PN-AAM-928

ISN 29451

ANNUAL REPORT FOR FISCAL YEAR 1980

of the

Surveys and Evaluation Unit
International Statistical Programs Center
U.S. Bureau of the Census

TABLE OF CONTENTS

	Page
I. Background	1
A. Introduction	1
B. Surveys and Evaluation Staff	1
1. Technical Assistance	2
2. Working with Counterparts	3
3. Documentation	3
4. Organization	4
5. Address and Principal Contacts	4
C. Administrative Arrangements with AID	5
1. Task Force	5
2. Funding	6
a. Central Funding	6
b. Activity-Specific Funding from Regional Bureaus	7
c. USAID Mission Funding	7
3. Scope of Work	8
a. Introduction	8
b. Specific Tasks	9
II. Summary of Activities for FY80	10
A. Overall Summary	10
B. Summary Decription of All Projects by Regional Bureau	13
1. Africa	13
a. Gambia River Basin	13
b. Liberia Expenditure Survey	13
c. Regional Education Analysis Project	13

Page

d. Rwanda Agriculture Survey and Analysis Project. 13

e. Senegal Evaluations 14

2. Asia. 15

a. Bangladesh Rural Electrification Evaluation 15

b. Indonesia Northern Sumatra Regional Planning. 16

c. Indonesia Rural Electrification 16

d. Indonesia Rural Roads Project Evaluation. 17

e. Indonesia Surakarta Water Project Evaluation. 17

f. Philippines Provincial Water Project Evaluation 18

g. Philippines Rural Electrification Evaluation. 18

h. Philippines Inter ı Demonstration Project (IDP) Evaluation. 19

i. Thailand Land Settlements Evaluation. 19

j. Thailand Standardized Socioeconomic Survey. 20

3. Latin America and the Caribbean 20

a. Bolivia Farm Policy 20

b. Dominican Republic Disaster Relief. 21

c. Ecuador INEC Statistics and Training. 21

d. Guyana Agriculture Planning 21

e. Guyana Agriculture Planning (Ag. Frame) 21

f. Guyana Rural Farm Household Survey. 22

g. Honduras Agriculture Sector 23

h. Jamaica Health Information System 23

i. Nicaragua Agriculture Census. 24

j. Paraguay Small Farm Survey. 24

k. Peru Agriculture Planning 25

Page

4. Near East. 25

a. Azores Statistical System. 25

b. Egypt Cairo Water Evaluation 25

c. Egypt Development Decentralization I and Basic Village. 26

d. Jordan Valley Information System 26

e. Morocco Statistical Services Project 26

f. Portugal COCENTS 27

g. Tunisia Central Rural Development Evaluation 27

5. Central Bureaus. 27

a. DS/OST - Software Development. 27

b. DS/POP - ESCAP Migration/Mobility Surveys. 28

c. PPC/E - Evaluations. 28

C. Detailed Description of Major Projects 28

1. Regional Education Analysis. 28

2. Rwanda Agriculture Survey and Analysis Project 32

3. Indonesia Surakarta Water Project Evaluation 33

4. Philippines Rural Electrification Evaluation 34

5. Thailand Standardized Socioeconomic Survey 39

6. Guyana Rural Farm Housebold Survey 40

7. Jamaica Health Information System. 42

8. Morocco Statistical Services Project 44

9. Software Development 46

10. ESCAP Migration/Mobility Survey. 48

I. Background

A. Introduction

For more than three decades, the foreign assistance program of the United States has included support for improvement of government statistical systems in developing countries. Recognizing that one characteristic of a developed country is a statistical system to measure socioeconomic progress and to assist in its planning, the U.S. has made available the resources of its own Federal Statistical System in providing technical assistance to the world's emerging nations in order to assist in developing institutional capabilities within those countries.

The international training and technical assistance activities of the Bureau are principally carried out in the International Statistical Programs Center (ISPC). Other divisions of the Bureau are involved in the analysis of international statistics. Recently, the Bureau combined all of its international activities under the Assistant Director for International Programs.

Legislative authority for the Bureau's international activities is derived from the Foreign Assistance Act and delegated to the Bureau by the principal foreign assistance agency, the U.S. Agency for International Development (AID). The Agency has been, and continues to be, the chief source of funding for the Bureau's international activities, although the Bureau also received some program-specific funds from United Nations agencies and individual foreign nations.

The Bureau performs these functions through short and long-term assistance to developing nations and through training and case study applications. The Bureau also develops international demographic estimates as part of its ongoing program. The International Statistical Programs Center of the Bureau of the Census has organized its activities into several organizational units. These are: Surveys and Evaluation, Overseas Consultation and Technical Services, Training and Information Services, and the 1980 World Census staff.

The following describes the technical assistance operation of the Surveys and Evaluation Unit (SEU) as of 1980.

B. Surveys and Evaluation Staff

The primary mission of the Surveys and Evaluation staff is to help host-country professionals, primarily those in government service, to develop skills in survey design and planning and the associated data collection, processing and analysis efforts. The projects are designed to utilize available (in-country) resources and to develop the skills of host-country data collection efforts without major outside assistance. This mission is accomplished through the provision of technical assistance, including training, development of comprehensive documentation and other elements of institutional development.

1. Technical Assistance*

While the Bureau of the Census has over many years placed resident advisors in developing countries, the trend in recent years has been towards providing technical assistance through shorter-term assignments. This trend has led towards several modes of operation on the part of the Bureau with respect to short-term technical assistance. These are: (1) Focused Technical Input, where technical assistance is provided when there is a well-defined problem, but limited expertise in the host country to resolve it; (2) Problem Assessment and Project Development, where the host country has a data collection activity pending and needs assistance in planning a viable approach to it; (3) Continuing Techical Consultations, where a long-term project is undertaken and recurring technical assistance is required; and (4) Consultation and Implementation, where the host country may lack the expertise or equipment to implement portions of the data collection operation and implementation assistance is provided. Assistance is provided in basically two ways: working with the sponsoring agency and its missions on data needs and strategies; and working on project surveys and evaluations with host-country counterparts.

The staff works closely with the sponsoring agencies to understand their goals, program needs, policies and strategies. Considerable effort is devoted to arriving at a concensus about the goals and purposes of the data collection. The planning process includes estimating the level of resources to be expended on the effort. Often this is done through the development of scopes of work which detail the data collection and analysis components of projects, the schedule of events and the amount of SEU and counterpart staff time required for these activities.

In summary, the Surveys and Evaluation staff provides technical assistance for data collection efforts to their host-country counterparts in the areas of conceptualization, planning, designing, implementation, analysis and evaluation of programs, projects and sectoral studies. This covers the full range of survey methods and design from questionnaire design, sampling, field operations, experimental design and data processing through tabulations specification, analysis and publication. A key component of this work is the development of survey techniques and methods appropriate to the developing country context.

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*Although the principal focus of this narrative is technical assistance to developing countries, the Surveys and Evaluation Unit has, on many occasions, provided guidance and technical assistance to AID/W offices. This assistance has involved analyzing existing data, writing scopes of work, serving a technical role in contractor monitoring, assisting in writing or reviewing PIDs or PPs, and so forth.

2. Working with Counterparts

Once a counterpart group is identified, planning begins in earnest. Although the sponsoring agency continues to be involved, the focus of the assistance shifts to training the counterparts, both formally and informally. The first task in this effort is to develop a plan which is adaptable to the abilities and resources of the counterparts as well as responsive to the needs of the sponsor. The counterpart group may plan, implement and analyze the data collection effort or it may contract for one or more of these activities. If a contract is needed, the SEU staff frequently provides assistance in developing specifications for the work and in providing technical assistance to the contractor.

Once a plan has been agreed upon by the sponsor, the host-country implementing agency and the counterparts, implementation begins. Depending on the complexity of the data collection plan and the skills and experience of the counterparts, varying levels of assistance may be required. Appropriate technical assistance can range from a periodic review of data collection plans and implementation reports, to involvement in all phases of the project.

Training is the common theme running through all the activities of the Surveys and Evaluation staff assistance. The presentation of formal short courses, as well as on-the-job training in survey design and planning, field data collection, data processing and analysis are carried out in host countries. The formal sessions of instruction are tailored to specific needs of the host-country institution and are occasionally developed in conjunction with a local university and incorporated into their regular scholastic program. Sometimes, counterparts are recommended for long-term training which is done by the Training and Information Services staff at headquarters in Washington. The short, tailored courses are developed and conducted in Spanish, French and occasionally, other languages. The on-the-job training is a mixture of informal seminars and structured tasks leading to a completed survey effort and is usually done in-country. Occasionally intensive short-term, on-the-job training for project leaders and/or data processors is done at Census headquarters.

3. Documentation

Documentation of all the work undertaken is an important aspect of every project the SEU staff undertakes. It contributes to counterpart organizational capabilities by providing a record of the procedures used. Generally, a series of methodological, statistical and analytical documents are produced which provide a procedural history for each project as well as suggestions for improvement, descriptions of data files, statistical tables and other relevant information.

The combination of technical assistance, training and documentation provides a valuable guide for the host-country counterparts in their future data collection planning, design and implementation. It also enables them to make full use of their knowledge and capabilities after the Surveys and Evaluation staff's involvement has ended.

4. Organization

The staff is composed of data processors, mathematical statisticians and survey statisticians. The data processing staff has experience in processing large and small data files with both complex, sophisticated computers and simple, low-capacity computers. They have also developed software packages tailored to small computers in developing countries.

The mathematical statisticians provide sampling assistance for sample surveys and census operations, develop and implement statistical techniques for analyzing data from surveys and censuses, plan experimental and quasi-experimental designs for evaluation projects and conduct statistical evaluations. The survey statisticians are involved in all areas of survey planning, design, implementation and analysis of data. The survey statistician staff are trained in subject-matter areas such as economics, agriculture, health, and education.

The Surveys and Evaluation staff has capabilities in over five languages with heavy emphasis in Spanish, Portuguese and French. A key feature of the operation is the organizational flexibility which permits appropriate staff to be made available on very short notice.

Functionally, the Surveys and Evaluation staff is composed of five units. These are: General Surveys Branch, Evaluative Studies Branch, Developmental Research and Analysis Branch, Computer Applications Branch and the International Mathematical Statistical Staff (which is organizationally part of the Statistical Methods Division of the Bureau).

5. Address and Principal Contacts

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C. Administrative Arrangements with AID

1. Task Force

In FY78, the activities of SEU were consolidated under two Resource Services Support Agreements (RSSA). BuCen RSSA 1-78 covers development assistance (DA) activities and BuCen RSSA 2-78 covers Economic Support Fund (ESF) activities. Prior to FY78, SEU activities had been funded through a variety of agreements with individual regional bureaus and AID Missions.

This consolidation was undertaken to add stability to BuCen funding, provide central coordination of SEU activities and to encourage longer term planning of AID needs. The key concept in the BuCen RSSA is a task force composed of representatives from each AID user bureau, and chaired by the Chief of Economic and Social Data Services (ESDS) of the Bureau of Development Support (DSB).

As chairman of the Task Force, the ESDS Chief is responsible for overall coordination and is the formal monitor of the RSSA. Working closely with other task force members, the chairman:

A. Establishes the overall magnitude of the RSSA based on user bureau expressed needs, funding availability and AID policy. In this process, the chairman must balance both long and short term considerations.

B. Monitors user bureau financial contributions to the RSSA and their consistency with usage.

C. Mediates the allocation of RSSA resource, where necessary, among user bureaus where demand exceeds supply.

D. Develops overall RSSA scope of work and monitors all new activities for consistency with the scope of work and AID policy.

