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Population Technical Assistance Project

**EVALUATION OF THE OFFICE OF
POPULATION'S PARTICIPATING
AGENCY SERVICE AGREEMENT
WITH THE U.S. BUREAU OF THE
CENSUS (1989-1994)**

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CENSUS (1989-1994)**

by

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**Fieldwork
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Glossary

A.I.D.	Agency for International Development (Washington)
AIDS	acquired immunodeficiency syndrome
BUCEN	U.S. Bureau of the Census
CA	cooperating agency
CAPI	computer-assisted personal interviewing
CARP	Cluster Analysis and Regression Program (a module of IMPS)
CD-ROM	Compact Disc-Read Only Memory
CENTRACK	Census Tracking (a module of IMPS)
CENTRY	CENsus and survey data enTRY
CENTS	(CENsus Tabulation System) (a module of IMPS)
CERPOD	Center for Research on Population Development (Centre d'Etudes et de Recherche sur la Population pour le Développement)
CIR	Center for International Research
CONCOR	(CONsistency and CORrection) (a module of IMPS)
CSO	central statistical organization
DDI	Demographic Data Initiatives (group of A.I.D. activities)
DHS	Demographic and Health Surveys
ESA	East and Southern Africa
GIS	geographical information systems
HIV	human immunodeficiency virus
IDB	International Data Base
IMPP	Integrated Multiregional Population Project
IMPS	Integrated Microcomputer Processing System
ISPC	International Statistical Programs Center
ISSA	Integrated System for Survey Analysis of DHS
OCR	optical character reading
OYB	operational year budget
PAM	Population Analysis Using Microcomputers (computer package)
PAS	Population Analysis Spreadsheets
PASA	participating agency service agreement
PC	personal computer or microcomputer
PIP	Population Information Program (project)
PRB	Population Reference Bureau
QUICKTAB	Quick Tabulation System (a module of IMPS)
R&D	Bureau for Research & Development (A.I.D.)
RAPID	Resources for the Awareness of Population Impacts on Development (project)
REDSO	Regional Economic Development Support office
RIPS	Regional Institute of Population Studies (Ghana)
RSSA	resources support services agreement
SIAP	Statistical Institute for Asia and the Pacific
TFR	total fertility rate
TRS	table retrieval system
U.N.	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

USAID
WCA
WHO

United States Agency for International Development (Mission)
West and Central Africa
World Health Organization

Project Identification Data

1. **Scope:** Worldwide
2. **Project Title:** Demographic Data Initiatives
3. **Project Number:** 936-3046
4. **Contract Number:** DPE-3046-P-CA-9005-00
5. **Critical Project Dates:**
 - **Contract Signed:** April 1, 1989
 - **Project Assistance Completion Date:** March 31, 1994
6. **Project Funding:** \$7,383,200
7. **Mode of Implementation:** Participating Agency Service Agreement between the Agency for International Development, Bureau for Research and Development, Office of Population, (R&D/POP), and the U.S. Bureau of the Census (BUCEN)
8. **Geographic Scope:** Worldwide
9. **Contractor:** Bureau of the Census
Washington Plaza II
8905 Presidential Parkway
Upper Marlboro, MD 20772
10. **Subcontractors:** Tulane University
11. **A.I.D./Washington Project Manager:** Elizabeth Schoenecker
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Washington, D.C. 20523-1819
12. **Previous Evaluation/Reviews:** Management reviews were carried out on July 20, 1991 and June 17, 1992.

Executive Summary

Since the late 1960s, the Agency for International Development's (A.I.D.) Office of Population has continuously had a participating agency service agreement (PASA), or an equivalent agreement, with the U.S. Bureau of the Census (BUCEN). The PASA utilizes services of two units that conduct international activities: the International Statistical Programs Center (ISPC) and the Center for International Research (CIR). ISPC and CIR have separate PASAs with the Near East and Africa Bureaus and several USAID missions, and CIR has an agreement with the Office of Health. The current PASA is scheduled to end March 31, 1994, and the purpose of this review is to evaluate the work that has been done and to recommend changes for a follow-on PASA.

ISPC and CIR are differentiated from each other mainly in that ISPC provides census-related technical assistance, training, and software, and CIR maintains the International Data Base (IDB), publishes the biennial *World Population Profile* and specific country profiles, does population estimates and projections, develops demographic software, carries out demographic research, and responds to data requests from a variety of users. These two units work closely together in the same facility in Upper Marlboro, Maryland, separate from the rest of BUCEN, and are primarily dependent upon external sources of funding.

This PASA is part of a larger portfolio of four projects known as the Demographic Data Initiatives (DDI). The DDI projects are mainly grouped together for administrative convenience. The BUCEN project is the main source of data for the Population Reference Bureau (PRB), another DDI project. PRB estimates that 85 percent of the numbers in the annual World Population Data Sheet come from CIR. There are no other visible links with the other DDI projects, and it does not appear that the Office of Population has programmed any such links.

Overall, operations under this PASA are very well run and useful. Interviews with the staff of A.I.D. and many other agencies, as well as questionnaire responses from central statistical organizations (CSOs) and country missions, were highly favorable. Strongly positive views were found in organizations that do similar work, such as the World Bank and the Statistics and Population Divisions of the United Nations. The few exceptions can be traced to a lack of familiarity with the role of BUCEN — for example, a misperception that PRB, rather than BUCEN, maintains the data file that appears in the PRB Data Sheet. The BUCEN staff reflected a very high level of professionalism, competence, and enthusiasm. Many had constructive and creative ideas about how the project might develop in the next few years. Any deviations from the scope of work for the PASA can be attributed to changing circumstances, such as changes in anticipated mission buy-ins and operational year budget transfers and appear to be acceptable to the Office of Population.

The evaluation deals with four major kinds of activities. The first to be considered, although it is a relatively small part of the present PASA, is training of foreign nationals, mainly professional or managerial staff from CSOs. Students are nominated by their CSOs and funded by either the PASA or the local USAID mission. ISPC has recently revised the curriculum for its classroom and computer lab facilities in Upper Marlboro into a modular format, consisting of breaking longer courses into short self-contained components. It is recommended that the modularization be completed, so that students can have a combination of short courses that best meet their needs, and that the trend toward short-term training (of a few months' duration) be continued. Costs can be further cut by distance-learning and shifting more training to developing country sites, such as United Nations regional training centers.

Second, the PASA includes technical assistance, also intended to improve the in-country capability to carry out censuses of high quality. Staff of ISPC make short-term trips to developing countries to work closely with their counterparts on technical issues ranging from management and training to data processing and data analysis and dissemination. This is the activity in which BUCEN holds its greatest comparative advantage, because of the high standards of the U.S. Census operations and the expertise of its staff. It is recommended that technical assistance be expanded in the area of data analysis and dissemination and that there be some consolidation of the training and technical assistance personnel so that both activities will be strengthened.

Third, BUCEN has developed and adapted several computer software packages. The Integrated Microcomputer Processing System (IMPS) is a package written in Cobol that will handle all phases of data processing for a census, ranging from data entry and editing through tabulation. It runs on microcomputers; after a planned translation into a lower-level computer language, it will not require any special compiler. Population Analysis Spreadsheets (PAS) with its accompanying manual Population Analysis Using Microcomputers (PAM) is a microcomputer package that uses census and survey data to develop indirect estimates of various population rates. The manual represents a laudable collaboration with the United Nations and will shortly be published jointly with the U.N. It is recommended that both of these packages be further developed and augmented, particularly to facilitate spatial analysis, sub-national estimates and projections, and census management.

