective Exhaustive Census of the City	?	?	Tabulations Published
	Enquete par Sondage sur la Ville d'Ouagadougou, 1968	INSD	Less Than 50% Sample of the City Concentrated Mainly in the Central City Area	?	?	Tabulations Published

Country	Name of Data Set	Institution in Charge	Instrument of Data Collection	Physical Form of Data	Location of Data	Stage of Processing/Analysis/Application
Upper Volta (cont'd)	Enquete sur la Fecondite en Haute-Volta, 1969	Cornell University (Ian Pool)	Retrospective Sample Survey of Bobo-Dioulasso and Ouagadougou	?	?	Tabulations, Analyses, Evaluation and Research Published
	Enquete sur les Mouvements de Population a Partir du Pays Mossi, 1972-73	ORSTOM, Ouagadougou	Multi-Round 50% Sample Survey of the Mossi and Bissa Regions	Cards & Tape	ORSTOM, Paris	Tabulations, Analyses, Evaluation and Research Published
	Enquete Nationale sur les Mouvements Migratoires en Haute-Volta, 1974-75	INSD; Centre National des Recherches Scientifiques et Techniques (CNKST); University of Montreal	Single Round Retrospective Sample Survey of the Total Population	Cards & Tape	INSD, CNPST, Univ. of Montreal	Tabulations, Analyses, Evaluation and Research Published
	Recensement National de la Population, 1975	INSD	Exhaustive Population Census of the Total Population	Magnetic Tape	CENATRIN, Ouagadougou	Tabulations Published
	Enquete Demographique par Sources Complementaires dans Pays Gouroum, 1975	ORSTOM, Ouagadougou	Sample Survey and Analyses of Parish Registers	Registers	?	Tabulations Published
	Enquete Post-Censitaire, 1976	INSD	Single Round Non Retrospective Sample Survey of the Total Population	Cards, Tape	CENATRIN, Ouagadougou	Tabulations Published
	Etude des Migrants a la Frontiere Ivoire-Voltaique, 1976	ORSTOM, Ouagadougou	Sample Survey of all Travellers Crossing the Frontier in a Given Period of Time	NA	NA	Survey in Progress
	Enquete Renouvelee au Pays Lobi-Dogara, 1976	ORSTOM, Ouagadougou	20% Sample Survey, Multi-Round	?	ORSTOM, Paris	Tabulations Published Evaluation of Data
	Recensement Demographique des Villages d'Accueil de l'Autorite des Vallees des Voltas (AVV), 1977 - continuous	Service Statistique et Economique (SSE) of the AVV; Purdue University	Continuing Exhaustive Census of Resettled Households in the Volta Valley	Cards	SSE, Purdue University	Some Tables Published Survey Still Continuing
	Enquete par Sources Complementaires, 1976	ORSTOM, Ouagadougou	Sample Survey and Analysis of Parish Registers	Coded Questionnaire	ORSTOM, Paris	Data Processing in Progress
	Enquete des Sources Complementaires en Pays Mossi-Kougoussi, Tikare, 1978	ORSTOM, Ouagadougou	Retrospective Exhaustive Survey of a Sub-Population under Observation in the Region and Analysis of Parish Registers	Tape Expected July 1979	ORSTOM, Paris Expected in July 1979	Coding of Results in Progress
Enquete Demographique de Faisabilite - OURSI, 1978	ORSTOM, Ouagadougou	Single Round Retrospective Survey	Non-Computerized Form Expected	NA	Survey in Progress	

## APPENDICES

APPENDIX 1

SCHEDULE OF INVENTORY VISITS

BY SAHEL INSTITUTE/FAMILY HEALTH CARE, INC./POPULATION COUNCIL

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SCHEDULE OF INVENTORY VISITS

BY SAHEL INSTITUTE/FAMILY HEALTH CARE, INC./POPULATION COUNCIL

January 17-26	UPPER VOLTA	Jean-Marie Toko Sahel Institute  Ann Orr Family Health Care, Inc.  Sally Fox Population Council
January 29- February 2	MALI	Jean-Marie Toko Sahel Institute  Ann Orr Family Health Care, Inc.  Sally Fox Population Council
February 7-21	SENEGAL	Jean-Marie Toko Sahel Institute  Lucie Colvin Population Council  Ann Orr Family Health Care, Inc.
February 23- March 2	UPPER VOLTA	Jean-Marie Toko Sahel Institute  Sally Fox Population Council  Victor Piche Population Council  Joel Gregory Population Council
March 1-8	CAPE VERDE ISLANDS	Landing Savane Sahel Institute

		Georges Sabagh Population Council
		Kathleen Parker Family Health Care, Inc.
March 5-13	MAURITANIA	Jean-Marie Toko Sahel Institute
		Georges Sabagh Population Council
		Sally Fox Population Council
		Kathleen Parker Family Health Care, Inc.
March 11-20	THE GAMBIA	Jean-Marie Toko Sahel Institute
		Lucie Colvin Population Council
		Sally Fox Population Council
March 21-28	NIGER	Jean-Marie Toko Sahel Institute
		Remi Clignet Population Council
		Ann Orr Family Health Care, Inc.