E. Plays a primary role in identifying developmental activities with multiregional impact appropriate for funding under the RSSA monitoring these activities.

F. Calls periodic task force meetings.

In contrast to the chairman, the user bureau task force representatives have a more technical and activity-specific focus. The four regional bureaus (Africa, Asia, Latin America and the Caribbean, and Near East) and two central bureaus, Development Support (DSB) and Program and Policy Coordination (PPC). The Bureau for Program and Management Service (SER) is represented in an administrative, rather than user, role. The user bureau task force representatives:

a. determine resource needs for their bureaus and set priorities on individual activities. The level of need is established for each fiscal year and is formally communicated to the chairman several months before the start of the fiscal year.

b. respond to requests for assistance within their regions, setting priority for the request and communicating funding options.

c. obtain funding for activities undertaken in their region.

d. provide technical monitoring of individual activities within their region.

As can be seen, the user bureau task force members are largely responsible for responding to specific requests for assistance and resolving related funding issues.

2. Funding

Although a variety of funding sources support the SEU RSSA, these funds are essentially drawn from the three levels within AID: central funding from PPC and DSB, activity-specific funding from the regional bureaus, and activity-specific funding from USAID Missions.

a. Central Funding has been provided by PPC since FY78 to facilitate the consolidated RSSA concept and to support more quantitative project design and evaluation. This central support has also permitted flexibility in meeting shifting user bureau demands, enabled SEU to support a staff closer to the level of need and provided resources for a variety of unanticipated short-term technical support

activities. In FY82, the central funding source will shift from PPC to DSB and, while the magnitude of central funding will remain unchanged, its use will shift substantially. Rather than matching user bureau contributions for what are essentially user-bureau specified activities, the funding will be provided by DSB for "central or developmental" activities. Although these activities will be specified by DSB in consultation with other bureaus, in practice it is likely that multicountry activities will be emphasized. While these developmental efforts do have a significant long-term impact on country specific projects, in the short run this shift will force individual user bureaus to become entirely self-supporting in using SEU services, making the shifting of resources among bureaus to meet changing needs more difficult.

b. Activity-Specific Funding from Regional Bureaus are based on professional staff use rather than on actual cost. To accomplish this, the average cost for a professional person year (PPY) of work is calculated, which includes leave, personal benefits, travel, secretarial support, computer and other miscellaneous costs. For FY81, the total cost of a PPY is $82,150 and, for user bureaus, is reduced by the PPC contribution of $20,537 to arrive at the user bureaus cost for a PPY, $61,613. The user bureau cost is then multiplied by the number of years of delivered services requested to arrive at a total costs for the bureau. For example, if a user bureau requests 2.5 PPY, the total cost would be $154,033. The funding sources used by individual bureaus vary substantially. Funds have been utilized from regional project development and support (PD & S) accounts, regional general support projects, regional projects specific to SEU work and in some instances operating budgets.

c. USAID Mission Funding of SEU activities can originate from mission PD & S funds or from project funds. In the case of the former, which are generally short-term activities occurring with a fiscal year, these funds are usually incorporated into the RSSA by amendment at the RSSA-wide PPY rate. Similarly, with short-term activities funded under projects, an amendment to the RSSA is generally the most expedient approach. But for multi-year project funded activities, it is necessary to make a separate agreement called a Participating Agency Services Agreement (PASA). This agreement is related to the RSSA only by reference and has a completely separate actual cost budget.

As can be seen from above, there are a variety of approaches to funding SEU activities which vary from bureau to bureau in their application. For that reason, it is advisable that any requests for SEU assistance or questions concerning funding be directed to the appropriate user bureau task force member. The easiest way for USAID Missions to accomplish this is via cable referencing "BuCen RSSA 1-78" in the title. For AID/W staff, the following list of task force members should provide the appropriate contact:

BUREAU/OFFICE	NAME	PHONE NUMBER
AFR/DP	Henry Miles	632-9106
ASIA/DP	Barbara Pillsbury	632-9056
DSB/DIU	Annette Binnendijk	632-9170
LAC/DR	William Goodwin	632-8605
NE/DP	Richard Rhoda	632-9136
PPC/E	Robert Thompson	632-0226

3. Scope of Work

The general role of the SEU under BuCen RSSA has been to provide broad statistical and data processing support to supplement AID's substantive expertise, essentially providing technical expertise in an area which AID needs.

Within this framework, SEU has undertaken a wide variety of activities in many diverse fields. Among the services SEU has provided are:

-- technical input into project reviews;

-- participation in project design teams;

-- support of data collection and processing for sector analysis, program planning and project design;

-- in-country work with host-country professionals in statistical program development and training in data collection and processing, evaluation design and implementation, project monitoring and management information systems;

-- technical support of basic census and survey activities;

-- research and sample design;

-- technical support of project implementation activities; and

-- technical review of AID contract efforts.

These services have been provided in a variety of substantive areas including health, education, agriculture, rural roads and electrification, water systems and migration.

The actual scope of work from the FY81 SEU RSSA follows:

a. Introduction: As requested by AID/W and the USAID Missions, the Bureau of the Census shall provide statistical assistance to AID/W, USAID Missions, host-country institutions and AID contractors. This assistance shall be in the broad areas of survey and census design and data collection, processing and analysis.

b. Specific Tasks: In general, the Bureau of the Census (BuCen) through the office of the Assistant Chief for Surveys and Evaluation of the International Statistical Programs Center (BuCen/SEU) shall, as requested by AID, provide the following types of services worldwide:

1. Develop host-country capability to carry out data collection and processing by working closely with host-country staff, either in-country or in Washington.

2. Provide technical assistance in the areas of conceptualizing, planning, designing, implementing and analyzing data collection efforts for project and program planning, implementation and evaluation.

3. Assist in the evaluation of existing data and in the delineation of data needs.

4. Develop and evaluate proposals to meet these needs. This may include proposals for, or evaluations of:

   a. survey design and organization,

   b. questionnaire design,

   c. sample design,

   d. data processing plans,

   e. quality control measures, and

   f. overall timing of activities to be carried out.

   Estimates of resources required for each of these areas form an essential part of this assistance.

5. Assist in finding, assessing, strengthening and supporting appropriate host-country institutions as delineated by AID and its Missions, involved in survey and census data collection efforts.

6. Assist in finding, assessing, strengthening and supporting appropriate contractors for the implementation of data collection activities. Particular attention will be given to qualified small and disadvantaged businesses with the assistance of AID's Office of Small and Disadvantaged Businesses (SDB).

7. Assist in implementing aspects of data collection activities, subject to prior agreement by all parties as to working relationships and responsibilities.

8. Develop and provide training and dissemination for statistical techniques and software for data collection, processing and analysis.

II. Summary of Activities for FY80

A. Overall Summary

During FY80, the Surveys and Evaluation Unit (SEU) engaged in 42 separate project activities, altogether accounting for approximately 27 professional person years* of delivered services. The activities ranged in level of effort from about 2.5 professional person years for the ESCAP Migration/ Mobility Survey to less than 2 person weeks for one-shot technical assistance activities. The 27 person years, or 323 person months, were provided in three broad professional resource categories as follows:

Table 1. -- Number of Professional Person Months by Resource Category

Category	Professional Person Months
Mathematical Statisticians	40
Data Processing Advisors	95
Survey Statisticians and Subject-Matter Specialists	188
TOTAL	323

*Note: The unit of accounting for SEU services is a professional person month (ppm) or year (ppy). Those units of measure include actual work time spent on project activities and do not include leave, training or general administration. These services were provided to six bureaus within AID as follows:

Table 2. -- Number of Professional Person Months by Bureau

AID Bureau	Professional Person Months	Percent of Total
Total, all bureaus	323	100.0
Africa	37	11.5
Asia	108	33.4
Latin America and the Caribbean	73	22.6
Near East	25	7.7
Program and Policy Coordination	32	9.9
Development Support	48	14.9

The 42 activities undertaken in FY80 are described in the remainder of this report. Section II.B provides a summary description of all projects and Section II.C provides a more comprehensive report on the 10 largest activities. A complete list of the 42 activities and the level of effort expended on each is provided in Table 3.

Table 3. -- Number of Professional Person Months by Regional Bureau and Activity for FY80

Regional Bureau and Activity	Number of Professional Person Months
Total, all bureaus	323
AFRICA, total	37
Gambia River Basin	3
Liberia Expenditure Survey	3
Regional Education Analysis*	13
Rwanda Ag. Surveys and Analysis*	13
Senegal Evaluations	2
Other Activities	3
ASIA, total	108
Bangladesh Rural Electrification Evaluation	5
Indonesia No. Sumatra Regional Planning	10
Indonesia Rural Electrification Evaluation	11
Indonesia Rural Roads Evaluations	4
Indonesia Surakarta Water Evaluation*	20
Philippines Provincial Water Evaluation	12
Philippines Rural Elec. Evaluation*	15
Philippines I.D.P. Evaluation	6
Thailand Land Settlements Evaluation	10
Thailand Standardized Socioeconomic Survey*	12
Other activities	3
LATIN AMERICA AND THE CARIBBEAN, total	73
Bolivia Farm Policy	5
Dominican Republic Disaster Relief	1
Ecuador INEC Stat. and Training	1
Guyana Agriculture Planning	4
Guyana Agriculture Planning (Ag. Frame)	16
Guyana Rural Farm Household Survey*	13
Honduras Agriculture Sector	2
Jamaica Health Information System*	10
Nicaragua Agriculture Census	6
Paraguay Small Farm Survey	2
Peru Ag. Planning	6
Other activities	7

* see footnote at end of table.

NEAR EAST, total	25
Azores Statistical System	1
Egypt Basic Village Services Evaluation	1
Egypt Cairo Water Evaluation	1
Egypt Dev. Decentralization Evaluation	1
Jordan Valley Information System	4
Morocco Statistical Services*	13
Portugal (COCENTS)	2
Tunisia CTRD Evaluation	1
Other activities	1
CENTRAL BUREAUS, total	80
DS/OST - Software Development*	19
DS/POP - ESCAP Migration/Mobility Surveys*	29
PPC/E - Evaluations	17
Other activities (including program coordinator activities)	15

*These projects are fully discussed in Section II.C of this report.

B. Summary Description of All Projects by Regional Bureau

1. AFRICA

a. Gambia River Basin

At the request of AFR/DR, a BuCen specialist worked as a member of a project team to develop a project paper for the Gambia River Basin Development Project. The project purpose is the development of an institution to collect relevant data and perform the necessary studies to monitor and evaluate development progress on the Gambia River Basin.

Status: completed

b. Liberia Expenditure Survey

At the request of USAID/Monrovia, a sampling advisor and a data processing advisor worked with officials of the Ministry of Planning and Economic Affairs to assess problems and propose solutions to statistical problems of the 1976 Household Expenditure Survey. A technical report was submitted offering recommendations on how to organize the data for efficient processing and how to make estimates from the data. Followup activities were also proposed; however, the April 1980 coup d'etat resulted in a termination of all subsequent work.

Status: no further activity is expected

c. Regional Education Analysis Project

The overall purpose of the project is the enhancement of participating countries' abilities to identify and understand problems in their education systems through better data collection, processing and analysis. Kenya was selected as a model country for development of analytical and methodological materials. BuCen advisors have worked with project leaders to develop practical approaches to training, to conduct seminars on education analysis methods, and have contributed to analytical working documents on Kenyan education statistics. (See page 28 for a more comprehensive discussion of this project.)