The fourth main area of activity is data analysis and dissemination. Most countries had a census in 1990 or 1991 and are now at a critical point for utilizing the data as effectively as possible. It is recommended that training and technical assistance activities be expanded to promote this activity, with some increase in staff. CIR's own publication series, *Population Trends*, should be expanded. The possibility of a special publication through the Population Information Program should be investigated. Most important, steps should be taken to make the IDB more widely accessible on CD-ROM or eventually on-line.

It is recommended that BUCEN take an even more active role in coordinating with the various United Nations agencies that have similar functions, ranging from needs assessments to technical assistance for censuses to population projections. BUCEN could take the initiative in arranging periodic meetings and joint or complementary country visits.

A.I.D. should be responsive to BUCEN initiatives, many of which will be driven by the need to make optimal use of technological advances during the coming years. BUCEN, in turn, should be more aggressive in identifying work that needs to be done and taking proposals to A.I.D. If possible, BUCEN should be exempted from the priority country strategy. It is important to have good censuses and data for all developing countries, not just the priority countries.

Finally, it is recommended that efforts be continued to obtain core funding for ISPC and CIR from the Bureau of the Census. These units have the potential to provide a technical and database resource that would be helpful for international trade and investment as well as for foreign assistance. This will require approval of the Department of Commerce.

A complete list of recommendations in the report is provided in Appendix C.

1. Project Scope of Work

1.1 Project Overview

The Agency for International Development's (A.I.D.) Office of Population has had a series of agreements for more than 20 years with the U.S. Bureau of the Census (BUCEN) allowing it to utilize services of two units that conduct international activities: the International Statistical Programs Center (ISPC) and the Center for International Research (CIR). The current agreement includes the provision of technical support to implement censuses, the major activity of the ISPC, and the compilation and analysis of demographic data, the prime responsibility of the CIR. In this report, the term BUCEN is used interchangeably with both ISPC and CIR as well as in reference to the participating agency service agreement (PASA) as a whole.

Although the prior agreements were all resources support services agreements (RSSA), the current agreement is a PASA in order to allow for buy-in activities. The current five-year agreement, funded for a total of \$7,383,200, began on April 1, 1989 and runs through March 31, 1994. Buy-ins (\$1,167,000) and operational year budget (OYB) transfers (\$751,000) currently account for about a third of the total \$5,953,000 obligated.¹

The two primary objectives of the BUCEN agreement are as follows:

- To strengthen developing country institutional capability to plan, implement, process, and analyze population censuses. This will be accomplished through training, focused technical assistance, the transfer of appropriate methodological tools and techniques, and improved coordination of donor support for censuses — (the ISPC role).
- To increase the availability of both primary and secondary demographic data. This will be achieved through supporting primary demographic data collection, with an emphasis on population censuses. Steps will also be taken to make this information more widely available through a comprehensive secondary data collection, evaluation, and dissemination program — (the CIR role).

The project is expected to have a substantial impact on the availability of demographic data for planning and population policy formation through focusing on

- key countries (as defined by A.I.D. priority, population policy status, need for support and likelihood of generating other donor input demographic data),
- critical bottlenecks in the census process,
- assistance that generates additional support, and
- donor coordination.

¹Buy-ins are services purchased from centrally funded projects by missions through what amounts to a sub-agreement or contract. Operational year budget transfers are another administrative mechanism used by missions and other A.I.D. Bureaus to buy services from a centrally funded project. These, however, unlike buy-ins, are counted against the core budget.

ISPC and CIR are differentiated from each other mainly in the sense that ISPC provides census-related technical assistance, training, and software, and CIR maintains the International Data Base (IDB), publishes the biennial *World Population Profile* and *Population Trends*, which are country profiles, does population projections, develops demographic software, carries out demographic research, and responds to data requests from a variety of users. The two units work closely together in the same facility in Upper Marlboro, Maryland, separate from the rest of BUCEN.

The purpose of this review is to evaluate the work that has been done under the current PASA and to recommend changes for a follow-on PASA. The scope of work for the assignment is provided as Appendix A and a list of persons interviewed, as Appendix B.

1.2 Demographic Data Initiatives (DDI) Activities

This PASA is one component of four A.I.D. activities referred to as the DDI. The other three components are with the Population Reference Bureau (PRB), the Futures Group (the Resources for the Awareness of Population Impacts Development [RAPID] project), and the East-West Center Program on Population. These activities are bundled together under the DDI label mainly for A.I.D. administrative convenience rather than because of similarities in activities. The BUCEN project is the main source of data for the PRB, which estimates that 85 percent of the numbers in its annual World Population Data Sheet come from CIR. There are no other visible links with the other DDI projects, and it does not appear that the Office of Population has programmed any such links. Because these other DDI activities are with non-governmental organizations, they take the form of contracts or cooperative agreements rather than PASAs, which, like RSSAs, are designed to enable one government agency to use the services of another.

1.3 Support for ISPC and CIR

Both the ISPC and CIR are primarily dependent upon external sources of funding, such as the present PASA. In addition to this PASA, ISPC and CIR have separate PASAs with the Near East and Africa Bureaus and several USAID missions, and CIR has an agreement with the Office of Health. Several USAID missions have bought into this PASA (Niger, Mozambique, Belize, Yemen, and Rwanda), as has the Office of Women in Development. The Department of Commerce (of which BUCEN is a part), the Department of State, and the Office of Management and Budget are among other agencies of the U.S. government that use BUCEN services.

The various users and donors (i.e., organizations like A.I.D., United Nations [U.N.] agencies, and other international bodies that have agreements with BUCEN for provision of services) tend to take for granted central activities such as curriculum development, software development, and the maintenance of the IDB, although they all must be supported through a pooling of external funds. No funding comes through BUCEN for these core activities. None of the clients is concerned with assuring the sustainability of the operation. Rather, it is supported in piecemeal fashion by its various clients, in accordance with fluctuating demand, and operates essentially on a cost-reimbursable basis. Senior personnel are now paid from the overhead account from the various projects. Thus, the BUCEN operation has an unpredictable pipeline and a thin margin of financial stability.

The various PASAs with BUCEN, of which this is only one, are not part of a coherent plan and apparently are never reviewed as a group. They differ in some basic ways, such as the criteria for

providing assistance to a country. Moreover, A.I.D.'s other PASAs have different funding cycles and evaluation mechanisms, and therefore it is often not possible to identify the incremental effect of each PASA, particularly in such activities as the development of software and training modules and the maintenance of the IDB. In this report, activities that can be specifically attributed to this PASA will sometimes be referred to as "DDI" activities. This is the label that tends to be used by BUCEN staff.

In sum, the unique strengths of ISPC and CIR are in the core operations that the Office of Population has been able to access through this PASA and which are supported by the melding of several PASAs with A.I.D., not just this one, and by contributions from several other donors, not just A.I.D. This support is critical to the training curriculum, the expertise of BUCEN's technical assistance (and other) staff, and even more so for the continuous activities of developing software and maintaining the IDB. In short, this PASA benefits from the overall package of support, and vice versa.