APPENDIX 2

LIST OF INSTITUTIONS SURVEYED AND PERSONS INTERVIEWED

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LIST OF INSTITUTIONS SURVEYED AND PERSONS INTERVIEWED

CAPE VERDE ISLANDS

State Secretariat of Cooperation and Planning (Secretaria de Estado da Cooperacao e Planeamento)

Mr. Virgilio Fernandez, Director of Planning and Director of Statistics  
Miss Maria Luiz Rocha-Pinto, Department of Planning  
Mr. Norberta Alvis, Assistant Director of Statistics and  
Head of Demographic Section  
Mr. Bernard Tissier, Statistics Office  
Mr. Custodio Conim, Census Program Advisor, UNFPA  
Mrs. Aldora Bastos-Fortes -- person in charge of 1970 census; now  
retired but working part-time with  
Mr. Conim

Ministry of Health and Social Affairs (Ministerio de Saude e Assuntos Sociais)

Dr. J. Lisboa-Ramos, Secretary-General  
Mrs. Alestina Tolentino, Director of Social Affairs

Ministry of Education (Ministerio de Educacao Nacional)

Mr. Oscar Ribiero  
Mrs. Ribiero

Ministry of Rural Development (Ministerio do Desenvolvimento Rural)

Miss Rosaria Silva, Office of Rural Surveys  
Mr. Gil de Mirbeck, Office of Rural Surveys

Ministry of Labor (Ministerio de Trabalho)

Mr. Arthur Tauares

OTHER CONTACTS

Ministry of Rural Development (Ministerio do Desenvolvimento Rural)

Mr. Antonio Pires, CILSS Correspondent

American Embassy

Mr. H. McGowan, Charge d'Affaires

USAID/Praia

Mr. Hugh Smith, Program Officer  
Mr. Merrill Asay, Agricultural Project Manager

UNDP (PNUD)

Miss Ida Pacquin, Resident Representative

THE GAMBIA

Ministry of Economic Planning and Industrial Development (MEPID)

Dr. J. A. Langley, Permanent Secretary  
Mr. K Rudd, Manpower Economist

Central Statistics Bureau (MEPID)

Mr. Moulie Gibril, Director

Ministry of Agriculture

Mr. George Lowe, Head, Rural Development Project (RDP)  
Dr. John Dalton, Planning, Programming and Monitoring Unit, RDP

Ministry of Education

Mr. C. Cole, Acting Director

Ministry of Health

Dr. E. Samba, Director of Medical Services  
Mrs. Bertha M'Boge, Senior Nursing Officer  
Mr. Karafa Manneh, Statistics Training Candidate  
Mr. Walker, WHO Advisor

Gambian Family Planning Association

Mr. J. Taylor-Thomas, Executive Secretary

Medical Research Council

Dr. Ian McGregor, Director  
Dr. A. Adjukeiwizc, Deputy Director

OTHER CONTACTS

CILSS

Dr. Wally N'Dow, Special Assistant to the President for CILSS Affairs

UNDP

Mr. James Collbran, Program Officer

USAID/Banjul

Mr. Douglas Broome, AID Affairs Officer

OTHER CONTACTS

Ministry of Rural Development (Ministerio do Desenvolvimento Rural)

Mr. Antonio Pires, CILSS Correspondent

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## APPENDIX 3

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N.B. The citations in this bibliography include most of the socio-economic and demographic publications identified during the inventory in each of the seven countries, as well as other significant studies or basic background documents in the area of demography in the Sahel. For additional references, the reader is referred to the institutions mentioned.

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APPENDIX 4  
SELECTED TRAINING INSTITUTIONS  
WITH PROGRAMS IN DEMOGRAPHY AND RELATED  
SOCIAL SCIENCES OPEN TO SAHELANS