Status: ongoing

d. Rwanda Agriculture Survey and Analysis Project

The purpose of the Agriculture Survey and Analysis Project is to develop an institutional capability in the Rwandan Ministry of Agriculture and Livestock to collect, process and analyze data on all aspects of the agriculture sector, and to design

and carry out a nationwide agriculture survey. A fundamental objective of the project is to assist the Government of Rwanda to establish an Agricultural Statistics and Analysis Unit (ASAU), and to provide the staff of this unit with the training necessary to generate agricultural statistics on a continuing basis for the purposes of planning and policy formation. During the 5-year duration of the project, the Census Bureau will provide technical assistance in virtually all aspects of survey implementation, data processing and analysis.

BuCen assistance during FY80 was primarily in the areas of project design and preparation. The Project Identification Document was written during the first quarter of the year and gained AID/Washington approval in February. In May, the project paper design team met to draw up the Project Paper. The project paper has since passed through several reviews and was submitted for final approval early in FY81.

Since the survey also aims to produce statistics on farm size and production, a special effort has been made to develop and pretest new methodologies in objective measurements of area and production of major crops. Using census data from the Gatovu region in Rwanda, an on-the-job training exercise in data coding and transcription was inducted. A program of on-the-job training in data processing was designed around these data for two Rwandans attending the ISPC training program. In addition to writing edit and tabulation programs, they were introduced to system design concepts and the idea of team programming. When analyzed, the results will be of special interest and utility to project staff and the Ministry of Agriculture as well as to those at the Agricultural Research Institute (ISAR) who originally collected the data.

BuCen technical assistance during FY81 will be primarily in the areas of questionnaire construction and pretesting, sample design and selection, preparation of training and interviewer manuals, software installation and instruction, and interviewer training. In terms of long-term training, three ASAU staff members will be enrolled at ISPC during FY81 in the areas of sample surveys, statistics, data processing, and agricultural economics. (See page 32 for a more comprehensive discussion of this project.)

Status: ongoing

e. <u>Senegal Evaluations</u>

At the request of USAID/Dakar, we provided a methodological expert to assist the Mission in the design and administration of a survey of beneficiaries of four ongoing projects. The four projects were Cereals Production, Small Irrigated Perimeters, Eastern Senegal Livestock, and Rural Health Services Delivery.

The objective of the survey was to describe the respective projects' beneficiaries and to document the extent to which the project objectives concerning the beneficiaries have been achieved, and to explore the perception and acceptance of the projects by the beneficiaries. The survey is part of a joint USAID/GOS evaluation of the four projects called the Joint Assessment. This assessment, in turn, forms the project-level basis for joint USAID/GOS planning activities to take place June - November 1980.

On TDY in April 1980 we worked with USAID/Dakar and representatives of AFR/DP and AFR/DR on the development of a conceptual framework for the beneficiary component of the evaluations. A data collection approach was developed which could be expected to provide the necessary data within the time frame and personnel resources available. A BuCen/USAID team worked with their counterparts in the GOS to make sure the approach was mutually agreeable for data collection. Guidelines were developed for the operational definition of variables, development of tabulation plans, questionnaire design, sampling procedures and analytical plans. All of these operations were carried out jointly.

The surveys were completed by the GOS counterpart, Ecole Nationale d'Economie Appliques (ENEA), and their results were reported in the final report of the Joint Assessment. Time was a major constraint in this evaluation, as only 2 or 3 months were alloved for planning, conducting, analyzing and reporting survey results. However, because the effort to work cooperatively with the GOS on the evaluation was successful, the Mission plans to continue this type of work on selected projects.

Status: completed

2. ASIA

a. Bangladesh Rural Electrification Evaluation

The purpose of our assistance in this project was to help the host-country counterpart, the Rural Electrification Board, in developing an evaluation plan and implementing it over the life of the project. At the request of the Asia Bureau, a draft scope of work was prepared for anthropological examination of potential project effects and impacts. This was to be one of the first steps in evaluation planning. During and after an initial TDY to Bangladesh, an evaluation plan was drafted and revised. Some preliminary investigations of sampling schemes and data processing requirements were made. Discussions were held with Asia Bureau concerning evaluation issues and our role in the evaluation. A followup TDY was planned, but was postponed several times due to unavailability of the counterparts. The followup TDY never took place, but based on our last communication with the Mission, the evaluation was being implemented by Mission staff, the rural electrification board and local contractors.

Status: completed

b. Indonesia Northern Sumatra Regional Planning

In this project, we are assisting the prime contractor, Planning and Development Collaborative International (PADCO), in developing an information and reference system to be used for development planning purposes.

The majority of the work so far has dealt with the information system. In line with this, we have drafted information flow procedure documents for the province of Riau and a short workshop was given on development of an information system. In October 1980, BuCen conducted a workshop on data evaluation concentrating on data from the province of Riau. The workshop concentrated on the Regional Gross Domestic Product showing problems that exist with the current data and how the data could be improved.

Status: ongoing

c. Indonesia Rural Electrification Evaluation

Our work on this project began with class sessions with Indonesian evaluation teams from the Directorate General of Cooperatives (DGC) and the National Electric Power Agency (PLN). Initially, these class sessions were oriented towards the development of an evaluation capability within DGC and PLN, while planning for an overall evaluation of the project. In February 1980, a change in AID priorities called for reorienting our efforts toward the rapid collection of evaluation data for the two demonstration areas of the project. These areas had been electrified in advance of the other areas to be electrified.

In response to this need, we devised a plan and schedule which would produce an evaluation report covering one of these demonstration areas, Klaten, by April 1981. We prepared for a survey of households and commercial establishments in the Klaten area. Analytical table plans and a questionnaire for the survey were developed. The questionnaire and some of the field procedures were tested in Klaten during July. Test interviews were conducted by members of the counterpart teams from PLN and DGC. During November 1980, staff from PLN will again function as interviewers in the full-scale survey of the Klaten area, which was electrified over one year ago.

A system to process the data will be implemented in Washington with the assistance of two Indonesians from PLN. These individuals attended a course on how to use the Census Tabulation System (CENTS) tabulation package given in conjunction with the Surakarta Water Project. They will be involved in writing edit and tabulation programs and in production processing of the data, which will be completed by February 1981.

The survey and analysis will concentrate on uses made of electrification at the household, commercial and community levels.

Status: ongoing

d. Indonesia Rural Roads Project Evaluations

Our activities for the evaluation of three road projects, the Jagoravi Highway Project, the Aceh Road Betterment Project and the road subproject of the LUWU Development Project, began during FY80. In January, our staff conferred with staff from the Indonesian Directorate General of Highways (Bina Marga) at the request of the Mission. We outlined our approach to project evaluation which emphasizes institutionalization of the capabilities necessary to plan and implement these studies. Bina Marga expressed great interest in establishing this evaluation capability within its own organization.

We began conducting class discussion sessions with a group of participants in late January. These classes were continued in May and September. The team of participants completed some reading and planning assignments between the May and September meetings. By the end of September classes, the team had drafted an approach to the evaluation of the Jagoravi Highway Project which included some secondary data collection activities and some small-scale primary data collection activities. The evaluation they foresee will concentrate heavily on actual implementation of the project and the use of the highway by private and commercial vehicles.

Status: ongoing

e. Indonesia Surakarta Water Project Evaluation

At the request of USAID/Indonesia, BuCen advisors are working with Indonesian counterparts in the Ministry of Housing, Urban Development and Sanitary Engineering (Cipta Karya) to develop the institutional capability to evaluate the health impacts of a major water project. In addition to quarterly trips by BuCen staff to Indonesia to conduct seminars and assist in development of evaluation methodology, the Indonesian counterparts came to BuCen headquarters to work with the various specialists in developing the questionnaire and survey procedures for the baseline survey. Progress on institutional development has been impressive and the Indonesia team is now prepared to play a major

role in collection and analyzing the information for the impact evaluation. (See page 33 for a more comprehensive discussion of this project.)

Status: ongoing

f. Philippines Provincial Water Project Evaluation

At the request of the Mission in 1976, we began assisting a local research institution to develop and implement an evaluation of the Provincial Water Project. The project was designed to improve the water systems in five large provincial cities. The issue at hand was whether the water system improvements would result in health impacts for the populations of the project areas.

By late in 1978, the focus on our assistance in the evaluation was shifted to the staff of the Local Water Utilities Administration (LWUA) which was responsible for both project implementation and the supervision of the evaluation. After a baseline survey was completed during 1978, the tasks of analyzing the data and planning and implementing further surveys were gradually taken over by an evaluation team formed with the LWUA. During the past fiscal year, the LWUA evaluation team prepared and implemented the first rounds of a quarterly household survey (the interim monitoring survey) which is designed to examine key indicators of water use and health levels in the project areas.

Working closely with BuCen programming advisors, the LWUA data processing staff wrote, tested and implemented a computerized system to edit the quarterly data. Quarterly tabulation programs written in CENTS (CENsus Tabulation System) were also developed by the LWUA data processing staff.

The LWUA team has required progressively less assistance from us in accomplishing their surveys. They have also been developing their plans for analysis of the 1978 baseline survey data and the data from the interim monitoring surveys.

The LWUA team has become a very capable evaluation and survey team, which requests our assistance as their activities dictate.

Status: ongoing

g. Philippines Rural Electrification Evaluation

For several years, we have been providing technical assistance to the Philippine National Electrification Administration (NEA) in the development of a survey based evaluation of the impact of rural electrification in the Philippines. The first report from this effort, based on a survey taken in 1977, was released in mid-1978.

A second survey was taken in 1980, and the advance report for this survey is also available. These surveys collected an extensive amount of data on household characteristics, uses of electricity and sources and uses of energy sources in general. For a more comprehensive report on this activity, see page 34.

h. Philippines Interim Demonstration Project (IDP) Evaluation

Plans for the evaluation of this project, which will provide improvements to many small-town water systems, began in November 1978. The evaluation unit from the Local Water Utilities Administration (LWUA), which was then engaged in evaluating the Provincial Water Project has, with our assistance, planned the evaluation of the IDP.

During the year, five water systems were selected to be studied in order to investigate and measure health impacts resulting from the water system improvements. These five water systems were chosen to be representative of most of the types of systems to be improved, the size of the towns affected, and the timing of the improvements. Household survey questionnaires, manuals and procedures were developed by the LWUA evaluation unit, with our guidance. Our staff developed the complex sampling procedures needed for the survey. The questionnaire and survey procedures were pretested during June and revisions are now being made. Our data processing staff has worked with the LWUA unit to begin preparations of programs necessary for editing and tabulating the survey results. The baseline survey will be conducted during early FY81 in the five cities chosen for the study.

As in the Provincial Water Project evaluation, the LWUA team utilized many of their newly developed skills in the planning and preparation for this evaluation. These skills are in the areas of overall evaluation planning, preparation of survey materials and planning of data collection and data processing activities.

Status: ongoing

i. Thailand Land Settlements Evaluation

At the request of USAID/Thailand, BuCen advisors worked with Mission staff to develop and implement a comprehensive impact evaluation plan for the Land Settlements Project. This project is intended to improve the welfare of the population living in in the settlements through a variety of governmental interventions. The evaluation planning phase consisted of determining the objectives of the evaluation, identifying appropriate quantifiable variables and indicators, and developing an overall methodology for collecting and analyzing the data. The implementation phase began with establishing operational requirements, drafting scopes of work for data collection and data processing contractors, providing technical assessments of contractor

capabilities, and working with contractors to develop specific plans for all activities. The baseline survey was scheduled for January 1981, and an ongoing evaluation monitoring system was scheduled to begin in March 1981. These activities will continue in FY81.