1.4 Activities and Performance under Current PASA

1.4.1 Overview

Overall, operations under this PASA are very well run and useful. Interviews with the staff of A.I.D. and many other agencies, as well as responses to a questionnaire sent in connection with this evaluation to central statistical organizations (CSO) and USAID missions were highly favorable. Strongly positive views were found in organizations that do similar work, such as the World Bank and the Statistics and Population Divisions of the United Nations. The few exceptions can be traced to a lack of familiarity with the role of BUCEN — for example, a misperception that PRB, rather than BUCEN, maintains the data file that appears in the PRB World Population Data Sheet. The BUCEN staff reflected a very high level of professionalism, competence, and enthusiasm. Many had constructive and creative ideas about how the project might develop in the next few years.

1.4.2 Activities

The scope of work for the current PASA encompasses five main types of activities, intended to improve the implementation and utilization of censuses in developing countries. These activities are directed toward overcoming the following kinds of problems:

- insufficient planning
- weak technical skills
- delays in data processing and tabulation
- insufficient and tardy data analysis and dissemination
- inadequate donor coordination.

A set of activities has been developed to address each of these problems, as follows:

To deal with insufficient planning for census operations:

1. identification of countries in need of planning support
2. production and dissemination of a census planning brochure, including a timetable of census activities and descriptions of various steps in the census process

3. census planning assessment visits
4. planning workshops
5. provision of computer software and work-study programs on census planning activities

To deal with weak technical skills:

1. workshops and technical assistance visits
2. development, adaptation, and dissemination of materials on census methodology designed to reach countries for which direct technical assistance is not feasible
3. maintenance of long-term Washington-based census training programs and shorter work-study programs on various census topics

To deal with delays in data processing and tabulation:

1. development and dissemination of user-friendly computer software for census data processing tasks
2. ongoing support for computer software users

To deal with insufficient and tardy analysis and dissemination of census data:

1. country-specific demographic analysis workshops
2. technical assistance in designing appropriate materials and strategies for disseminating census results to key audiences
3. addition of an analysis component to the existing BUCEN long-term training program
4. dissemination technical assistance visits
5. evaluation and analysis of existing primary demographic data from around the world
6. updating and maintenance of computerized demographic and family planning data on an annual basis
7. provision of population estimates for A.I.D.'s annual Congressional Presentation and to the PRB for its annual data sheet
8. preparation of the manual, *Population Analysis Using Microcomputers*, with accompanying software Population Analysis Spreadsheets, for use in demographic analysis workshops and for dissemination to statistical offices in developing countries
9. provision of updated regional demographic data for Office of Population to distribute to the regional bureaus, desk officers, and USAID missions
10. response to *ad hoc* information requests from the Office of Population and its cooperating agencies (CA).
11. provision of a biennial publication to the Office of Population entitled *World Population Profile* for dissemination to USAID missions and policy planners overseas
12. preparation and distribution of the *Population Trends* series on specific countries.

To deal with inadequate donor coordination and collaboration:

1. BUCEN functions as technical secretariat for the Interagency Committee on Census Coordination in Sub-Saharan Africa
2. preparation and distribution of a quarterly status report on census activities by individual country
3. provision of technical backstopping in demographic statistics to support Office of Population initiatives identified during the period of the agreement

1.4.3 Performance vs. Scope of Work

Appendix B provides an analysis summarizing the original activities set forth in the project scope of work and relating them to the work that has been done under this PASA. On the whole, there has been a good balance between the two. Discrepancies are partly due to the fluid nature of the scope of work in the original PASA.

BUCEN staff representatives meet regularly with the cognizant technical officer (CTO) from the Office of Population to discuss ongoing work, which includes negotiating occasional changes in the workplan. Workshops, technical assistance visits, and training are particularly likely to be added, dropped, or re-defined. Sometimes ambiguity exists as to whether a specific workshop, etc., fits under one topic or another. Moreover, these categories of work are often affected by mission buy-ins and OYB transfers. A substantial amount of activity was originally planned to be funded by these mechanisms, but the amount actually received from those sources has been much less than expected, and some of the work actually paid for with buy-ins or OYB transfers has differed from that in the scope of work. These changes appear to be acceptable to the Office of Population.

1.4.4 Activities Described in This Evaluation

This evaluation, which covers the first four years of the current PASA, deals with four major kinds of activities:

- training of foreign nationals, mainly professional or managerial staff from CSOs;
- technical assistance, also intended to improve the in-country capability to carry out censuses of high quality;
- development and adaptation of several computer software packages; and
- data analysis and dissemination.

Further details about the evaluation are provided in Appendix A.

2. Training

2.1 Overview

Training is the first topic to be considered, although it forms a relatively small part of the present PASA. ISPC training is of high quality, is well regarded by those who have had it and by those who have sponsored it, and serves a highly useful purpose. Training is provided in all aspects of survey and census design, data collection, processing, analysis, and dissemination to professional and managerial staff from developing country CSOs. Training courses, which traditionally have been three months or more in length, take place at ISPC's training facilities in Upper Marlboro. Workshops, which normally are shorter, are offered in developing countries or in Upper Marlboro. Recently, ISPC has revised its approach to U.S.-based training, breaking it into shorter self-contained segments of between one week and one month.

Students are nominated by their CSOs and funded usually in part by the PASA, by mission funds, or another donor. Relatively few students have been funded by the present PASA. Most A.I.D.-supported students have been funded by missions through the Office of International Training and other PASAs. Like other core project activities, the staff and facilities at Upper Marlboro were assembled from resources provided through a variety of separate agreements that support ISPC (see Section 1.3) and courses contain students funded by a mix of funding sources (e.g., A.I.D., the U.N.).

The quality of ISPC training, regardless of format and duration, generally gets high marks. A significant proportion of trainees (about one-half of those who replied to a 1991, 15-country BUCEN survey of CSOs, former trainees, and donors) reported using "quite a lot" of what they learned.

2.2 U.S.-Based Training

2.2.1 Traditional Approach

Some 350 individuals have received training through the ISPC program during this period of this PASA, out of a total of 6,000 trained since the beginning of this international training program. Relatively few of these students were actually funded by the present PASA. The academic year 1989-90 had the largest number of trainees, 132, declining to 98 in 1992-93. Although trainee distribution reflects no readily discernible pattern by country of origin, regional distribution has been consistent. For the four-year period of this PASA and for each year of that period the largest number of trainees has come from Asia (49 percent) followed by Africa (32 percent) and the Near East (14 percent). Latin America and other regions have supplied the remaining 5 percent.

During this PASA, the U.N. has become more prominent as a sponsor of ISPC training and A.I.D., less. Participant months of training sponsored by the U.N. in 1991 were 140 percent of its 1987 level, whereas A.I.D.-sponsored training stood at 78 percent of its 1987 level.

The major reasons for the marked decline in ISPC training appear to be cost and the long duration of the training, which requires substantial absences from responsibilities in home countries. Costs have risen in recent years, a cause of concern among many donors. Tuition during 1993-94 will be approximately \$2000 per month, and in addition, students supported by A.I.D. receive a stipend of

approximately \$1200 per month. That duration is a separate and equally important issue is suggested by the experience of the Statistical Institute for Asia and the Pacific (SIAP), located in Tokyo, whose training course is 9 to 10 months. It too has suffered a decline in trainees, although both Japan and the U.N. provided substantial core funding to the activity. According to the above-mentioned survey, the preference for short courses was 4 to 1 among donors and 2 to 1 among former trainees. "Nonavailability of staff" due to conflicting responsibilities of their jobs is another frequently cited reason for the drop in long-term training, mentioned by two out of five donors and one-third of the CSOs.

Long-term training, in short, has become too expensive for a significant number of donors. Training sequences of more than three months' duration are out of favor in part because of cost and in part because the supply of applicants is down, as an increasing number of countries will not release staff for longer periods of training. Few donors are prepared to fund such training and fewer and fewer countries are willing to grant leave to essential personnel for the time required.