SELECTED TRAINING INSTITUTIONS WITH  
PROGRAMS IN DEMOGRAPHY AND RELATED SOCIAL SCIENCES OPEN TO SAHELIANS\*

Location	Institution	Recruitment Level	Area(s) of Training	Length of Training	Degree/Diploma	Other Relevant Information
SAHEL	CESD, Nouakchott (Centre d'Etudes Scientifiques et Demographiques)		Not yet established			Funding was requested of UNFPA during needs assessment mission in population assistance, May 1978
	ENEA, Dakar (Ecole Nationale d'Economie Appliquee) College de Statistique B.P. 5084, Dakar	Brevet d'Etudes du Premier Cycle (BEPC)		2 years	Agent Technique de la Statistique (ATS)	Dir.: Cheikh Tidiane SY Also organizes short-term training in other countries
		Baccalaureat (BAC)	Economics; Rural Development; Statistics; Geography	3 years	Ingénieur des Travaux Statistiques (ITS)	
	IDEP, Dakar (Institut Africain de Developpement Economique et de Planification) B.P. 3186, Dakar	Licence	Techniques and Problems of Development Planning	2 years		Dir.: Samir Anim
	IFAN, Dakar (Institut Fondamental d'Afrique Noire) R.P. 206, Dakar	University of Dakar students from various departments	Interdisciplinary studies in the social sciences	6mos.-2yrs		Dir.: Amar Samb The Institute is part of the University of Dakar
	INSD, Ouagadougou (Institut National de la Statistique et de la Demographie)		No training offered at present			Dir.: Dr. Sidiki Coulibaly
	IPD, Ouagadougou & Douala (Institut Pan-Africain de Developpement)	Baccalaureat or equivalent and competitive examination	Socio-economic problems of development	2 years (Douala) Short-course (Ouagadougou)	Diploma	Dir.: Ibrahim Diallo (Ouagadougou)
	UNESCO Regional Center, Dakar		Educational statistics; Educational planning	Short courses		
	Universite de Dakar, Departement de Geographie Humaine	Baccalaureat				

\* Although information on some of the institutions is incomplete, it is hoped that this summary table will serve as a useful reference.

## APPENDIX 4 (continued)

Location	Institution	Recruitment Level	Area(s) of Training	Length of Training	Degree/Diploma	Other Relevant Information
WEST AFRICA	Ecole de la Statistique, Abidjan	BEPC	Demographic analysis (census taking, migration, population change)	2 years	Agent Technique de la Statistique (ATS)	
		Baccalaureat		3 years	Ingenieur des Travaux Statistiques (ITS)	
	IFORD, Yaounde (Institut de Formation et de Recherche Demographique) B.P. 1556, Yaounde	Licence en Geographie, Sociologie, Science Economique, Mathematiques	Mortality Fertility Population Policy Migration Urbanization	1 year	Certificate in population studies Masters degree	
				2 years		
		OR Ingenieur des Travaux Statistiques OR Equivalent plus competitive examination				
ISPEA, Yaounde (Institut de Statistique, de la Planification, et de l'Economie Appliquee)	BEPC		2 years	Agent Technique de la Statistique (ATS) Ingenieur des Travaux Statistiques (ITS)		
	Baccalaureat		3 years			
RIFS, Accra (Regional Institute for Population Studies)	Senior Statistician OR University degree OR Equivalent plus competitive examination	Mortality Fertility Population Policy Migration Urbanization	1 year	Certificate in Population Studies Masters degree	Dir.: Chukuka Okonjo  Sponsored by U.N. and Government of Ghana	
			2 years			
NORTH AFRICA	Cairo Demographic Center, 6 Sharia Willcocks Zamalek, Cairo, UAR		Demographic aspects of urbanization & internal migration	1 year + 1 year + 1 year	General Diploma Special Diploma Masters Degree	Dir: S. Huzayyin English + Arabic
	INSEA, Rabat (Institut National de la Statistique et de l'Economie Appliquee) B.P. 406, Rabat	BEPC	Demography	2 years	Agent Technique de la Statistique (ATS) Ingenieur des Travaux Statistiques (ITS)	
		BAC		3 years		

Location	Institution	Recruitment Level	Area(s) of Training	Length of Training	Degree/ Diploma	Other Relevant Information
EUROPE	CEDOR, Bucharest (Centre Demographique de l'ONU en Roumanie) B.P. 550, Bucharest 1	B.A. Economics, Sociology, Med. Sciences, Geography, Statistics, Mathematics, or equivalent with experience	Population studies	1 year: population & development + 1 year	Certificate  Diploma	<u>Dir.:</u> Ferdinand Rath
	Centre for Population Studies London School of Hygiene & Tropical Medicine Kappel St., London WC1E 7HT, England	University degree: Medicine science, Social science	Population Science: principles & techniques of demography, statistics & epidemiology	1 year  9 months	M.Sc., Medical Demography  Diploma - "	Professor W. Brass
	IDP, Paris (Institut Demographique de 90 Rue de Tolbiac Paris) 75013 Paris	Licence ou Diplome francais ou equivalent	Demography	1 year  + 1 year  + 1 year	D.D.G. (Diplome de Demographie Generale) D.E.D. (Diplome d'Expert Demographe) D.E.S.S. (Diplome d'Etudes Superieures Specialisees en Demographie) D.E.A. (Diplome d'Etudes approfondies en Demographie) Doctorat du 3e Cycle C.A.D. (Certificat d'Aptitude a la Demographie)	<u>Dir.:</u> B.M. Grossat
		Sans Diplome		1 year		
	ILO, Geneva (International Labor Organization)					Bureau of Statistics and Special Studies: - Hubertus Zoetewij (NL) - James ipsilantis (US) Training: Andre Abou Ghanem (FR) Training Policies: Bernardo Bergerie-Pagagoy (ARG)