Status: ongoing

j. Thailand Standardized Socioeconomic Survey

Based on recurrent past needs for project planning data, USAID/Bangkok requested that BuCen technicians work with Mission staff to develop all necessary data collection materials for a general purpose socioeconomic survey for use in developing project planning information. Specifically, the Mission wanted a standardized survey methodology for collecting small area data, especially agricultural and rural development indicators. These materials would serve as a prototype for further development of a variety of surveys at the subnational level. During FY80, the survey requirements were discussed and refined and the principal parts of the survey documents were developed. During FY81, the survey will be field-tested and the remaining work completed in concert with the data collection contractors. (See page 39 for a more comprehensive discussion of this project.)

Status: ongoing

3. LATIN AMERICA AND THE CARIBBEAN

a. Bolivia Farm Policy

In 1978 USAID/Bolivia developed a three-year Farm Policy Study Project, designed to obtain reliable information on socioeconomic characteristics of rural farm and nonfarm households and to utilize this information to better formulate strategies and policies which would improve programs in the rural sector. The project includes several data collection and analysis activities, principally the Socioeconomic Farm Survey and the Crop Technology Survey. The Ministry of Agriculture has proceded with the major share of the work, supported by a resident BuCen economist and technical assistance in sampling, data collection methodology and data processing. Future work will involve continuation of the data processing assistance and the preparation of methodological and statistical working documents.

Status: ongoing

b. Dominican Republic Disaster Relief

Following the devastation of hurricane David to the Dominican Republic, BuCen provided special tabulations of data previously collected in the Sector Analysis Survey at AID's request. BuCen specialists also provided guidance in the use of existing data to focus the relief effort.

Status: completed

c. Ecuador INEC Statistics and Training

At the request of USAID/Ecuador and UNDP, a BuCen advisor worked with the Ecuadorians in the Instituto Nacional de Estadistica y Censos (INEC) to assess overall training needs and develop a proposal for a UNDP funded statistical training project. The training proposal, which subsequently resulted in a UNDP project, focused on two general objectives: (a) to improve the timeliness and quality of the Institute's statistical programs; and (b) to build the Institute's capability to teach the courses in the future.

Status: ongoing

d. Guyana Agriculture Planning

The overall objective of this project is to institutionalize within the Government of Guyana the capacity to establish and maintain a broad set of policy-relevant baseline data to facilitate the design, implementation and evaluation of programs and projects. A primary vehicle to meet these objectives will be the development, implementation and evaluation of two major surveys: a consumer expenditure survey and an agricultural survey. Using these surveys as a basis for training and organizational development, these activities will result in a major data collection and analysis capability in the Government of Guyana. FY80 work was concentrated on the overall planning and organizational work.

Status: ongoing

e. Guyana Agriculture Planning (Ag. Frame)

At the request of USAID/Guyana, a methodology was developed for identifying a framework for conducting agricultural surveys based on supplementary information obtained in a population census. Using such a framework, low cost and scientifically valid agricultural sample surveys can be conducted in lieu of the considerably more expensive agricultural census. During FY80, the overall methodology was developed and documented,

and the survey was fielded. During FY81, the results will be processed and analyzed and procedures for using the results will be developed.

Status: ongoing

f. Guyana Rural Farm Household Survey

In order to obtain a clearer picture of the economic situation of Guyana farm households, the Guyana Rural Farm Household Survey (GRFHS) was taken in FY79. The purpose of the survey was to obtain reliable national and regional estimates of the following:

-- incomes of rural farm households
-- acreage and production of crops and livestock
-- agricultural programs in progress and services/supplies that are needed for potential agricultural programs

The data were collected by the Statistical Bureau (SB) of the Ministry of Economic Development with the assistance of BuCen and were analyzed by economists from Robert R. Nathan Associates. It fulfilled a requirement for statistical data from the Ministry of Agriculture to use for various policy decisions and from USAID to use for developing programs to assist the poorest sectors of the population.

The work completed on this project in FY79 consisted of planning the sample design and collecting and editing the data. The Guyana National Farm Registry was used as the sample frame from which primary sampling units (PSU's) were selected. A listing was then carried out in the selected (PSU's) for a second stage of selection of farm households. There were 2,284 rural farm households selected to represent about 24,600 rural farm households.

The data collection fieldwork demanded the concentrated attention of the entire survey team for five weeks extending from January 21 to February 23. Forty-two persons were directly involved in the field organization while many other members of the survey organization provided indirect support or observed the fieldwork operations. The clean-up process used only a small portion of the fieldwork personnel and took several months longer with the last call back submitted on June 6.

Training of the Guyanese personnel was an important component of this survey. Not only were personnel trained in Guyana for the fieldwork, but five persons were brought to the U.S. to be trained in the preparation of data for tabulations and further analysis. Two persons were computer programmers, who developed a data processing system to edit and tabulate the data. The remaining three were statisticians, who wrote edit specifications, resolved edit rejects and reviewed tabulations. The editing task was a time-consuming process which took six months.

The computer processing was done in Washington because the machine which is being procured for Guyana was not in place yet. All of the experience gained in Washington can be directly tranferred to projects in Guyana once the new computer is operational.

The success or failure of any survey depends ultimately on the quality of the data collected. Careful and thorough planning in organizing the field operations and rigorous administering of the field and office edits were essential to achieve the desired level of quality.

In FY80, the 400 original tables were produced. Another 84 tables were planned and produced to meet the needs of Robert R. Nathan Associates, the contractor who analyzed the data. The results were incorporated into a report entitled, "The Income and Production of Guyana Rural Farm Households." Also, variances for 149 variables with up to nine types of disaggregations each were produced and reviewed.

The work to be completed in FY81 consists of documenting the survey methodology used in the GRFHS and presenting a seminar in Guyana on survey methodology using the GRFHS as the basis of discussion. The seminar will be for government personnel involved in data collection in Guyana. (See page 40 for a more comprehensive discussion of this project.)

Status: completed (except for documentation and wrap-up activities)

g. Honduras Agriculture Sector

A two-week seminar, attended by key personnel in 11 Honduran government agencies, was presented (in Spanish) in Honduras. The course, which was viewed as a prototype for similar courses to be taught elsewhere, was entitled, "Information Needs and Questionnaire Design."

Status: completed

h. Jamaica Health Information System

This project began in 1978 with a request from USAID/Jamaica to review a failing maternal/child health client data system which had been developed two years earlier. Our report included an evaluation of the present system and several options for improving the existing system and developing new approaches. The option selected by USAID/Jamaica and the Jamaican Ministry of Health (MOH) were the development of a two-component information system which provided the relevant information needed for health care planning and were within the organizational capabilities of the MOH. During FY79 BuCen technicians worked extensively with MOH counterparts, some of whom came to BuCen

headquarters for intensive training, to develop a data processing system for the monthly clinic reporting system and to begin planning the annual survey of in-clinic medical records. During FY80 these activities were continued. In addition, BuCen was asked to assist in drafting an overall plan for a more comprehensive Health Information System. By the end of FY80, the monthly clinic reporting system was a going concern. Although the economic and political problems have temporarily sloved progress on this project, FY81 should see the completion of these activities. (See page 42 for a more comprehensive discussion of this project.)

Status: ongoing

i. Nicaragua Agriculture Census

A team of BuCen and AID advisors traveled to Nicaragua to assist the Instituto Nacional de Estadistica y Censos (INEC) in the development of a work plan for an agriculture census and assess data processing activities. In a subsequent trip, BuCen data processing advisors installed a package of computer software for producing data tabulations (CENTS) and gave a workshop in its use.

Status: completed

j. Paraguay Small Farm Survey

In 1976 USAID sponsored a small-farm household survey to generate data for an agricultural sector assessment. The survey was carried out with the assistance of a local contractor and U.S. Department of Agriculture (USDA) who provided personnel for sample design. BuCen was briefly involved in 1977 in assisting in the design of a computer system to edit the data.

In 1978 BuCen was requested to assess and document the sample design employed in the survey. The services of the mathematical statisticians were also used to specify the crop and farm weights to be used in tabulation, specify the variances and report on the accuracy of the data.

The master file of data was changed to delete some observations and to modify the weights assigned to individual questionnaire records. The variance programs were then rerun on the modified file in order to provide the information needed to assess the accuracy of the data.

Status: completed

k. Peru Agriculture Planning

BuCen and AID advisors assisted the Peruvian officials in the Oficina Sectorial de Estadistica and Ministerio de Agricultura y Alimentacion to develop plans and budget for collecting data on agriculture. Subsequently, BuCen advisors assisted the overall effort by installing a computer software package for tabulating survey and census data (CENTS), conducting a seminar in the use of the software, and developing the methodology and procedures for statistical sampling.

Status: completed

4. NEAR EAST

a. Azores Statistical System

In continuation of some work in population projections done in FY79, a BuCen expert in population projections presented a seminar on population projections to 28 Azoreans. The seminar covered elementary methods of population projections for local areas, with specific reference to methods for island-specific projections. In January 1980, a severe earthquake struck the Azores and all further work was suspended.

Status: no further work is anticipated

b. Egypt Cairo Water Evaluation

USAID/Cairo requested in July 1979 that an assessment be made of the study methodology proposed for a small survey in connection with the Cairo water connection project. Water connections were being planned for upwards of 40,000 households in the greater Cairo area. An Egyptian contractor had been retained to carry out a study of attitudes about the project form the population being services by the water connections. The assess- was carried out and it was determined that an ethnographic study using anthropological techniques was more appropriate to the objectives of the study plan than the originally conceived socioeconomic survey (the latter would have implied highly structured questionnaires, probability samples, etc.). Recommendations were made, accordingly, to the Mission and to the contractors to make a methodological shift of this nature. The recommendations were carried out and a subsequent TDY was undertaken several months later to review the data collection and analysis plans. Further suggestions were made for refining the documentation and improving the analysis.

Status: completed

c. Egypt Development Decentralization I and Basic Villages Services Evaluation

At the request of USAID/Cairo, we developed preliminary evaluation plans for the subject projects. Several discussions with NE/TECH followed concerning overall strategy and evaluation approach. Our involvement concluded with a briefing of contractors concerning the present status of discussions and the remaining issues.

Status: completed

d. Jordan Valley Information System

The original objective of this project was the design of a data collection and analysis plan for integrated project monitoring and evaluation of the numerous projects underway in the Jordan Valley. The emphasis in FY80 was on the processing of the 1979 census of housing and population. This work was an outgrowth of our earlier assistance with the 1978 pretest of the census which took place in the Jordan Valley. Data from the pretest, and the census taken one year later, were to provide two reference points for the Jordan Valley area, in terms of baseline demographic data and a sample frame for the entire country.

The data processing assistance was provided to modify for the full-scale 1979 census, the existing programs and systems developed for the 1978 pretest. We reviewed the existing system with the U.N. data processing advisor in Amman. Most of BuCen assistance was concentrated on modifying the consistency edit for use in the 1979 census. Most of the work took place at BuCen headquarters in Washington.

BuCen also met with and advised the Jordanian Department of Statistics on a variety of data collection and processing questions which arose during the year.

Status: completed

e. Morocco Statistical Services Project

In support of the USAID/Rabat project, "Statistical Services Project," technicians from Bucen have been working with the Moroccan Statistical Office (Direction de la Statistique) in planning and designing the 1982 population census. The FY80 work began with a thorough assessment of technical assistance needs and assistance to USAID/Rabat in the preparation of the technical services scope of work for the census and continued with specific assistance in the following areas: mapping and cartography, data processing, computer hardware and software requirements, and management of printing and publication assembly.

FY81 activity will include planning for a census evaluation through post-enumeration, the use of sampling in the census, the development of quality control methods for the census, and preliminary planning for sampling in intercensal surveys. (See page [illegible] for a more comprehensive discussion of this project.)