2.2.2 Modularization and Move to Shorter Course

ISPC has recently revised the curriculum for its classroom and computer lab facilities in Upper Marlboro into a modular format. The modules are of between one and several weeks' duration and cover a variety of specific topics, with accompanying instructional guides and exercises. This activity is suggested in the ISPC Strategic Plan, which noted that "Modularity, standardization, and new technology-based approaches and methods should facilitate [overseas instruction] as well as helping to reduce ... costs to donors." The curriculum for 1993-94 has been organized into three trimesters and a total of 19 different programs, each of which includes from 2 to 13 intensive courses. The courses span eight different areas: computer technology, geographical information systems (GIS) and cartography, data dissemination, census and survey methods, sampling and statistical methods, economic statistics, management, and population statistics. An attractive brochure and calendar have been prepared to publicize the curriculum.

With modularization, students can stay for one short course or for a sequence of short courses (which earlier might have been one long course), depending on their needs, background, and the amount of funding available. Thus, modularization promises to ensure that students have a combination of courses that best meets their needs. In addition, if done properly, a mix of standardized instructional modules should reduce unit and total program costs to donors, provide greater scheduling and staffing flexibility, and facilitate instruction in overseas locations. The availability of well-designed teaching modules also should permit the use of more junior instructors, thus producing further savings in instructional costs. It would seem feasible to test the principal elements of this plan in the time remaining under the present PASA, provided the personnel and resources can be made available.

2.3 In-Country and U.S. Workshops

During the last four years, 19 in-country and U.S. workshops dealing with demographic topics were held. The number of participants, which for the period totals 554, has varied enormously from year to year. In 1992, there were 10 workshops, with 68 attendees.

2.4

New Approaches

The demand for training and workshops has fallen off in part because of the cyclical nature of census work. Most countries carry out their censuses at 10-year intervals in years ending in 0 and 1. After the census has been conducted, a CSO's activities turn more to analysis and dissemination, which may involve fewer staff and may be given lower priority.

The most popular training format, one that most of the donors and more than one-third of the country counterparts would like to see given greater emphasis, is the "in-country workshop." The combination favored by a relatively large number of those contacted features more in-country training along with greater efforts to strengthen the training capacity of institutions with which BUCEN has begun collaborating, such as Center for Research on Population and Development (CERPOD) in Mali and the U.N.'s Regional Institute of Population Studies (RIPS) in Ghana (see Section 3.2). Workshops conducted at ISPC were favored by less than 10 percent of donors and roughly the same percentage of counterparts. Least enthusiasm was expressed for two long-term approaches: combined degree training, which includes a degree program at a U.S. university along with courses at BUCEN, and work study programs, which involve working part-time at BUCEN while taking courses there. These approaches are being deemphasized at present.

BUCEN is looking toward providing more training at overseas locations and in collaboration with developing country institutions, such as U.N. regional training centers, which can be equipped to serve as "franchisees" for BUCEN training packages. BUCEN sees such a move as a way to cut costs; it could shorten the period of training and substantially reduce the travel and per diem expenses of trainees. Such collaborative arrangements might also be more attractive to other donors. In short, this approach would afford a better fit to both the needs and opportunities of the 1990s. Costs could be further cut by "distance learning," learning conveyed from a training center usually by satellite hookup to students in remote locations. This technology could facilitate collaboration with selected foreign training institutions and could make it easier to fit intervals of original and refresher training into work schedules.

2.5

Marketing

Advertising of the workshops and training programs is less than adequate. The number of copies of workshop and training brochures distributed each year appears modest relative to possible interest and those distributed are not getting the attention of many of the persons to whom they are sent. The survey reveals that two out of five donors and over one-fourth of the counterparts did not read last year's brochure. Moreover, over half of those who saw the brochures said they had received them in time to take action if they so desired, but several volunteered that there was not enough lead time for finding and processing applicants.

This lack of emphasis on advertising is an important issue, given the somewhat tenuous financial stability of the BUCEN operation and the desirability of the greatest return on donor investment. In future, it is essential that concentrated attention be given to marketing.

Likewise, BUCEN has a low visibility within the policy-making and statistical communities. The result is lack of "brand recognition" that might help market the full range of ISPC and CIR products, including training activities. One or more brief training modules intended specifically for policy makers, managers, and A.I.D. program officers, including country counterparts, would be helpful to

these individuals and would also improve the visibility of the entire training program. The most important topic for such a module would be the interpretation and utilization of census data.

Recommendations

1. Long-term training should be phased out and greater emphasis should be put on short-term, focused training provided either at BUCEN or through a collaborating foreign institution.
2. The modularization of short-term training sequences with accompanying instructional guides and exercises should be completed and the principal elements of a modular instructional plan field-tested before completion of this PASA.
3. Short-term training should be audience-specific — that is, it should recognize the different needs of policy makers, advocates, and technicians. Each module should have a common core but the emphasis could vary from how a policy maker can benefit from census and other demographic information to what a technician needs to know about how demographic data are produced, scrutinized, adjusted, disseminated, and analyzed. A brief module appropriate for donors, managers, and A.I.D. program officers might also be considered.
4. More use should be made of collaborating institutions abroad as training sites.
5. If the plans go forward to phase out long-term training and to focus on short-term training, a plan should be developed for the best use of the Upper Marlboro training facility. This will mean reevaluating staff requirements appropriate to the revised training plan and will no doubt involve down-sizing of the training staff. The main BUCEN operation could absorb some of the technical and analytic staff (and release them back in time of peak demand) but personnel shifts of this sort require time to accomplish. Unlike private sector organizations, BUCEN must respect the regulations that govern civil service employment and thus program shifts can be unwieldy.
6. The costs and benefits and prospects of distance learning should be examined.
7. The training curriculum should place an increased emphasis on analysis and dissemination of census data.
8. A marketing strategy should be developed for BUCEN products including the components of its revised training program. Arrangements must be made for wide and carefully targeted distribution of brochures on workshops and other kinds of new training programs. Mailing lists such as those maintained by the Population Information Program (PIP) might be consulted in this regard.

3. Technical Assistance

3.1 Types of Technical Assistance

ISPC has a long and highly creditable history of providing international technical assistance to improve the in-country capability to carry out censuses of high quality. Staff of ISPC make short-term trips to developing countries to work closely with their counterparts on technical issues ranging from management and training to data processing and data analysis and dissemination. Technical assistance could also be provided through focused workshops, which would be held for individuals who could not attend standard training workshops and who needed assistance in a specific aspect of census work. Those who have seen BUCEN'S work in the field gave their unqualified praise for the quality of the assistance rendered and the hard work and competence of BUCEN personnel. This is the activity in which BUCEN holds its greatest comparative advantage, due to the high standards of the U.S. Census operations, its cumulative experience, its solid reputation as the premier agency in census work, and the expertise of its staff. The only comparable organizations are the United Nations Population Division and the United Nations Population Fund (UNFPA) which coordinate with one another.

Technical assistance is provided to assist in three main areas of census work: needs assessments, census planning and execution, and analysis and dissemination. Needs assessment involves visits to determine in-country needs associated with upcoming censuses; census planning involves assisting CSOs to design census questionnaires, develop data processing procedures, design tabulation plans, design post-enumeration surveys, and carry out any of the technical aspects of a census; and analysis and dissemination involve providing appropriate audiences with useful information based on the census findings. Under this PASA, technical assistance has been provided for needs assessments (9), for census planning and execution (6), for data processing (16), and for analysis and dissemination (6), or a total of 37 technical assistance activities (see Appendix B). Two-thirds of these visits have been concerned with data processing, the principal area for technical assistance, and census planning. Technical assistance absorbs the greatest proportion of funding in the PASA.