## APPENDIX 4 (continued)

Location	Institution	Recruitment Level	Area(s) of Training	Length of Training	Degree/Diploma	Other Relevant Information
EUROPE (cont'd)	INSEE, Paris (Institut National de la Statistique et des Etudes Economiques) 23 Quai Branly Paris 75007	Licence + competitive exam OR Experienced ITS + exam	Statistics, Economics	Short and 3-year courses	Ingenieur-Economiste-Statisticien (IES)	
	CESD, Paris (Centre Europeen de la Formation des Statisticiens-Economistes pour les pays en voie de Developpement) 3 Avenue Pierre Larousse 92240, Malakoff	Licence + competitive exam OR Experienced ITS + exam	Statistics, Economics	3 years	Ingenieur-Economiste-Statisticien (IES)	
NORTH AMERICA	University of Montreal, Department of Demography	Secondary school diploma or baccalaureat	Undergrad: Elements of data collection; demography analysis; population theory; economic & social aspects of population phenomena; demography of developing countries; politics & population; family planning; labor force Grad: Demographic analysis; demographic models; economic demography, human resource planning; demog. & human ecology; migration; use of computers in demography	1 or 2 years	B.Sc.	Professor Jacques Legare
	Departement de Demographie Universite de Montreal C.P. 6128, Montreal Canada H3C 39F	University Degree or Licence		+ 2 years	M.Sc. Ph.D. Demography	

Location	Institution	Recruitment Level	Area(s) of Training	Length of Training	Degree/Diploma	Other Relevant Information
NORTH AMERICA (cont'd)	U.S. Census Bureau (BUCEN) International Statistical Programs Center Department of Commerce Washington, D.C.	University Degree or equivalent + English language proficiency and some work experience	Sampling and survey methods; Agricultural surveys and Censuses; Population statistics & demographic analysis; Economic surveys and Censuses; Computer data systems	12 months + 5 months + 6 months	Advanced standing credits toward undergraduate or masters degree, depending on entry level and program OR Diploma (1 yr. program) OR Certificate (short-term program)	Combined degree program in social and economic statistics is offered with George Washington University; combined degree in demography with Georgetown University

APPENDIX 5

REPORT OF AN INVENTORY OF COMPUTER  
HARDWARE AND RELATED COMPUTER SKILLS

DUALABS -- APRIL 3, 1979



USE AND ACCESS LABORATORIES, Suite 900, 1601 N. Kent St., Arlington, Va. 22209 • 703 525-1480

April 3, 1979

MEMORANDUM

TO: Liliane Floge  
FROM: Jack Beresford  
SUBJECT: Trip Report AID-1

Attached please find a copy of Joe Willard's and Sigmund Schor's report on their trip to Senegal, Mali, Upper Volta, and Niger.

Attachment

Joseph L. Willard  
Delta Systems Consultants, Inc

Sigmund Schor  
Consultant, DUALabs

### TRIP REPORT

This assignment was undertaken for the purpose of establishing an inventory of computer hardware and related computer skills currently available in Senegal, Mali, Upper Volta and Niger, and to recommend to USAID/Bamako and to Mr. Landing Savane, the Director of the Demographic Unit of the Sahel Institute appropriate actions to take in order to carry out computerized analysis of various demographic data files. Additionally, there was an attempt made to assist in the installation of COCENTS at the Bureau Central du Recensements (BCR) in Bamako, Mali.

#### TASK 1.7

After discussing the situation at BCR in Bamako, it was determined that the most feasible way to deliver the correct version of COCENTS to Bamako was to try to secure a copy of the system from the Nationaux Comptes in Niamey, Niger and send the copy via AID pouch to Bamako. In Niamey, meetings were held with Mr. M. Solley at Nationaux Comptes and Mr. R.H. Rotach, UN Census Adviser. With help from Mr. Harvey Gutman, Assistant Mission Director in Niamey, we persuaded Mr. Rotach to provide a copy of COCENTS for the BCR in Bamako. Since we left Niamey before the copy had been made, we will have to wait to hear from Mr. Park to learn if the effort was successful.

#### TASK 2.3

We met with Mr. Landing Savane in Dakar on February 28 and made a verbal report on our findings. The draft report was written in Dakar and a copy was delivered to Mr. Hata Gainger at the UNFPA office in Dakar for Mr. Savane. Attached is the final report and if AID/Washington concurs, copies should be sent to Mr. Tom Park at USAID/Bamako and to Mr. Savane at the Institute of the Sahel in Bamako.

Attachment

## I. INTRODUCTION

### A. The Institute of the Sahel

The Institute of the Sahel was established as a specialized organization of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) in December 1977. The primary objective of the Institute is to stimulate deep reflection on the problems of the countries of the Sahel by coordinating social, economic and technical research and by establishing a documentation center and network. Within the Institute, a Demographic Unit has been established and has been provided USAID grant funds to initiate a program of demographic research. This includes two elements: a demographic coordination unit within the Institute and a demographic research program which includes research at the regional and national levels. The specific functions of the demographic research program as outlined in the July 1978 AID grant agreement are:

1. To generate and maintain current information on demographic data of all Sahelian countries,
2. To analyze migration flows, and settlement patterns,
3. To provide an inventory of demographic research in the region,
4. To administer a small grants research program,
5. To identify training needs and administer a demographic training program,
6. To disseminate research results through seminars, workshops, and publications.