Status: ongoing

f. Portugal COCENTS

In October 1979, the National Statistics Institute (NSI) of the Government of Portugal requested that the Generalized Tabulation System (GTS) be installed on their UNIVAC computer. This computer software package was developed by the Census Bureau for its own internal use and is, in many ways, highly specialized to U.S. Census Bureau users. The Bureau would have had to charge a substantial sum of money for the conversion and installation of this package and had no vehicle for providing maintenance of the package and continuing consultation to Portugal. BuCen recommended, and NSI concurred, that the COBOL Census Tabulation System (COCENTS) would be preferable in that it would adequately serve the needs of the NSI and could be provided at no cost to the Government of Portugal. The UNIVAC conversion of COCENTS was thoroughly tested on the Bucen computer prior to its installation in Portugal in October 1980. A three-week course in the use of the package was presented in Portuguese to NSI employees.

Status: completed

g. Tunisia Central Rural Development Evaluation

Assistance was provided to the Near East Bureau to review the evaluation plan developed by Cornell University for this project. The data collection methodology proposed by Cornell was based on a "key informant" methodology. At the request of the Near East Bureau, we began work on a more rigorous data collection methodology; however, this work terminated when it became apparent that the time constraints would not allow for proposed survey validation work.

Status: no further work is anticipated

5. Central Bureaus

a. DS/OST - Software Development

During the past decade, many countries have made major improvements in their ability to collect data, but continue to experience

data processing bottlenecks. This activity is directed toward the widespread needs in developing countries for computer processing capabilities in editing and tabulating statistical data. The specific activities in FY80 included the first stages of a twoyear effort in consolidating and enhancing existing data tabulation softwares (Census Tabulation System or CENTS 4) and developing data editing software (Consistency and Correction or CONCOR). See page 46 for a more comprehensive discussion of this activity.

b. DS/POP - ESCAP Migration/Mobility Surveys

Arising from the concerns with migration, social mobility and, particularly, urbanization, the Economic and Social Commission for Asia and the Pacific (ESCAP, a UN Agency) has organized a multicountry program of national migration surveys. The objective of the effort is to produce national profiles of migration and mobility with a high degree of cross-country comparability. To do this, ESCAP proposed the development of model survey materials to be adapted by individual countries in conducting migration surveys. During FY80, funding from DS/POP was provided for 29 professional person months of work in developing the model materials. An extensive set of materials covering the core questionnaire, interviewer and training manuals, field organization manuals, sampling manuals and data processing manuals were developed and published. Originally, FY81 funding was anticipated for our assistance in conducting the surveys. However, funding for this phase was not provided. For a more comprehensive report on these activities, see page 48.

c. PPC/E - Evaluations

During FY80, our professional staff worked with several of the PPC/E staff in a variety of short-term activities. These activities included guidance to evaluation teams involved in the Bennet Evaluations; development of scopes of work for evaluation contracts; analysis of existing data of water projects; and, general comments and technical review in support of PPC/E activities.

C. Detailed Description of Major Projects

1. Regional Education Analysis

a. Introduction

The Kenya/Regional Education Planning Project has been developing over a period of nearly two years with the objective of enhancing the capabilities of each participating country to identify and understand problems in their educational systems through better data collection, processing and analysis. Because of its relatively advanced technological development, Kenya was chosen to serve as a model and training center for the neighboring countries. The work done so far has been directed first

toward developing a USAID regional project. The long development phase was necessary to develop and implement examples of education planning tools and thereby demonstrate the feasibility and utility of doing analysis in education in Africa. Most of the work so far has taken place in Kenya, using Kenya data, although some work has been carried out in Lesotho and Rwanda. The SEU has provided 28 person months of professional services over the first two years of the project. USAID/REDSO contracted directly for a project coordinator/data analyst and a full-time resident systems analyst.

Through FY80, BuCen activities on the project included the following collaborative work:

(1) Developing survey materials including survey design, sample design, sample selection, and the preparation of questionnaires, manuals and training materials for the first national Post Census Survey of Schools.

(2) Providing practical data processing training in the U.S. for one Kenyan systems analyst/programmer. This practical training involved writing and testing programs for a system to process the Post Census Survey of Schools.

(3) Providing practical analysis training in the U.S. for one Kenyan education statistician. The practical training involved demographic analysis, training in SPSS and BASIC, and analysis of flow models for enrollment data.

(4) Presenting seminars in Kenya on education statistical analysis methods.

(5) Writing and contributing to analytical and methodological working documents on Kenya education statistics, including initial development of the methodology of creating and maintaining a computerized school directory.

(6) Assessing the data collection and data processing activities in education in Lesotho.

(7) Providing assistance in preparation of PID for regional project.

The project development phase will conclude in March, 1981. Meanwhile, a regional project has been proposed to carry on with activities initiated during the project development stage.

In FY81 BuCen staff will finish work already begun with regard to Kenya. If the regional project is approved for FY82, BuCen may also be requested to contract three long-term resident advisors for the duration of a three to four year project, in addition to providing short-term professional technical services throughout the life of the project. Approximately 16 person months per year of short-term BuCen services will be requested.

b. Accomplishments of the Pre-Project Phase

Institutional Improvements. The pre-project work done in Kenya specifically for Kenya has been called, "The Kenya Education Sector Analysis." The Kenya Education Sector Analysis, established to improve the collection, processing and analysis of educational statistics, is based in the Central Bureau of Statistics (CBS) which conducts and processes national surveys for most major government ministries. Since 1974, when it was first computerized, the Annual Census of Primary and Secondary Schools has been carried out by the CBS on behalf of the Ministry (now Ministries) of Education. In the eighteen months of the pre-project phase, changes in the data collected through the Annual Census and processed by the CBS have contributed significantly to both institutions.

Improvements in data processing are noteworthy. An entirely new system for processing education statistics more rapidly, accurately and efficiently has been designed, tried out, further developed and documented. All operations from the initial receipt of the forms through final validation have been amended and systematized to eliminate sources of error and expedite output. A more stringent system of range and consistency checks has been instituted, and the entire validation process redesigned and simplified. In contrast to the pre-project period, when validation was a three to six month exercise, it now is possible to obtain final tabulations within a week after receipt of all census returns. The new systems make less use of computer time--an important feature in terms of cost to the government as well as the convenience of the data users. All requests for additional tabulations currently are accommodated the day they are received.

The Kenyan counterpart of the project's systems analyst was sent to ISPC for training and then was given special counterpart training at SEU in educational programming. Staff at CBS have been trained in the use of all new procedures and have contributed to their modification and refinement. The end-product, a system which is technically viable, suited to and workable within the Kenyan context has been extensively documented in the following manuals: Uses, Contents, Programmes to Update a School Directory; Computer System for Processing Census of Schools and Teachers; Manual for Computer Systems for Census of Schools and Teachers. Two surveys initiated by the project as complements to the Annual Census seek to improve the quality of data and to collect additional information. The Post Census Survey provides data on the margin of error and misreporting of the Annual Census and allows estimation of seasonal variations in enrollment during the school year. The End-of-Year Enrollment Survey will allow more accurate assessment of the loss in enrollments over the entire duration of the school year.

The newly designed and more comprehensive Annual Censuses of 1979, 1980 and 1981 will give the Ministry of Education a significantly

improved tool for planning, management and administration, as well as analysis of the educational system. There is first of all the expanded scope and detail of the information now obtained in the Census. The 1974-1978 Censuses looked primarily at enrollments and teaching aids. The more recent censuses, developed jointly by the Ministry and the Project, yield data on many other aspects of provision, costs, teachers and students. Building, classrooms, facilities, equipment, amenities, available texts (for primary) and subject taught (for secondary), and a breakdown of all fees are all covered in the never censuses. Teachers are considered in greater detail than previously, with information now obtained on each teacher's age, sex, experience, qualifications, specialization, subjects, and citizenship. The basic facts on the age-sex composition of each primary and secondary class is now supplemented with information pertinent to student retention, repetition and migration.

The expansion of the Annual Census into a vehicle to meet the information needs of all sections of the Ministry is now a major accomplishment of the pre-project phase. Previously, the Annual Census had been primarily for and used by the Planning Unit, with other sections undertaking ad hoc and often duplicative surveys at will. This situation had long been perceived as unsatisfactory both by the overburdened school heads and district officials and by the officers at national levels who slowly received carelessly completed questionnaires. he idea of a single comprehensive survey for all departments is becoming increasingly popular: beginning in the coming year the Inspectorate will eliminate two customary surveys, since the required data can now be taken from the census tabulations. The concept of a rationalized data base is developing: the Ministry has recently requested the Examinations Council and the Teacher's Service Commission to adopt the school codes developed by the project so that the additional information from their files on examination performance and the movement of teachers can be combined with school census statistics when desired.

The new processing systems developed by the project make possible valuable extensions in data disaggregation. Beginning with the 1980 Census, as a result of the new system of school codes, it will be possible to disaggregate all data to the entire range of administrative units within the nation. This permits an intensive examination of all aspects of education within any administrative unit - from a province to a sub-location - and also comparisons between administrative units at all levels.

A related innovation is the use of the master computer files as a national directory of schools. The School Directory will be a data bank about all schools identified in the census, allowing quickly retrievable information about any school, and also the swift identification of all schools in a given category. In the future, it will be possible, for example, to generate lists (by name, address and location) of schools by type (such as all

boarding schools, or all girls' boarding schools) and also to identify (again by name, address and location) schools which are "overcrowded" or "understaffed."

The availability of information of increased specificity particularly concerning the sub-district levels will augment several government policies and programs. The government has placed increasing emphasis on district-level information systems and planning. The project decision to produce a summary of the information collected by the Census on the status of education within each district for distribution to the Ministry's District officials and the District Development Committee (responsible for approving all self-help activities in a district) usually anticipates a subsequent decision taken by the Government to establish District Information and Documentation Centers to provide to districts the information required for the decentralized planning and administration which the government hopes to promote. The Ministry of Education will begin to mount an extensive in-service training program for field staff such as provincial and district education officers in the coming year. The disaggregated census tabulations have been recognized to be an excellent source of material for these courses, and plans are underway to develop teaching materials on the basic elements of data interpretation relevant to the responsibilities of education officers.

An intargible, but extremely significant, outcome of the work to date has been the realization among the members of the Ministry, who have had contact with the project of the widespread underutilization of data. The project has been approached to help improve the school registers and also to prepare short analyses on questions of immediate need. The idea of using the new, improved census as a means of creating "data consciousness" and increasing skills of data use has been raised at several points in recent months. The activities of the pre-project phase provide the necessary base for these developments.

2. Rwanda Agriculture Survey and Analysis Project

The purpose of the Agriculture Survey and Analysis Project is to develop an institutional capability in the Rwandan Ministry of Agriculture and Livestock to collect, process and analyze data on all aspects of the agriculture sector, and to design and carry out a nationwide agricultural survey. A fundamental objective of the project is to assist the government of Rwanda in establishing an Agricultural Statistical and Analysis Unit (ASAU) and to provide the staff of this unit with the training necessary to generate agricultural statistics on a continuing basis for the purposes of planning and policy formation. Since improved agriculture and increased farmer income are primary goals of USAID involvement in Rwanda, a reliable system of agricultural information is an essential component of project planning, management and evaluation.

SEU involvement in the project began in the spring of 1979 when BuCen staff members were invited to assist in the design of a broad-based nationwide agricultural survey. During the five-year duration of the project, BuCen will continue to provide technical assistance in virtually all aspects of survey implementation and analysis, with primary emphasis on the development of Rwandan capabilities.