Not included in this count are 70 person-months of technical assistance under the heading of "donor coordination," a variety of promotional, informational, and coordinating activities to resolve funding and implementation problems in sub-Saharan Africa, to organize periodic meetings of the Interagency Committee on Census Coordination in Sub-Saharan Africa, and to participate in various technical and professional meetings and as delegates to international conferences. ISPC technical assistance visits and BUCEN'S role in census coordination have contributed in a major way to leveraging additional support from other donors, missions, A.I.D. bureaus, and priority country funds. Countries benefiting from leveraged funding for census work include India, Peru, and Yemen. Ghana, Ethiopia, and Burkina Faso appear to be likely prospects for the near future.

Continued technological advances in census work, changing requirements for technical assistance as the census cycle of the 1990s progresses, and the renewal of that cycle in another five years or so, will assure a steady and possibly increasing demand for technical assistance throughout this decade. Moreover, changes in the organization of U.N. statistical activities and the renewal of U.S. participation in the work of the UNFPA will place greater emphasis on the coordinating role that BUCEN has played in the past. At the same time, the demand for assistance in data processing is expected to decline as the Integrated Microcomputer Processing System (IMPS) becomes better

known. The highly successful software for census and survey data processing developed under the project by BUCEN/ISPC (see Chapter 4) allows persons with little or no computer experience to contribute to data processing. Training in the system has become a standard part of the curriculum. Thus, there will be a need to shift to technical assistance geared to dissemination and analysis.

ISPC's new strategy includes increasing the participation of training staff and analytical staff in providing direct technical assistance. This is a good move as using staff this way will serve to reduce the costs of operation by reducing the amount of downtime that occurs inevitably as a result of fluctuations and uncertainties in the training cycle. Of equal or possibly greater importance, this involvement, if successful, would deepen the supply of personnel available for technical assistance. Although difficult to implement, such a move should enhance both training and technical assistance activities at BUCEN.

3.2 Developing Country Sources of Technical Assistance

In view of the continuing demand for census work, the relatively higher cost of training programs in the U.S., and a general decline in donor support for census work, the need exists for BUCEN to explore opportunities for foreign collaboration. As noted in Section 2.4, BUCEN has established collaborative relationships with CERPOD and RIPS, including providing training of developing country trainers who in turn can return to their own countries and train census workers in the various aspects of census activities. Such exploration will also lead to the identification of technical assistance needs in new countries (other than those in which BUCEN has worked in the past) because regional institutions have links with nearly all the countries in their respective regions.

3.3 Marketing

As in the area of training, efforts to advertise the potential contribution of BUCEN's technical assistance to A.I.D.'s development agenda are modest relative to the potential usefulness of BUCEN's capacity. As noted in Section 2.5, the lack of U.S. government responsibility for this service is making stronger marketing an essential focus for BUCEN. With regard to technical assistance, as more activities are re-located abroad, it will become necessary to mount a campaign to bring these new opportunities to the attention of in-country users. Likewise, in view of the limited awareness within certain branches of A.I.D. as to the expertise available from BUCEN, it is likely that an important by-product of more aggressive publicity within the A.I.D. community could well be the identification of new forms of assistance and new products that could be made available.

Recommendations

9. The emphasis in technical assistance should be shifted from data processing toward analysis and dissemination.
10. Technical assistance should be directed to increasing the use of, and training in, the improved version of IMPS and other new software under development described in Chapter 4. A special effort will be required to acquaint international and domestic users with the capabilities of the enhanced version of IMPS.

11. Ways should be explored to strengthen collaboration with suitable developing country institutions in preparation for transferring much of BUCEN's technical assistance (and training) to developing country settings. BUCEN should develop its contacts further with CERPOD and RIPS, with a view to augmenting, in particular, the training of trainers.

12. BUCEN should develop new ways to collaborate on technical assistance activities with the U.N. Population Division and UNFPA. Any new agreement between BUCEN and A.I.D. should explicitly recognize these cooperative activities and should cover the requisite time and travel of senior personnel who are involved in them.

13. To the greatest extent feasible, training staff and analytical staff should participate in direct technical assistance.

14. The potential contribution of BUCEN's technical assistance to A.I.D.'s development agenda should be advertised more widely and aggressively.

4. Software Developments

4.1 Introduction

Over the years, BUCEN has been at the cutting edge of technology for data processing, not only to process and analyze U.S. census data but also to develop software for the processing and analysis of developing country census and survey data. This activity was initially carried out on mainframes but has been increasingly designed for microcomputers. BUCEN has produced a series of computer software programs and packages, culminating in two personal computer (PC) packages: Integrated Microcomputer Processing System (IMPS), developed by ISPC, and Population Analysis Spreadsheets (PAS), a demographic analysis system developed by CIR. IMPS is a package written in Cobol that will handle all phases of data processing for a census, ranging from data entry and editing through tabulation. It runs on microcomputers; after a planned translation into a lower-level computer language, it will not require any special compiler. PAS, and its accompanying manual, Population Analysis Using Microcomputers (PAM), offers a microcomputer package that uses census and survey data to develop indirect estimates of various population rates. PAM represents a laudable collaboration between the U.N. and BUCEN and will shortly be published jointly with the U.N.

It is sometimes difficult to draw the line between the development of procedures and analytical methods and the development of computer software to implement them. In most of the topics raised here, the procedures and analytical methods are well enough advanced that it is primarily their implementation through software that remains problematic. For example, in the case of the IDB, the issue is how access to it can be improved through software. Both of these packages could also be further developed and augmented to facilitate spatial analysis, sub-national estimates and projections, and census management.

Methodological research and development represent the taproot from which further, more effective, technical assistance will be nourished. Although donors generally have a preference for off-the-shelf, ready-to-go applications, the availability of state-of-the-art applications is and should continue to be a major goal of the BUCEN enterprise. The state-of-the-art, however, is never static and must be constantly renewed. It could be argued the chief problem confronting the long-term health of BUCEN is the difficulty in finding support for this line of activity from sponsors who, typically, represent circumscribed areas of interest.

4.2 Software for Planning, Tracking, and Implementing Censuses and Surveys

In line with the objective of promoting better census planning by developing country governments (PASA, pp. 12-13), DDI/BUCEN has already produced a brochure for census planning, "Program for 1990 Round of Censuses: Guide to Planning, Training, and Technical Assistance" (ISPC), which contains a timetable of census activities and a description of various steps in the process. It is being disseminated by mail and through workshops.

Other than the IMPS and PAS packages, BUCEN has prepared few software packages for use at the planning, tracking, and implementation stages. BUCEN, both CIR and ISPC, has plans, however, for a number of additional packages. Ongoing activities and plans are shown in the table below.