The Director of the Demographic Unit, Mr. Landing Savane, has requested (through USAID/Bamako) that an inventory of the computing capability of the region be undertaken, including recommendations on the level of capability to be established by the Institute to support the demographic functions described above.

The inventory and recommendations were completed by Joseph L. Willard and Sigmund Schor under the 1980 Worldwide Census Project of the Data Use and Access Laboratories (DUALabs) and are included in this report.

### B. Record of Visits of Willard and Schor

Upon arrival in Dakar, Senegal on February 13, 1979, the consultants contacted the USAID office. It was learned that Mr. Savane was attending a conference being sponsored by UNESCO. Accordingly, arrangements were made with him to schedule the visits to Bamako, Ouagadougou and Niamey.

The following meetings and visits were held during the period of February 13 through March 2, 1979:

1. Landing Savane, Chief, Demographic Unit, Institute of the Sahel
2. Jean Marie Toko, Deputy Chief, Demographic Unit, Institute of the Sahel
3. Viola Dia, Assistant Health Officer, USAID/Dakar
4. Ray King, Controller, USAID/Dakar
5. Mbaye Diallo, Chief Programmer/Analyst Direction de la Statistique Senegal
6. Mamadou Badiane, Systems Engineer, IBM, Dakar
7. M. Ndao, Systems Engineer for Telecommunications, IBM, Dakar
8. Edmund Rodriguez, Demographer, BNR, Senegal
9. Lamine Diop, Director, BNR, Senegal
10. Jean Luc Rotger, Commercial Director, Burroughs, Dakar
11. Tata Sangare, Assistant Health Officer, USAID/Bamako
12. Philippe Mambourg, UN Census Adviser/Bamako
13. Nalla Kane, Director, Institute of the Sahel
14. Alioune Badara Camara, Coordinator, Documentation Unit, Institute of the Sahel
15. Tom Park, Health Officer, USAID/Bamako
16. Ron Levin, Director, USAID/Bamako
17. Richard Myers, Deputy Director, USAID/Ouagadougou
18. Abraham Hirsch, AID Liaison Officer with CILSS/Ouagadougou
19. Jean de Chantal, IDRC, Ottawa (on assignment in Ouagadougou)
20. Michel Sidwaya Compaore, Director, CENATRIN, Upper Volta
21. Joachim Tankoano, Deputy Director, CENATRIN, Upper Volta
22. Sidiki Coulibaly, Director of Service, National Institute of Statistics, Upper Volta
23. George Jones, Health Officer, USAID/Niamey
24. Jay Johnson, Director, USAID/Niamey
25. R.H. Rotach, UN Census Adviser/Niamey
26. Pierre Chopin, FAC Computer Adviser/Niamey
27. Stephane de Fraissinette, FAC Computer Adviser/Niamey
28. G. Owens, Hydrologist, WMO, Agrhyment/Niamey
29. Roy Harrell, USAID/Niamey
30. Jonathan Sheline, Epidemiologist, AFRICARE/Niamey
31. M.C. Thuriaux, M.D., Belgian Foreign Assistance/Niamey
32. M. Solley, Director, Comptes Nationaux, Niger
33. Harvey E. Gutman, Assistant Director, USAID/Niamey
34. Mary Diop, USAID/Dakar

## II. BACKGROUND

### A. Regional Perspective

As a logical follow-up to the African Census Programme (both 1970 and 1980 Rounds), there is a growing awareness of the need to improve the volume and quality of population data through the establishment of household survey programs. This awareness has led to improved technical advisory assistance to African states and more confidence in the ability to organize national data collection operations.

In the report of the XIX session of the UN Statistical Commission In November 1976, the following was included: "The Commission agreed that It was vitally important for African countries to develop permanent field survey organizations to produce integrated data on employment, other productive activity, income, levels of living, and related social and demographic statistics on a continuing basis. The Commission noted that the programme was country oriented in that it aimed at improving the capacity of countries to produce statistics for their own needs, but that a regional supporting component was necessary for its successful implementation." The UN Economic and Social Council (ECOSOC) on May 5, 1977 adopted Resolution 2055<sup>1/</sup> which made special note of the high priority given by the UN Economic Commission for Africa (ECA) for the implementation of a regional programme to establish or improve a national household survey capability.

At the tenth session of the Conference of African Statisticians in October 1977, the report on the ECA statistical activities included the following paragraph as part of the project aim: "To develop and coordinate statistical services in the African region to meet the growing data requirements for administration, industry, policy formulation, and planning for economic and social development; to develop a regional framework of statistical information supported by detailed studies, providing a reasonably comprehensive account of the African economic and social situation ... and, (to improve support for) statistical evaluation of selected social indicators."<sup>2/</sup>

These multiple references emphasize the very high priority being given to the implementation and subsequent evaluation of surveys which have social and demographic content as a major component. Within the Sahel region there is undoubtedly much data from surveys as well as national censuses that have not been analyzed using modern computer techniques. In fact, much of the data has not yet even been processed.