BuCen assistance during FY80 was primarily in the areas of project design and preparation. The Project Identification Document was written during the first quarter of the year and gained AID/Washington approval in February. In May the project paper design team met to draw up the Project Paper. The Project Paper has since passed through several reviews and is expected to be submitted for final approval early in 1981.

Since the survey also aims to produce statistics on farm size and production, a special effort has been made to develop and pretest new methodologies in the objective measurement of farm size and crop production.

Pretesting and other preparatory activities will run through the end of CY81, when the Pilot Survey Phase of the project is expected to take place. The Full Survey Phase will begin one year after the pilot and will comprise the final years of the project. Using census data from the Gatovu region in Rwanda, an on-the-job training exercise was conducted in data coding and transcription. These data were then used as the basis for a data processing program for the Rwandans in training at ISPC; when analyzed, the results will be of special interest and utility to project staff and the Ministry of Agriculture as well as to those at the Agricultural Research Institute (ISAR), who originally collected the data.

BuCen technical assistance during FY81 will be primarily in the areas of questionnaire construction and pretesting, sample design and selection, preparation of training and interviewer manuals, software installation and instruction, and interviewer training. In terms of long-term training, three ASAU staff members will be enrolled at ISPC during FY81 in the areas of sample and survey methods, statistics, data processing and agricultural economics.

3. <u>Indonesia Surakarta Water Project Evaluation</u>

In July 1978, we were requested by the Mission project manager to design and implement a comprehensive evaluation of the health impacts of the Surakarta Water Project. The Mission was familiar with our ongoing evaluation of a water project in the Philippines and requested that similar emphasis be placed on institutionalization of evaluation capabilities within host-country counterparts. Arrangements were made with the project implementing agency, the Directorate General of Housing, Urban Development and Sanitary Engineering (Cipta Karya), and a team of four Cipta Karya professionals were identified for the evaluation team.

In May 1979, collaborations between BuCen advisors and the Cipta Karya team began. Since the Cipta Karya team had no previous evaluation experience, the collaborations took the form of quarterly in-country seminars, during which course material was presented, followed by structured assignments for the team between seminars. The seminars began with developing evaluation concepts and an overall analytical plan and continued with detailed training in survey development.

The design which emerged from these training and planning sessions called for a close examination of the city residents' use of water provided by the Surakarta Project. In particular, five separate groups, which would receive different levels of water service, would be examined in terms of their uses of the project water and health characteristics. The evaluation plan called for a baseline survey to be conducted sometime after introduction of improved water service. The units to be surveyed were households in five study groups and one control group which would not receive project water.

The evaluation would also look at the quality and quantity of water provided by the Project. A separate phase of the evaluation would concentrate on the actual construction of the Project, the difficulties and delays encountered and any project design modifications.

During the summer of 1980, the Cipta Karya team members worked in Washington on the development of the survey questionnaire and related materials. A baseline survey pretest is scheduled for February 1981, and Indonesian contractors have been enlisted to conduct the pretest and baseline survey interviews and to process the baseline survey data. Technical support of these activities will be provided as needed. Thus far, we have instructed the data processing contractor in the use of our tabulation package, CENTS, which we also installed on their computer.

During our association with the Cipta Karya evaluation team, we have observed their growth in terms of their ability to design, plan and implement the evaluation. They have always had full responsibility for the evaluation and its activities. They are now taking the lead in performing the necessary planning tasks, making arrangements for evaluation activities and monitoring the work of the contractors.

After the surveys are conducted and the data are processed by the contractors, an analysis will be done by the evaluation team and reports will be prepared. We will continue to provide any assistance to the team and its contractors as required.

4. Philippines Rural Electrification Evaluation

a. Introduction

Although AID-funded rural electrification programs have been implemented in a number of developing countries, prior to 1975

no comprehensive information had ever been collected about the socioeconomic response to rural electrification. Studies which had been done tended to focus on engineering or management aspects of electrification, supplemented in some cases by sketchy information about "beneficiaries" in the areas initially electrified. BuCen involvement in applying survey research to rural electrification in the Philippines originated in the need for a comprehensive profile of the socioeconomic impact of rural electrification, with particular emphasis on the "rural poor."

The survey research project began with several goals:

-- the development of comprehensive data on the socioeconomic characteristics of households that connected versus those that did not connect.

-- the identification of the uses made of electricity and the changing pattern of use over time.

-- the identification of the extent to which rural electrification reached the "poor majority" as opposed to upper- and middle-income groups.

-- the magnitude of demand for electricity.

In addition, the survey research project was designed as an institution-building activity. All too frequently, past information gathering efforts had been conducted by expatriate contractors and had provided little benefit to host country organizational units. Consequently, the decision was made at the beginning of the survey effort to place overall responsibility for the survey research effort in the National Electrification Administration (NEA) and to support NEA's effort with extensive training and technical assistance from the U.S. Bureau of the Census.

The implementation history of this effort and the status of the continuing survey efforts are covered in the sections below. The highlights of the effort are:

-- Two major nationwide household surveys have been largely completed: the 1977 survey results have been published (June 1978) and the 1980 preliminary survey results have been drafted;

-- Using BuCen technical assistance and training, the surveys were largely designed and carried out by the Program Control Office of NEA;

-- In addition to the data available in the 1977 and 1980 survey reports, extensive data is available on rural energy use which could support energy analysis or the design of future projects in this area.

b. Description of the Surveys

1. 1980 Household Survey

The 1980 survey was a sample survey of about 6,000 households selected in a sample design that provided representation of both electrified and nonelectrified households at both regional and national levels in several analytical groupings. The survey included inquiries concerning:

-- electrification status of the household;

-- the quantity and cost of electric usage and date of electrification (electrified households only);

-- an energy use profile with detailed inquiries about availability of and expenditure for various kinds of energy and about the kinds of energy used for various household activities;

-- income and occupational data;

-- size and composition of the household;

-- several socioeconomic indicators, such as house construction materials, water source, ownership of various items, etc.;

-- attitudes and perceptions about the cost and quality of electric service;

2. 1977 Household Survey

The 1977 survey covered essentially the same topics as the 1980 survey. Originally intended as a baseline survey covering recently electrified areas, the survey included about 3,000 household interviews. The sample design provided for nationwide representation of areas electrified in 1977. To provide estimates of nonelectrified areas, in 1977 the sample was supplemented with a judgmental sample of households in towns that were "matched" in terms of population size, electrification status, percent of population that was urban, and geographical location. More rigorous probability methods were used for the sample design of the 1980 survey to provide, at one level, estimates that would be comparable in geographic scope to the 1977 survey and, on the other hand, estimates representative nationwide of the characteristics being studied.

The 1977 data were published in July 1978 by NEA. For the final 1980 report, the 1977 data will be retabulated to correspond to the more extensive detail in the 1980 report and published with an analysis of the changes between 1977 and 1980.

c. Institutional and Survey Development

During the 1975-1980 period, the Program Control Office of NEA, and its predecessor offices, evolved from a small group of professionals with no survey research experience into a unit capable of carrying out two major survey efforts. Although a significant amount of staff turnover was encountered, the fact remains that the bulk of work was carried out by NEA and, at this writing, the Program Control Office is planning studies of business uses of electricity using survey research methods which will take place with minimal technical assistance. In the following sections, the course followed by NEA's institutional growth will be discussed.

The evaluation began with the development of concepts and concerns to be examined during the course of the study. It is worth noting that many of the current issues in rural electrification -- and, in fact, the evaluation issues currently being discussed in the Bennet Reports, etc. -- have largely evolved since 1976. At the time the issues of concern were being decided and the first survey was being designed, there were no clear issues to guide the development of the content of the surveys. In addition, there was very little background information about similar efforts in other countries. Consequently, an early effort was made to anticipate the kinds of socioeconomic responses that might follow rural electrification and might be of concern in project evaluation. With NEA professionals playing a major role, discussions were held with a variety of experts including engineers, social researchers, government officials and AID staff experienced in other rural electrification projects. Based on these discussions, a list of concerns was assembled that formed the direction of the evaluation and the basis of the first survey content. Throughout this effort, NEA efforts were supported by periodic technical assistance TDY's by BuCen staff to train the NEA staff in various aspects of evaluation design and survey operations.

d. Survey Implementation

The questionnaire for the 1977 survey was developed by NEA professionals with BuCen support. The implementation of the 1977 survey effort was performed by a Philippines survey research contractor with experience in household surveys. After NEA had completed contract negotiations, BuCen technicians worked with NEA staff and contractor to develop comprehensive training and fieldwork manuals and subsequently participated in the survey pretest. After all survey materials were pretested and the survey sample was developed, the contractor team went into the field to conduct the listing and interview fieldwork. Following the fieldwork, a second contractor, with responsibility for data processing, carried out most of the required data processing work. Data processing problems in the final stages resulted in the work being transferred to Census Bureau headquarters to complete the tabulations of the survey data.

The results were returned to the Philippines, where NEA produced the first statistical report in the effort. When the 1977 survey report was released in July 1978, it was one of the few times that a major evaluation, involving a major survey research effort, had been successfully completed by host-country professionals.

After the 1977 survey was completed, preparations began almost immediately for the second survey, which was originally planned to take place in February to March 1979. Several delays occured which would have resulted in an April to May survey. The consensus at the time was that the second survey should be conducted during the same months of the year as the first survey in order to avoid distortions in comparisons that would arise from seasonal variations. Therefore, the second survey was postponed until February to March 1980. With the added developmental time, the survey content was reconsidered and modified based on the 1977 experience and additional inquiries were added to obtain an energy source and use profile. During this period, two professionals from NEA came to Washington, D.C. to work intensively with BuCen staff in the development of survey materials. The additional time was also used to develop comprehensive training materials to assure interviewer performance.

The second survey was fielded in February to March 1980. The first phase involved the preparation of household listings for the sample areas. In each of the 337 barangays that had been selected for the sample, sketch maps of the village were drawn, each household was numbered and placed on listing sheets, together with basic sampling and identification information, such as electrification status, location and name of the head of the household. The final sample of households was systematically selected from these listings.

The second phase involved the household interviews. Using a verbatim questionnaire, calling for each interview to be conducted in precisely the same manner, the interviewers conducted 6,219 interviews in the 337 barangays during a two-month period. While still in the field, the field supervisors reviewed the interviewer's work for completeness and consistency, requiring, in some cases, that an interview be repeated if the original work seemed incomplete or inadequate. At the conclusion of the fieldwork, the questionnaires were returned to Manila to await transmittal to the data processing contractor.

It was in the data processing phase that several delays took place. After a delay in the selection process, a contractor was selected who proved to be incapable of the somewhat complex tasks required. After several technical assistance TDYs by BuCen data processing experts over a period of several months, (during which period, the contractor largely exhausted the available funds without any real progress past keypunching the questionnnaires), the decision was made to transfer the data processing operation to BuCen headquarters.

By the end of December 1980, the questionnaires and data tapes had been received in Washington and processing work resumed. The first major processing obstacle was the presence of approximately 1,000 questionnaires in the data file with inadequate identification. This problem had been identified and partially resolved by NEA staff prior to the transfer of the data. However, a considerable amount of work remained in a thorough-going validation of the keypunching and preliminary processing done by the contractor. This work was completed and all identification and duplicate problems were resolved in late January 1981. During February, a priority review was made of selected data items to be included in the advance report, following which, data tabulations for these variables were produced.

The review and correction of the survey data is continuing. Although this is a lengthy and, at times, tedious clerical process, it is necessary if reliable tabulations are to result. Based on current analysis of workload, the resolution of invalid and inconsistent data will be concluded in May 1981. At that time, more comprehensive tabulations of the survey data will begin.