Current and Planned Software Activities of ISPC and CIR

Census/Survey Activity	BUCEN Software	Time Frame
Planning & Tracking	None	Long-Term
Sample selection*	None	Long-Term
Preparation of forms, manuals, etc.	None	Long-Term
New methods of data collection - computer-assisted personal interviewing (CAPI)	None	Long-Term
Microcomputer data processing system	IMPS	Continuing
Table retrieval system (TRS)	None	Short-Term
GIS/Thematic mapping	None	Long-Term
New methods of data entry - OCR	None	Long-Term
Export of data and estimates for (a) commercial statistical analysis and (b) graphical display	None	Long-Term
Demographic analysis and projections	PAS	Continuing
Sub-national population projections	None	Long-Term

*Not applicable for censuses, except for post-enumeration surveys

Successful project management depends upon creating a comprehensive plan, including the specification of different tasks, their sequence and dependencies, defining milestones (such as the census enumeration, ensuring resource allocations, and so on). Equally, it depends upon tracking the progress of the project once it has begun and making necessary changes in schedules and resources to meet the original or revised milestones. The need for such project management software, which requires the use of Gantt and PERT (Program Evaluation and Resource Tracking) charts, is acutely felt in developing countries. A number of software packages are now available for this purpose, among which Time Line DOS v5 by Symantec Corporation and Project/WIN by Microsoft Corporation are top-rated.

An assessment of commercial project management software packages for use in census planning was suggested in the PASA (pp. 12-13). BUCEN has already adapted one such package, Time Line DOS v4, for planning the 1991 agricultural census in Honduras and the census in El Salvador.

Many countries would benefit from software to select samples using a sampling frame from a recent census or other source and a random number generator. Given the existence of an appropriate sampling frame, such software would greatly accelerate the sample selection process. Another aspect of census work that could readily be computerized is the preparation of questionnaires, manuals, and various kinds of edit checks and specifications, imputations, and so on. The risk of omissions,

conflicting instructions, and redundancies could be virtually eliminated if such documents and specifications were prepared from computerized models.

An interest also exists in computer-assisted personal interviewing (CAPI) techniques, which have been tested by the Demographic and Health Surveys (DHS) project and the World Bank, in a living standards measurement study conducted in 11 countries during 1985-92. CAPI involves the use of a special purpose portable microcomputer and may be cost-effective and widely used by the end of this decade.

Other anticipated software developments include programs for thematic population mapping, census management, instrumentation design, sub-national and reverse population projections. These new products must be widely announced and their installation and implementation backed up by focused technical assistance.

Recommendation

15. Methodological and software development should be continued to improve and simplify censuses and surveys in developing countries. The following activities are recommended:

- a) Develop software for census planning and tracking. BUCEN should prepare a template for census planning and tracking for use in developing countries, not only in population censuses and surveys but also in other population projects. Time Line DOS v5 could be used to prepare a template for census planning and tracking. In that template, the midpoint of the census enumeration period would be taken as 0, and the timings of other census activities would be identified with reference to 0. For example, the establishment of a national census committee might be at time -36 (months), the post-enumeration survey at time +1, the preparation of a preliminary census count at time +2, etc. The template could be used in all countries. It would be a simple matter to shift the time table laterally when the census enumeration date is changed, a common occurrence in some developing countries. Instruction materials and the template could be given wide dissemination for use in planning censuses and surveys in developing countries.
- b) Develop a software program for computerized sample selection from a data base (frame) that includes information from censuses and administrative records.
- c) Design a microcomputer-based software system to develop census forms, interviewer manuals, interviewer training, and edit/imputation specifications. This would augment national capacities in census design and would complement the IMPS system for data processing and the PAS system of demographic analysis.
- d) Consider testing and adapting new data collection techniques, such as CAPI, and new data capture techniques, such as optical character reading.

4.3 Software for Census and Survey Data Processing and Statistical Analysis

4.3.1 Components of IMPS

IMPS, the project's highly successful software for census and survey data processing, was constructed from packages that perform the following tasks: data entry, editing, tabulation, operational control, and statistical analysis. A mainframe version of IMPS is not yet available, and therefore mainframe users must continue to use separate modules of the programs. ISPC has worked to make the package increasingly user-friendly in successive versions. The following are the IMPS modules:

- **Data Entry.** **CENTRY** (**CENS**us and survey data **enTRY**) is a screen-oriented, menu-driven package for developing data entry applications. Originally intended for use in large-scale censuses, usually involving many small, simple questionnaires, it now includes facilities for handling surveys that involve long and complex questionnaires. **CENTRY** is used for data entry, verification, and data modification. It provides statistics on operator performance. Its on-line editing capabilities include checking for valid codes, and when linked to **CONCOR** (see below), consistency checks between responses. **CENTRY** can be used on a stand-alone PC or on a local area network.
- **Editing.** One of the first and best-known data editing packages, **CONCOR** (**CONS**istency and **COR**rection) is a package for rapid identification and correction of invalid and inconsistent data. **CONCOR** can be used independently or in conjunction with **CENTRY**.
- **Tabulation.**
 - **QUICKTAB** (**QUICK TAB**ulation) is a menu-driven package for the rapid production of frequency distributions and tables. It cross-tabulates up to three dimensions and processes 80,000 records per minute on an average PC. Tables produced by **QUICKTAB** are in a pre-specified format. **QUICKTAB** is simple to use and can be learned in a few minutes.
 - **CENTS** (**CENS**us **TAB**ulation **S**ystem) is a package for tabulating, summarizing, and displaying statistical tables for publication. **CENTS** has been used successfully in many censuses and surveys and other activities requiring the production of statistical tables. It is capable of producing tables in virtually any format. The user draws the tables and writes instructions on the relationship between the data and table cells. The instruction set for **CENTS** is almost identical with that of **CONCOR**, and its speed is also similar to that of **CONCOR**. Once tables are defined, they can be produced automatically for up to five geographical levels.

CENTS could be easier for non-data-processing personnel to use with a completely menu-driven user interface. This interface would improve dissemination of census findings outside of CSOs. Additional options for formats and fonts would make tables more attractive for publication. Analysis and presentation of findings would also be improved if graphs and charts

could easily be produced, perhaps through an interface with statistical or graphics packages.

- **Operational Control.** **CENTRACK** (CENsus TRACKing) is a management and control package to help census managers monitor, control, and track the various operations necessary between receipt of questionnaires from the field and data entry.
- **Statistical Analysis.** **PC CARP** (Cluster Analysis and Regression Program) is a statistical package originally developed by the Department of Statistics of Iowa State University in collaboration with the U. S. Bureau of the Census. This package can be used to analyze data from stratified, multistage sample surveys. It calculates totals, means, ratios, etc., as well as estimates of their sampling variances. Sub-population estimates can be obtained by specifying classification variables, which can be crossed with each other. In addition, the PC CARP output presents for each estimate the coefficient of variation, the number of observations, and the design effect. It uses an ultimate cluster variance estimator, i.e., it is based upon weighted first-stage sample unit estimates.

IMPS was originally written in Cobol because that was the most commonly used computer language on mainframes in CSOs. The PC version requires installation of a compiler (marketed by Realia), however, which is relatively expensive and limits the portability of the package. ISPC plans to translate IMPS into a lower-level language such as C.

4.3.2 Uses of IMPS

IMPS is available for use with PCs and has been used or is planned for use in 75 countries for processing population and housing censuses (which provide basic data on size, composition, and socioeconomic status of the population) and in 43 countries for processing surveys on agriculture and farm incomes; economic activity, income, and expenditure; education and literacy; demography and vital statistics; households; and labor force. (Most of these applications lie outside the scope of the present PASA.) IMPS was also used in the World Bank-sponsored study, *Social Dimensions of Adjustment*, which was launched with the objective of strengthening the capacity of governments in the sub-Saharan African region to integrate social dimensions in the design of their structural adjustment programs, by strengthening national planning capabilities, improving the design of social policies and projects, and building appropriate information bases. This program is in operation in over 20 African countries.