## B. Major Statistical Software Packages

Since the 1950's, various universities in the U.S., Canada, and Europe have been the testing ground for sophisticated generalized computer programs designed to assist statisticians, demographers and other social scientists in the analysis of data. As the number of students using the programs (or software packages as they are sometimes called) has grown, the knowledge and use of the packages have also grown. The major packages are used widely and have been installed in thousands of computer centers throughout the U.S. and Europe. Many were developed under government contracts or grants and are available to anyone for a modest fee. Some have been taken over by private organizations and enhanced and marketed at a much higher fee which usually includes additional systems support and documentation. More recently, commercial data processing companies have begun to develop and market statistical packages directly to commercial enterprises that have a need for statistical analysis of data.

In order for a demographic institution or center to be capable of providing both training and analytical services, it will need to have available one or more of these major statistical software packages. One compilation of the description of statistical software packages was recently completed by Professor Ivor Francis at the Cornell University. His findings were exhibited in a poster display at the meeting of the International Statistical Institute (ISI) in New Delhi, India in December 1977, and have recently been published by the Registrar General's Office in New Delhi.<sup>3/</sup> The major packages including BMD, BMDP, DATATEXT, GENSTAT, MINI-TAB, MULTIVARIATE STATISTICAL PACKAGE, OSIRIS, P-STAT, and SAS.

### III. OBSERVATIONS AND TECHNICAL CONSIDERATIONS

#### A. General

Based on observations and information obtained during the various interviews the 8 countries of the Sahel can be divided into 3 levels of computer capacity and skills. In the highest category, by itself, is Senegal. Mali, Upper Volta and Niger fall into the second level and Mauritania, Gambia, Chad and Cape Verde are unquestionably at the lowest level of capability.

#### B. Senegal

It was clear that the level of resources, human and hardware, were significantly higher and more abundant in Dakar than in the rest of the region. The IBM office in Dakar reported that a number of small to medium-sized systems were now installed there including two IBM 370/145 systems installed in government offices, several large configurations of the IBM System 3 and numerous IBM System 32 and System 34 configurations.

The Chief of the Computer processing section at the Direction de la Statistique, Mr. Mbaye Diallo, reported that the Ministry of Finance runs one of the government owned 370/145 systems and rents time to various government agencies. The Bureau of National Recensement (Census Bureau) generally received a very low priority for using the computer and therefore the 1976 Census results were still being processed.

Mr. Diallo also speculated that there might be 30-40 good programmers in Dakar of the various government offices. (Mr. Badiane of IBM estimated about 100 programmers might be present in Dakar.)

Mr. Jean Luc Rotger of Burroughs said that several B1700 and B1800 systems were installed in Dakar. The B1700 series were no longer being sold, but the B1800 series ranged in price from about \$100,000 to \$325,000 excluding shipping costs and import taxes.

Coincident to this computer assessment, IBM announced worldwide on February 12, the System 38. The price range for this new line of computers is more or less the same as the Burroughs B1800 series. IBM/Dakar quoted a 13 month delivery schedule from the date of the order. Burroughs quoted a 12 month delivery schedule.

### C. Mali, Upper Volta and Niger

In Mali, the major computer vendor was Honeywell-Bull. There were some very old second generation GE-Honeywell systems still in use, several Honeywell-Bull 61 series (at the Bank of Mali and Mali Electric (EDM) and the newly installed 6260 series at the Bureau de Recensement (BDR).

In Upper Volta, there were only three computer systems that could be identified. The major system was an IBM 370/125 at the National Center for Information Processing (CENATRIN). There was an IBM system 3 at the National Bank, and an IBM System 32 at a Sugar factory in Banfara.

In Niger, there are four computer installations. The largest is at the Direction de la Statistique, Ministaire du Plan. This is a Honeywell-Bull 6260, with 128 K memory with 4 Disk Drives. At the BIAO Bank there is a slightly smaller Honeywell Bull 6260 and there is a similar model H-B 6160 at the BDRN (National Bank of Niger).

### D. Other Sahelian Countries

During this visit, information about several other countries of the Sahel was obtained from various sources. There are no computers in Cape Verde or Gambia and in Mauritania, several IBM System 3 configurations and smaller system 32's as well as an IBM 370/125 were identified by officials at IBM/Dakar.

### E. Agrhymet - Niamey

The visit to Agrhymet is documented separately because of the unique role this institution may play within CILSS. An inspection was made of the recently completed Agrhymet complex by Willard and Schor at a time when staff and students were away, but there was an overwhelming feeling of great achievement in the establishment and organization of the training and research facility. Numerous donors have contributed to create a modern facility which houses 50 resident students at a level that may be comparable to the community college or junior college level within the U.S. The students are selected by CILSS from the various countries for two year course of study which permits a 3-4 month on-the-job assignment back in the student's country between the two years. Courses are offered in agriscience, hydrology, meteorology, computer science and related subjects.