5. Thailand Standardized Socioeconomic Survey

In May 1979, the Mission requested our assistance in developing a standardized survey questionnaire and survey methodology which could be used to gather general purpose data for project design and planning, feasibility studies, and project evaluation. Since most of the current development projects in Thailand involve agriculture or provincial development, the survey materials would be directed toward measuring agricultural conditions and status of rural development in small areas.

The survey package to be developed would include a modular questionnaire, all necessary manuals for completing the data collection, data processing programs for data entry, editing and tabulation guidelines for analysis of data. Procedures for sample selection would also be included. All materials were to be produced for use by any research organization in Thailand capable of data collection or research.

The first draft of the questionnaire was assembled and field tested in December 1979. As the pretest results were being reviewed, an extensive expansion of the survey content was requested by USAID Mission staff. It was agreed at that point to redesign the survey effort to cover a broad range of concerns. In the meantime, we met with the Mission and the Thai National Statistics Office (NSO) to determine what assistance, if any, the NSO could

provide in developing plans and procedures for selecting probability samples with the survey package. Following several discussions, it was determined that NSO would not be able to provide assistance during the developmental phase of the package.

Survey data table plans were carefully revised along with the questionnaire during fiscal year 1980. When this was completed, the data collection manuals were produced. This package of materials was then reviewed with the Mission staff. It became clear to the Mission staff that our preparation of a complete package including data processing programs would require more of our time than they wanted to request from AID/W. Therefore, we and the Mission staff agreed that we would take over responsibility for the data processing package.

In October 1980, the Mission selected a contractor to conduct a pretest and pilot study of the survey materials, to process and analyze the pilot study data, and to produce a final survey package. The questionnaire was tested by the contractors with our assistance in November 1980. The questionnaire is now being revised for a second pretest in January 1981. Following that pretest, the questionnaire will be finalized, the manuals will be revised, and a full-scale pilot study will be conducted. We have assisted the contractors in designing the sample for the pilot study. We will continue to provide technical support to the contractors in refining and finalizing the survey package.

6. Guyana Rural Farm Household Survey

In early 1978 AID/Washington requested the Surveys and Evaluation Unit of the Bureau of the Census to provide technical assistance in the planning and implementation of a national farm household survey in Guyana. The impetus for conducting the survey came from two sources: the Guyanese Ministry of Agriculture (MINAG) and USAID/Guyana. The Guyanese expressed an urgent need to obtain regional and national estimates of production on key non-export crops. The Ministry of Agriculture was interested in collecting data to evaluate government policies in the areas of agricultural commodity pricing, farm credit, and provision of adequate levels of inputs to the farming sector. At the same time AID required data that could be used to identify the rural poor population targeted for its agricultural assistance programs.

It was decided to attempt to collect data in one survey which would fulfill all of these needs. While the data requirements of MINAG and AID overlapped to a large extent, they also suggested different units of analysis; farm-level production data were required by MINAG and household-level income data were needed by AID. In early planning discussions involving BuCen, AID and MINAG, a definition of a farm household was developed that would satisfy both objectives and would also be operationally feasible. Households operating more than one farm

were also considered as one farm household for the purpose of enumeration. Separate farming operations run by members of the same household were treated as one farm in filling out the questionnaire. Households in the selected primary sampling units were listed in the fall of 1978. The listing forms were subjected to an extensive office edit and the population of farm households eligible for inclusion in the sample was identified. A second-stage sample of 2,284 farm households was then selected.

The data collection operation took place in January and February of 1979. The field staff for the listing and data collection operations were provided by the Statistical Bureau of the Ministry of Economic Development. The Bureau of Census provided extensive technical assistance to the Statistical Bureau and MINAG in all areas of survey design and implementation including definition of objectives, sample design and selection, design of the questionnaire, development of forms, procedures and reference manuals for listing and data collection, training of field and office staff, and overall quality control. The data were keypunched in Guyana. The questionnaires and data tapes were shipped to Washington for processing at the Bureau of Census.

Until the data processing phase began, all survey work had been done in Guyana. Guyanese counterparts in MINAG and the Statistical Bureau had primary responsibility for most activities, with technical assistance from BuCen staff. The opportunity for Guyanese counterparts to learn new approaches to data collection and to gain valuable experience by working with BuCen staff was an important, if somewhat less visible, objective of the survey. In order to continue this process, five Guyanese were brought to Washington to work on the computer editing, imputation and tabulation of the data. The Guyanese team included a computer systems analyst, a junior programmer, two statisticians, and an agricultural economist. The Guyanese had primary responsibility for the edit while BuCen was largely responsible for the estimation procedures, imputation methods tabulations and variance calculations. A fully edited data tape and about 360 tables were produced in six months. Robert R. Nathan Associates, the AID contractor responsible for data analysis, published an analysis based on the data in early 1980.

Copies of the tables and technical information for their interpretation were delivered to MINAG and other Guyanese Government agencies in the fall of 1979. MINAG has already used the results of the survey for policy-making purposes and has initiated further studies based on the data. A development that is closely related to the apparent success of the survey is the recent establishment of a five-year Agriculture Sector Planning Project in Guyana. With funding from AID, the project is designed to take an integrated approach to the development of an agriculture planning capability based on reliable and timely statistics. Many of the counterparts with whom BuCen worked in the Rural Farm Household Survey are playing key roles in the project.

Follow-up work on the Rural Farm Household Survey is presently continuing. Extensive documentation on the survey methodology is being drafted at BuCen to be published during 1981. Selected statistical tables from the survey will be published in Guyana. The methodology employed in the survey was the basis of a seminar presented jointly by Guyanese and BuCen staff in early FY81. The objective of these follow-up efforts is to take advantage of the valuable experience gained in the Rural Farm Household Survey in order to develop the skills of Guyanese statisticians and planners in other government agencies, as well as the Statistical Bureau and MINAG.

7. Jamaica Health Information System

a. Background

November 1978 marked the beginning of BuCen's involvement in what came to be called the Jamaica Health Information System. We were asked by the USAID Mission to Jamaica and the Ministry of Health (MOH) to evaluate a failing Maternal/Child Health (MCH) Client Data System that had been developed two years earlier. Based on our assessment of the problem, several options were presented for developing a new monitoring mechanism and information system for Primary Health Care (PHC). Following a review of these options with other in-country health experts, the Ministry of Health and USAID selected two options, and collaborations between BuCen and MOH began. Unlike the predecessor system, the new system was conceived largely as an instutionalization project, wherein a major share of the development responsibility would be carried by MOH.

From the outset, the information system was conceived as a phased, two-part process. Part One would involve the development of a system that, on a monthly basis, would monitor health centre performance and workload and look at key indicators of quality of services. This system would assist MOH staff at all levels in the areas of supervision, staff distribution, program efficiency and improvements, etc. Part Two would attempt to deal with data needed less frequently, such as data used for program evaluation, policy changes, resource allocation, assessment (to a limited degree) of patient health status, and regional/international reporting. This system would involve an annual survey of in-clinic medical records.

All of FY79 was spent in the development of the Monthly Clinic Summary (MCSR) System. This involved working with the Jamaicans in: specifying monthly data needs; translating these into quantifiable variables; designing data collection instruments (including pre-test materials, training documents, etc.); and designing computer programs for tabular reports.

The 11 person months of staff time utilized that year were covered almost entirely by the central HSSA funds. But, in late FY79, a PASA was executed between BuCen and the Mission to continue project development work during part of the following fiscal year.

b. FY80 Activities

Work in FY80, then, was a continuation of the on-going activities. But, in addition to that work, BuCen was asked to assist the Mission in drafting a plan for a more comprehensive Health Information System (HIS) component for the MOH. This plan would be included in a proposed Four-Year Health/Nutrition Sector Development (HNSD) Project, under consideration by the Mission for FY80 (second half) funds.

During the first quarter of FY80 (Oct.-Dec. 79) BuCen staff worked with the Jamaicans on the final stages of the MCSR System. Activities included: (1) finalizing changes to data collection forms and training documents; (2) training all relevant health centre staff; (3) finalizing and installing computer programs; and (4) setting up central office procedures for forms receipt, editing, keypunching, etc.

The second quarter (Jan.-Mar 80) encompassed work in three major areas: (1) monitoring the island-wide start up of the MCSR System; (2) beginning the development of Part Two of the information system (Annual Survey of Health Centre Records); and (3) working with the Mission in drafting the HIS component of the Project Paper (PP). Because these activities would be overlapping during the course of a few months, the Mission requested longer-term, in-country technical assistance from BuCen. A survey statistician was assigned to Kingston for 10 weeks.

Monitoring activities and PP work proceeded well and close to schedule. However, the development of the annual survey of in-clinic records encountered complications and delays. The Annual Survey required, by definition, the availability of patient (medical) records at health centres. It had not been discovered earlier that these records either did not exist or were not standardized throughout Jamaica. Therefore, the first step of development had to be the creation of standardized records for MCH services. Arduous collaborative efforts--involving all levels of health care delivery staff, central Ministry Managers and BuCen advisors --yielded draft forms. But, final approval for pretesting these was not obtained immediately due to content (few but key) disagreements at the decision-making level of the MOH.

April to June, the third quarter of FY80, saw little activities as a result of various problems. The impasse on the draft forms was not resolved. Ministry resources became more limited due to a need for

national economic austerity. The Mission was told by AID/W that the HNSD Project would not receive FY80 funds. Local staffing problems reached a critical level. But, a strategy restatement session with key MOH officials in June opened the way for some progress in the last quarter of the year.

In the fourth quarter (July-Sept.) the draft patient record forms were approved for pretesting, with changes that required some redesign and redrafting. Yet, the worsening economic situation in the country (translated here to mean no funds for printing forms) impeded further action. As planned, though, a mid-year (calendar) review of the MCSR System was conducted in July. Recommendation for changes in the output tables were made by both central Ministry managers and field staff. This marked the beginning of a process that is to continue into FY81 as the MCSR is further refined.

c. FY81 Activities

In FY81, BuCen expects to continue being involved in this project. Even if the HNSD Project is not approved, remaining PASA funds will cover approximately 4-5 person months of assistance. Over this period, BuCen will help the Statistics and Information Services Office of MOH and the Central Data Processing Unit (CDPU) adjust the MCSR output tables to incorporate some of the changes that have been recommended. In addition, survey statisticians will work with the Jamaicans on patient records drafts, training documents, and on the training itself for the pretest of the forms.

If the HNSD Project is approved, then BuCen can expect an increased level of participation; approximately 17-18 person months of assistance rather than 4-5. This time would be invested in the further development of Part Two of the information system (e.g., designing the annual survey itself and pretesting the instrument), in addition to carrying out the activities outlined above.

Even if progress goes slowly in FY81, BuCen involvement has been valuable and successful. The Jamaican MOH has an operational health centre information system. Two staff members have been well trained and are working effectively in data processing. Ministry managers and field staff have been made more aware of the value of both adequately specifying their data needs and properly utilizing this data in supervising staff and monitoring programs. Moreover, a methodology has been developed that has the potential of being applied to other countries and other sectors--a challenging prospect for the future.

8. Morocco Statistical Services Project

a. Background

While the ideas for this project began during late FY79, it only came to fruition as a result of considerable developmental work during FY80.

In the spring of 1979, two representatives of the Direction de la Statistique (DS), Secretariate de'Etat au Plan et au Developpement Regional, Government of Morocco (GOM) came to Washington to study aspects of census work in preparation for their 1981 Population and Housing Census. During that same period, USAID/Morocco was developing a Project Identification Document (PID) for a project to support more timely production of reliable statistics in Morocco.