Under the current PASA, a number of improvements to IMPS have been made. These include releasing an updated version of QUICKTAB, developing better training materials for the relevant training courses, and the completion of an interface between IMPS and REDATAM, software for data entry and processing developed at the U.N. Economic Commission for Latin America and the Caribbean. Other improvements have been the consolidation of the CONCUR and CENTS command languages; the development of interactive IMPS; and providing for three-way crosstabs, record selection, and weighting in QUICKTAB.

4.3.3 USAID Mission Assessment of IMPS

The Office of Population recently surveyed central statistical offices using a scale from 1 to 5 (1 for unsatisfactory or inappropriate; 2 for somewhat satisfactory; 3 for satisfactory; 4 for very satisfactory; and 5 for extremely satisfactory). BUCEN software and software support received average ratings of 4.2 and 4.1 respectively. Categories 1 and 2 were not returned by any country, and only a small fraction returned category 3. Statements such as these were typical: "[Government census agency] considered the IMPS software to be an important contribution to the capability to produce the ... census" (Botswana) and "BUCEN assistance has been invaluable in increasing the quality and timeliness of our statistical products" (Philippines).

4.3.4 Updating Users

ISPC publishes *Data Line*, a newsletter for keeping in touch with software users, which serves as a pipeline of information exchange on statistical computing by sharing ideas, problems, suggestions, and solutions with readers; it keeps readers up to date on current software, training, and technical assistance opportunities. In the USAID mission inquiry, *Data Line* was uniformly found to be useful except by Burundi. BUCEN should inquire, through the USAID mission in Burundi, the reason for that statement.

4.3.5 Other Systems for Data Processing and Analysis — ISSA and PC-EDIT

Two other systems of integrated statistical software for data processing and analysis are available in the international field: the Integrated System for Survey Analysis (ISSA), developed, also with USAID support, by the Institute for Resource Development to meet the data processing requirements of the DHS project; and PC-EDIT, Xtable, and PopMap, statistical software packages developed by the U.N. Statistics Division under the Software Development and Support for Population Project, with UNFPA support.

ISSA is an integrated, interactive system capable of handling complex surveys and data files, consistent with established procedures and compatible with other systems. It is a modular system, with components that can run alone or as part of an integrated system. The system comprises a designer, a data entry processor, a batch processor, and a number of utility modules. ISSA is a powerful tool for processing data from complex surveys of the DHS type, but it does not have the flexibility of IMPS.

The U.N.'s package, PC-EDIT, is easy to use for data entry, verification, additional secondary editing, data modification, and the collection of statistics on the data entry operation. The data-tabulation software, Xtable, produces frequencies and summary tabulations of censuses, surveys, vital and civil registration records, population statistical databases, and other administrative data. PC-EDIT and Xtable form an integrated high-speed system. Furthermore, Xtable output, when produced in Lotus 1-2-3 format, can be used in the PopMap software (see below). Useful as the U.N. statistical software packages are, they are not yet as fully developed as IMPS, nor have they been used in as many countries as IMPS and its modules.

Thus, IMPS has a comparative advantage over both: It is more flexible than ISSA and it is more fully developed and more widely used than the U.N. packages. Thus, the importance of IMPS cannot be overestimated.

The only significant limitation for the application of IMPS modules is the lack of case study models. Case study models are like tutorials, providing a small set of illustrative data that enable a user to experiment with the options in a computer program. One such, POPSTAN, has been prepared for mainframes, but none is available for a PC. Development of a similar model for a PC would assist in the teaching and learning of IMPS.

4.3.6 Need for Census Mapping

Among the various modules included in IMPS, census mapping is one that is conspicuous by its absence. Such software, PopMap (version 1.1), which is available from the United Nations, is an integrated software package for geographic information, maps and graphics data base management, and computerized population atlas development. It offers the capability of developing custom-made population data bases in a geographical context, the data ranging from demographic, socioeconomic, business and employment, physicians, hospitals, and family planning clinics, women's issues, housing units, etc. Demographic information, for example, can be presented on maps with area comparisons and icons locating relevant facilities for education, health, family planning, etc. Population and socioeconomic data from censuses, surveys, and administrative sources can be entered, stored, and presented in printed reports with computer-generated maps.

IMPS could be improved by incorporating a module on thematic mapping that would allow computerized population atlas development for presentation of data on infrastructure facilities and services (for example, for education, health, family planning) at administrative levels. PopMap could be suitable for the purpose. BUCEN realizes the importance of adapting PopMap and integrating it in IMPS. Following discussions between the U.N. Statistics Division and BUCEN/ISPC, intermediate files have been prepared by the U.N., and it is now up to BUCEN to make the required adaptation.

Rapid advances are being made in commercially developed software for GIS, although these systems usually require higher capacity workstations. During the next few years, it should be possible to develop an interface between IMPS and a GIS package so that more data can be presented in the form of maps.

4.3.7 Enhancements in IMPS

Although IMPS is an excellent system, ISPC's Strategic Plan proposes a number of enhancements. All would serve to make the system increasingly useful. The following recommendation is based partly on the enhancements specified in the Strategic Plan.

Recommendation

16. IMPS should be further enhanced, with the following additions:
 - a) Incorporate, with due acknowledgment, the user-friendly table retrieval system, developed by the U.N. Statistics Division.
 - b) Make the Census Tabulation System (CENTS) more flexible by developing a largely interactive user interface and expanding its capability to include special publication effects in its output.

- c) Eliminate the need for a Realia Cobol compiler to make IMPS fully functional.
- d) Develop methods to facilitate export of census data and estimates to commercial packages for statistical analysis (packages such as SPSS-PC, SAS, and SYSTAT) and graphical display (packages such as Harvard Graphics, Freelance Graphics).
- e) Add functions and features to support automated cartography and interfacing to GIS software systems.
- f) Adapt REDATAM and include it, with due acknowledgement, in the software packages offered by ISPC.
- g) Incorporate at least two case study models on the application of IMPS modules.

4.4 Demographic Analysis and Projections

The Population Analysis Spreadsheets (PAS) software, which analyzes demographic data and prepare projections, is complementary to IMPS. Its accompanying manual, PAM, presents many useful and accepted methods of demographic analysis in the following areas:

- Age and sex composition
- Mortality analysis
- Fertility analysis
- Migration analysis
- Geographical distribution of population
- Urbanization analysis
- Population projections

The survey of USAID missions conducted for this evaluation indicates a continuing need for technical assistance for demographic analysis (including, perforce, the PAS software) in many countries. Such analysis is given high priority after a census has been taken. PAS has already been successfully used in a number of developing countries and has proved an excellent package for demographic analysis. PAS is due to be published by the U.N.

PAS could be considerably strengthened and made more relevant to developing countries with large populations by including a module on sub-national population projections. A computer program exists that does this, the Integrated Multiregional Population Project (IMPP), developed at Research Triangle Institute, which is designed to make population projections (up to 12 sub-national regions; 50 are planned for a future version). Based on the multiregional population projection methodology developed by Andre Rogers and Franz Willekens, IMPP projects the population of all regions simultaneously (hence no inconsistency arises) and works with directional migration flows instead of net migration. The package includes a large number of demographic estimation programs which are

used to prepare the data needed for the multi-regional projection program. It also includes the Rogers-Castro migration model to fit an age distribution of migrants. Efforts are being made by BUCEN, in collaboration with the author of IMPP, to provide training in IMPP in the future. It would also be useful to have in languages other than English.