There is an amphitheater, library, computer room, numerous laboratories, cartographic facilities as well as classrooms and student quarters.

The one discordant note is that the procurement of a mid-range general purpose computer has been delayed because of what appears to be a slowdown in new computer acquisitions by the General Services Administration. The procurement was initiated in December 1977 and delivery has slipped from December 1978 to likely delivery by October-December 1979.

## IV RECOMMENDATIONS

### A. General

During the visit to the four countries of the CILSS region, the authors learned of a concurrent activity underway to record the demographic research activities within CILSS. This is a centrally funded project that is intended to identify demographic research activities and capabilities already in place.

Though the Willard/Schor study was concerned primarily with the general subjects of computer capacity and programming capability, the research aspects of the demographic program of the Sanel Institute must be given prior, or at least concurrent, consideration. There was no evidence available to the consultants to indicate that the Demographic Unit did indeed have a planned program of data analysis. A viable program implies the establishment of objectives, goals, a detailed mission, priorities and of course some estimate of volume, type and complexity of processing required.

The importance of having such a program is particularly critical in light of the currently recognized political difficulties involved in the country exchange of detailed population data. Such a program of demographic research could range at one extreme from the setting of standards, issuance of recommendations and provision for the exchange of information on computer analysis, to the actual processing of detailed data, including census returns, for the various countries of the region, where they maybe having problems in obtaining sufficient computer capacity or programming capability at home. Until a planned program of demographic analysis is created, it is difficult to assess, realistically, the needs for hardware and software.

Accordingly, based on the limited information at hand, some of the essential data processing requirements for the regional program of demographic analysis are:

1. The preparation of an inventory of demographic data files that are available in each country.
2. A description of each file that includes the record layout if the file is in punch card or magnetic tape or disk.
3. The level of the records - are they detailed individual (confidential) records or in aggregate form.
4. The establishment of a priority list for file analysis.
5. A plan of analysis for each of the various files. For example, which particular statistical technique will be used in the analysis, and is there a potential software package that has that procedure available.
6. An identification of persons who are now trained in the use of computer software for statistical analysis.
7. A plan to establish a training program for demographers in the use of computer software for statistical analysis.

8. A staffing plan for the demographic unit over the next 10 months.
9. A plan for instituting a series of seminars in the capital cities of those countries with computers, to introduce the concept of computer analysis to demographers.

#### B. Utilization of Computers

While there are some obvious advantages in an organization having its own computer center, it does not yet appear to be time for the Institute of the Sahel to have a computer devoted to the Demographic Unit/Documentation Unit. The major computer facilities in the region for the most part are currently underutilized and should remain so indefinitely.

The Agrhymet Center is expecting delivery of a mid-range general purpose computer in late 1979, and the justification for that procurement was in part that the excess time available would be devoted to other CILSS activities, at cost.

There is a severe shortage of skilled computer personnel in the Sahel region making the task of establishing a new center even more difficult.

It is the belief of the authors that the following plan would offer adequate computer time for the Demographic Unit for at least two years. The main elements of the plan are:

1. After establishing a plan of analysis for major data files, an effective working relationship should be established with one or more of the following computer centers:
  - a. BUREAU CENTRAL DU RECENSEMENT  
BAMAKO, MALI  
Honeywell/Bull 6260 with 160 K bytes  
Not used approximately 75 percent of time available
  - b. DIRECTION DE LA STATISTIQUE ET DES COMPTES NATIONAUX  
NIAMEY, NIGER  
Honeywell/Bull 6260 with 128 K bytes  
Not used approximately 65 percent of time available
  - c. CENATRI  
OUAGADOUGOU, UPPER VOLTA  
IBM 370/125 with 160 K bytes  
SPSS now installed  
Not used approximately 20 percent of time available
  - d. MIN DU FINANCE  
DAKAR, SENEGAL  
IBM 370/145 with 768 K bytes  
Used by many government agencies  
Utilization not known

2. Design and implement a training program for staff and others on the use of SPSS at CENATRIN. If necessary, seek an outside consultant to provide training.
3. Stimulate the other centers mentioned above to install SPSS or another of the major packages. (Probably Mini-Tab from Pennsylvania State University would be a good second choice).
4. Establish one or two participant training fellowships each year to send selected qualified students for advanced training to the U.S. for university level exposure. (U. of Chicago, UCLA, U. of Miami, etc., or Canada or France).
5. Establish a working relationship with an organization in the U.S. so that routine correspondence could answer questions without having to send a consultant each time to the region. For example, Agromet has such a relationship with the National Weather Service in Silver Spring, Maryland.
6. Organize an annual seminar where guest lecturers from the U.S. and Europe could present new developments in statistical software to a relatively large number of persons at one time.

#### C. Location of the Demographic Analysis Function

There are undoubtedly obvious temptations to use Dakar as a base for demographic analysis predicated on the rationale of greater availability of computer technology. However, in light of the above listed availability of this technology in Bamako and elsewhere, there would be an organizational advantage, at least in the early stages, of retaining this analytic function at the Institute headquarters in Bamako.