Once the objectives were further refined by the Mission and the GOM, the project purpose was more specifically stated:

> "The project purpose is to provide a flexible data base and analytical capacity which can support specific project requirements in agriculture, education, employment, health and population, low income housing, and public services. A subpurpose or objective of the project is to improve the quality of census and survey data, the speed with which it becomes available and the form in which it is presented, over previous census and survey efforts of ten years ago."
> (Statistical Service Project Paper, p. 1)

b. <u>FY80 Activities</u>

During FY80 BuCen's work evolved around two different types of activities. First, staff and consultants were used in clearly identifying DS technical assistance needs and in helping the Mission translate these needs into a viable technical services scope of work. On a second level, we became involved in the actual rendering of assistance in areas identified as priority.

In the first quarter, a BuCen-AID/W technical team traveled to Rabat to conduct an indepth study of DS needs. At this time, special attention was paid to their requirements in computer hardware and software because DS felt its 1971 census publications problems had been related to a weakness in this area. The team's report helped in designing the Project Paper (PP), formed the basis for developing the technical assistance work plan, and provided guidance for computer hardware/software procurement.

In the second quarter, a consultant from the Bureau's Geography Division visited Morocco to review DS special problems in census mapping and cartography. His findings were instrumental in further specifying technical services and equipment needs.

At the end of that quarter, two staff members from our data processing group worked with Moroccan counterparts installing COCENTS (software tabulation package) on the Honeywell computer at DS. In addition to installation, the BuCen team held a two-week workshop to familiarize Moroccan programmers with the components and uses of the package. This workshop was conducted totally in French and included the use of practical exercises as part of the instruction plan.

During the third quarter, another needs-identification visit was scheduled. The Bureau arranged for a visit by a printing consultant (from the Defense Mapping Agency) who was to identify census publication bottlenecks and recommend equipment which would effectively eliminate these. Simultaneously, our staff worked with Mission counterparts finalizing the details for the offical contract document (PIO/T) for BuCen technical assistance services to the project.

In the last quarter, drawing on the expertise of its World Census Staff and their consultants, BuCen organized and conducted a Census Mapping Workshop especially tailored to Moroccan needs. Both DS and the Mission requested that this workshop be held prior to the start of fieldwork since this area had been identified as one of the weakest pre-census components at DS. As with the data processing classes, BuCen was able to arrange for the sessions to be conducted in French and to include both classroom and practical exercises.

c. FY81 Activities

Morocco's Population and Housing Census has been delayed to July 1982. This postponement will allow for a more effective level and pace of assistance. BuCen involvement in FY81, anticipated at approximately 18 person months, will include work in technical assistance activities such as sampling for early census reporting, installation of two computer software packages (SPSS and CONCOR) for expedient tabular processing, designing a post enumeration survey to estimate census undercoverage and conducting a Morocco-specific POPSTAN workshop for staff training in preparation for the July 1981 Pilot Census.

The successes that we have had to date are not by accident; they are the result of careful planning from the outset. By having worked with both DS and the Mission, first identifying the problems and needs, and then outlining the best mix of technical assistance and equipment required to resolve these, BuCen has been able to insure that its services be properly utilized and be provided at a level which best serves DS staff in particular and the project as a whole.

9. Software Development

For more than a decade, the Census Bureau has played a major role in the development and worldwide distribution of computer software for census and survey processing. The importance of this work in enabling developing countries to achieve timely data processing is, in part, measured by the fact that over 90 countries use CENTS and COCENTS (which are described below) in their national statistical programs. The highlights of the FY80 work in this area include major progress toward consolidating and enhancing existing software based on the experience gained in the last several years and the establishment of funding and administrative arrangements for the Census Bureau to serve

as a repository and distributor of software for census and survey applications. A review of the activities during the past decade may help to place these events in perspective.

a. CENTS/COCENTS Development

During the 1960 round of population censuses, major improvements were made in many developing countries in the data collection (enumeration) phase of census taking but major bottlenecks emerged in the data processing phase. Owing to the widespread need for basic population data and the recognition of the widespread problems in data processing, AID provided funding to the Census Bureau to develop generally usable software for tabulating census data for the 1970 round of population censuses. Two packages were developed: CENTS (CENsus Tabulation System), which was written in IBM assembler language to keep execution time and core requirements to a minimum, but is only useful on IBM equipment; and COCENTS (CObol CENsus Tabulation System), which was written in COBOL and can be installed on a broad variety of equipment.

In addition to the extensive use made of these software packages in the 1970 round of census, many statistical programs in developing countries have made use of CENTS/COCENTS for survey applications. The World Fertility Survey (WFS), for example, made extensive use of COCENTS. During the 1970's, BuCen data processing specialists and host country technicians gained extensive experience and insight into the kinds of modifications and enhancements that would be useful in expanding the developing countries' capabilities in data processing. Whenever possible, the various suggestions were incorporated, and several enhanced versions of CENTS and COCENTS were developed and released during the past 10 years. However, many of the desired improvements could not be implemented without a major redesign of the system.

The major steps toward completion of the redesign of the CENTS/COCENTS system were made in FY80. The principal concerns in the redesign are: (1) establishing a common command language for CENTS and COCENTS; (2) improving the methodology and overall structure of the system to increase both execution speed and maintainability; (3) enlarging and clarifying the system documentation; and (4) implementing many new features that will either extend the system's capability or simplify user coding requirements.

Present work scheduling calls for completion of the operational aspects of the new package (CENTS 4) in May 1981, and distribution of CENTS 4 by September 1981. We have already received requests from 6 countries for CENTS 4 (Philippines, Thailand, Nepal, Indonesia, Panama and Morocco.)

b. CONCOR Development

The CONCOR package (CONsistency and CORrection system) is a set of computer programs that provide users with extensive capabilities in editing and correcting census data files. The need for computer editing programs arises from the fact that, as a result of imperfections in the enumeration and data entry phases, survey responses are sometimes missing, invalid or inconsistent with other responses. Editing survey files to identify such problems and providing a mechanism for automatic correction are often difficult tasks, especially for organizations with minimal experience. CONCOR provides a generalized approach to data editing that, by simplifying the mechanics of data editing, improves the effectiveness of the limited technical expertise in statistical offices in developing countries. The present version of CONCOR, "COBOL CONCOR Level 2.1," was completed in FY80. This version, which is available for installation on many types of computers, is fully compatible with the CENTS 4 tabulation package.

c. Census Bureau Role as a Software Repository

Beginning in FY81, the Bureau of the Census will be funded by AID to serve as a repository for computer software for censuses and surveys. With the evolution of a variety of computer equipment and, no less importantly, the evolution of the statistical bureaus in developing countries, the need is critical for effective documentation, maintenance, adaptation and continued development of a software system that has become a world standard for survey processing.

10. ESCAP Mobility/Migration Survey

a. Introduction

The ESCAP Mobility/Migration Surveys are collaborative efforts between SEU and the Population Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). The surveys are the cornerstone of a larger project called "A Comparative Study of Migration, Urbanization and Development in the ESCAP Region" sponsored by ESCAP. At the present time, seven Asian countries are participating in the project: Thailand, the Philippines, Malaysia, Korea, Indonesia, Sri Lanka and Pakistan. The project is divided into three phases:

1. Analysis of migration, urbanization and development using existing data sources (primarily the most recent population census);

2. Indepth analysis of population movements using national migration surveys to collect detailed information; and

3. Utilization of the research findings from phases 1 and 2 in policy formulation and program development directly related to control of population movements.

SEU involvement has centered on Phase 2 of the project -- the national migration surveys. Specifically, SEU has provided technical assistance to ESCAP and the participating countries in the areas of:

-- development of prototype materials
-- survey planning
-- sample design
-- implementation and evaluation of a pilot survey
-- definition of technical assistance requirements

b. Project Origin

SEU initially became involved in the project when ESCAP requested six months of assistance for the development of a standardized data processing system for the national surveys. We responded (by cable and in person), outlining our normal method of operation, and in August 1979, the ESCAP Project Director visited Washington for discussions with SEU and AID personnel. The products of this visit were a commitment by AID's Office of Population to fund 30 person months of our assistance in fiscal year 1980 and a comprehensive scope of work for SEU activities.

SEU assistance was to take place at two levels:

-- The regional level (in collaboration with ESCAP-Bangkok)
-- The national level (that is, directly to the participating countries)

Fiscal year 1980 activities were to be concentrated on regional level assistance, most importantly the development and testing of prototype survey materials and procedures. It should be noted that an important component of the project design is the collection of high quality data that are comparable across countries. This implies a degree of uniformity in sample design, field and office procedures, training materials and plans for tabulations. This, in turn, implies a sample design, field procedures, etc., that are of sufficiently high quality and relevance that individual countries will not need to make modifications other than those required by national differences/characteristics. For these reasons, it was felt that sufficient time should be devoted to the development of comprehensive materials and procedures that were of the highest possible quality.

c. Project Implementation

1) Regional Level

Prior to his August 1979 visit, the ESCAP Project Director had already drafted a prototype Core Questionnaire, Tabulation

Plan, and part of an Interviewer's Manual. We proposed modifying the Interviewer's Manual and developing, in draft form, supporting model manuals to reflect the range of survey operations to be considered in carrying out a multi-country data collection operation. The manuals drafted were:

-- Survey Organization and Monitoring Manual
-- Sample Design Manual
-- Supervisor's Manual
-- Editing Manual
-- Coding Manual
-- Data Processing Manual

The above documents were presented at the project's first Advisory Committee Meeting held in Bangkok in November 1979. (The Advisory Committee is composed of the participating countries and is the United Nations' legislative body in charge of of the project.) Following the Advisory Committee Meeting, SEU personnel participated in a small working group established to revise the Core Questionnaire based upon the Committee's recommendations. The next steps were to finalize the supporting manuals and plan a pilot survey that would serve to test a wide range of the survey's operations and procedures. The pilot survey was conducted in May/June 1980 in cooperation with the National Statistics Office (NSO) of Thailand. Using a core group of experienced NSO trainers, supervisors and interviewers, the pilot survey resulted in further modifications to the materials tested. Following these modifications the prototype manuals were published for presentation at the Project's Second Advisory Committee Meeting (Bangkok, November 1980) and circulated worldwide. By the end of 1980, seven survey manuals had been published:

a) Survey Organization and Monitoring
b) The Core Questionnaire
c) Manual for Interviewers
d) Manual for Supervisors
e) Manual for Interviewer Trainers
f) Sample Design Manual
g) Manual for Office Editors and Coders

Two additional manuals, "Guide to the Development of a Data Processing System" and "The Tabulation Plan" are scheduled to published in early 1981.

2) <u>National Level</u>

Although the focus of our fiscal year 1980 assistance was at the regional level, planning visits were made to the Philippines and Korea, the first countries scheduled to implement the survey. The purposes of these initial visits were twofold: first, to discuss with our future counterparts

the scope of SEU national level assistance that would be available during survey implementation; and second, to provide assistance to the persons drafting the country project proposals to be submitted to UNFPA for funding.

d. Current Status of Project and Future Activities

The regional phase of the project has been completed. The Core Questionnaire and supporting manuals--many of which were tested during the pilot survey--were found acceptable by the project Advisory Committee and are now awaiting country adaptation prior to survey implementation. All of the participating countries have established tentative survey dates, but these dates depend upon obtaining UNFPA funding. None of the countries, as yet, have officially submitted project proposals to UNFPA to secure such funding, nor is it clear that the project is viewed as a priority item by the governments of the participating countries. At the same time, future SEU involvement in the project appears to be doubtful. Central funds were not available to continue our assistance beyond fiscal year 1980, meaning that future assistance will have to be funded by country missions or other sources.