#### D. AID - CILSS

1. Given the very high priority that AID places on support to CILSS countries, consideration should be made for stationing a full time data processing adviser (American or TCN) in the region who would be available to all USAID missions in various data processing activities.

2. Review the computing situation in 12-15 months to determine if a new approach is warranted.

#### FOOTNOTES

1. Report on the African Household Survey Capability Programme ECA, Addis Ababa E/CN.14/CAS.10/17, 2 June 1977 Annex II.
2. Report on ECA Statistical Activities 1975-1977, ECA, Addis Ababa E/CN.14/CAS.10/1, 22 June 1977 Page II.
3. Unpublished. Delta has obtained an unpublished preliminary copy.

APPENDIX 6

GLOSSARY OF ACRONYMS

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AVV	Autorite des Amenagements des Vallees de Volta (Ouagadougou)
BCRP	Bureau Central du Recensement de la Population (Nouakchott)
BEPC	Brevet d'Etudes du Premier Cycle
CENATRIN	Centre National du Traitement de l'Information (Ouagadougou)
CESD	Centre d'Etudes Scientifiques et Demographiques (Nouakchott)
CESD	Centre Europeen de la Formation des Statisticiens-Economistes pour les Pays en Voie du Developpement (Paris)
CEDOR	Centre Demographique de l'Organisation des Nations Unies en Roumanie (Bucharest)
CILSS	Comite Permanent des Inter-Etats de la Lutte contre la Secheresse dans le Sahel (Ouagadougou)
CNRST	Centre National de la Recherche Scientifique et Technique (formerly the Centre Voltaique de Recherche Scientifique, Ouagadougou)
CODESRIA	Conseil pour le Developpement de la Recherche Economique et Sociale en Afrique (Dakar)
CVRS	Centre Voltaique de Recherche Scientifique (now called the Centre National de la Recherche Scientifique et Technique, Ouagadougou)
DED	Division des Enquetes et de la Demographie (Ministry of Finance, Dakar)
ECA	Economic Commission for Africa (Addis Ababa)
ENEA	Ecole Nationale d'Economie Appliquee (Dakar)
FAC	Fonds d'Aide et Cooperation (Paris)
FAO	Food and Agricultural Organization (Rome)
IDEP	Institut du Developpement Economique et de la Planification (Dakar)
IDRC	International Development Research Center (Ottawa)
IDUP	Institut de Demographie de l'Universite de Paris (Paris)

IFAN	Institut Fondamental d'Afrique Noire
IFORD	Institut de la Formation et de la Recherche Demographiques (Yaounde)
ILO	International Labor Organization (Geneva)
INED	Institut National d'Etudes Demographiques
INSD	Institut National de la Statistique et de la Demographie (Ouagadougou)
INSEA	Institut National de la Statistique et de l'Economie Appliquee (Rabat)
INSEE	Institut National des Statistiques et des Etudes Economiques (Paris)
IPD	Institut Pan-Africain du Developpement (Douala and Ouagadougou)
IRSH	Institut de Recherches en Sciences Humaines (Niamey)
ISPEA	Institut de Statistique de la Planification et de l'Economie Appliquee (Yaounde)
MEPID	Ministry of Economic Planning and Industrial Development (Banjul)
MRC	Medical Research Council (Fajara, The Gambia)
OCAMM	Organisation Commune Africaine, Malgache et Mauricienne (Yaounde)
OECD	Organization for Economic Cooperation and Development (Paris)
OMVS	Organisation pour la Mise en Valeur du Fleuve Senegal (Dakar)
ONPE	Office National de la Promotion de l'Emploi (Ouagadougou)
ORSTOM	Office de la Recherche Scientifique et Technique d'Outre-Mer (Paris)
PECTA	Programme des Emplois et des Competences Techniques pour l'Afrique (ILO, Geneva)
RAMS	Rural Assessment/Manpower Study (USAID/Nouakchott)
RIPS	Regional Institute for Population Studies (Accra)
SAED	Societe Africaines d'Etudes du Developpement (Ouagadougou)
SEDU	Socio-Economic/Demographic Unit (Sahel Institute, Bamako)

SOMIVAC Societe pour la Mise en Valeur de la Casamance (Ziguinchor, Senegal)

SONED Societe Nationale d'Etudes du Developpement (Dakar)

JNDP United Nations Development Program (New York)

JNESCO United Nations Educational, Scientific and Cultural Organization (Paris)

UNFPA United Nations Fund for Population Activities (New York)

UNICEF United Nations Children's Emergency Fund (New York)

USAID United States Agency for International Development (Washington)

WFS World Fertility Survey (London)

Statistical Packages for the Computer

COCENTS Computer Program for Census Tabulations (U.S. Bureau of the Census)

OSIRIS Program for the Management and Analysis of Social Science Data (Institute for Social Research, University of Michigan)

SPSS Statistical Package for the Social Sciences (University of Chicago)

X-TALLY Cross-Tally (tabulation) (United Nations)