Recommendation

17. The following enhancements should be added to PAS:
 - a) A capability should be developed for sub-national population projections by incorporating a future version of IMPP within PAS.
 - b) BUCEN should arrange to have the PAM manual translated and published in French (for use in francophone African countries) and in Spanish (for use in Latin America).

5. Data Analysis and Utilization

5.1 Current Activities and Need for Expansion

Most countries had a census in 1990 or 1991 and now have considerable new data on their populations. These data, however, have no inherent value and are only important to the extent that they are analyzed, disseminated, and utilized. Thus, these countries are now at a critical point for utilizing the data as effectively as possible. Chapters 2 and 3 recommend that support be expanded for ISPC training and technical assistance that would assist developing countries analyze and disseminate their own data. This chapter will consist mainly of suggestions of ways in which both ISPC and CIR can conduct or promote analysis and dissemination, in addition to training and technical assistance.

Within ISPC there is very little direct analysis or dissemination. CIR is more active in this way, through its various publications. The center is best known for its biennial publication *World Population Profile*, which was last published in 1991. (The next issue will appear at the end of 1993 but will have a nominal publication year of 1994.) This contains about 50 pages of highly readable text and attractive graphics on trends in population size and growth, components of change (fertility and mortality), population density, and contraceptive prevalence. Rates, counts, etc., in the base year (such as 1991) are compared with their projected values for 2020. The text is followed by two appendices, one containing more detailed tabulations and the other describing the assumptions behind the projections.

The series *Population Trends* is published on an irregular basis and consists of a four-page summary on a "priority" country of the Office of Population. Issues have a standard format that highlights current estimates of contraceptive use. Thus far, four have been published. They have been received with enthusiasm but are not widely known outside of A.I.D. It is assumed that both *World Population Profile* and *Population Trends* will continue to be published and that the frequency of the latter series will increase.

ISPC and CIR work with two different kinds of data. Corresponding to the differences are a variety of types of analyses and groups of users. Some uses are much more pertinent to the needs of the Office of Population than are others. For example, the Office of Population, in preparing targets for a family planning program, may have its greatest need for survey estimates of fertility and contraceptive use levels; its main use of census data may be for numbers of women and population projections. An acquired immunodeficiency syndrome (AIDS) program may have a greater need for census information about population distribution and concentration. Other users within A.I.D. may be interested in surveys that indicate the status of women, child health, etc. The challenge to BUCEN is to develop mechanisms that can serve a wide variety of interests — including those of the Office of Population.

This chapter is concerned primarily with how BUCEN facilitates the application of data to policy and program needs. The overlap with the earlier discussions of training, technical assistance, and software development is inevitable because these are all mechanisms through which data are made more available.

5.2 Data and Analysis Associated with ISPC

5.2.1 Raw Data

The basic format for ISPC data is a developing country census in raw form (with records at the individual and household levels). Data in raw form are the basis for any analyses but are almost never accessible outside the CSO of the specific country, for reasons of confidentiality. Within the country, they are used almost exclusively for the preparation of a standard tabulation plan.

5.2.2 Aggregated Data

Developing country census data can also be structured in aggregated form (as in the U.S. Census summary tape files). This more compact format gives the number of cases in detailed combinations of census variables, aggregated over sub-areas. These subtotals are the building blocks for a wide variety of tables and higher levels of aggregation. This format, with certain conventions, will not violate the requirement of confidentiality and can be dramatically more compact than the raw data. It could be a long-term objective to make data available in summary format, so that a wide range of users could prepare an almost unlimited range of tabulations, but this is not a likely outcome for the latest round of censuses for several reasons, including cost and complexity.

5.2.3 Prepared Tabulations

A third format for developing country census data is a file of prepared tabulations (selected tables stored in a computer file). This is the format that ISPC seems to have promoted most frequently, and it is the one that seems to have the greatest potential for both in-country and international use.

It is currently possible for tables to be prepared at the level of the country as a whole and for sub-regions and other administrative areas and then accessed with the table retrieval system in a wide range of host country government offices, population research centers, universities, donor offices (including USAID missions), etc. Such tables can include the basic distributions of census variables and selected two-way tables, tables with means as cell entries, and some three-way tables, prepared in advance on the basis of their perceived relevance for planning and policy. At the present time, the capacity to do this exists through a combination of both the CENTS program in IMPS and the table retrieval system (see Section 4.3.1). A table retrieval system is being developed by the U.N. Statistics Division, which can access tables showing a variety of combinations of information. This system is being used in this capacity at ISPC but it has yet to be distributed.

Selected national-level tables (and sub-regional tables if feasible) from such a file could be brought together into an international data base (limited to census data and not to be confused with the IDB) that would be useful to a larger community, potentially including commercial users. This data file could be made accessible on CD-ROM or an on-line service within the United States and worldwide, on a cost-reimbursement basis. Since the country-specific tables in such a file would correspond to the kinds of tables that are distributed in printed form through a country's census publications, there should not be any difficulty in obtaining the official approval of each country; indeed, the distribution would provide a service to each participating country.

For such a data base to be useful, it would not be necessary to achieve complete comparability of tabulations. Censuses differ in the questions that they include, in how some variables are categorized, in ethnic categories, etc. Insofar as possible, however, standardization across countries would enhance

the data file. Other useful features would be an easy-to-use menu or index and a text file for each country giving information about the census and an appraisal of the quality of the data. As mentioned, steps in this direction are currently under way.

5.2.4 In-Country Analyses of Census Data

Another data product of ISPC is not data itself but consists of in-country *analyses* of census data, prepared for specific in-country purposes and audiences. Here, the term "analysis" is used very broadly to include the use of census data for descriptive purposes; research on policy, programmatic, or commercial issues; projections; etc. The term, however, implies at least some verbal interpretation, data reduction in the form of tabulations, or statistical modeling, graphs, maps, etc.

Through training and technical assistance, developing countries are currently advised on how to use their census data in a variety of analyses. These include wall charts for schools, brief reports intended for policy makers, lengthier reports with detailed tabulations for economic planners, etc. At present, a staff member at ISPC is specifically dedicated to such activities. This kind of activity is critically important if the investment represented by a census is to be fully justified. Work of this type could be strengthened by the addition of at least one staff member, preferably someone with experience in the private sector or business.

Recommendations

18. In-country access to each country's census data should be improved. ISPC, perhaps in collaboration with the U.N. Statistics Division, should actively and systematically familiarize the central statistical organizations and USAID missions in A.I.D.-selected countries with the advantages and applications of the table retrieval system and the CENTS software. If at all possible, one or both of these packages (and their appropriate data files) should be available to a variety of in-country users, for regional as well as national planning.

19. General (including U.S.) access to international census data should be improved. The following steps are recommended:

- a) The current dissemination activities of ISPC should be expanded, including the addition of one or two staff members, preferably persons with private sector and commercial experience.
- b) Some kind of data base, drawn largely from other countries' most important census tabulations, should be made available by ISPC on diskettes, CD-ROM, or on-line through some distribution network, for general access. The content of this data base would, of course, be limited by the kinds of information that countries would be willing to provide and would not include raw data. Access to the data would require a modest cost reimbursement.

5.3 Data and Analysis Associated with CIR

5.3.1 Description and Utilization of the International Data Base

CIR's International Data Base is qualitatively different from the data files associated with ISPC. The IDB includes data from sources other than censuses, such as surveys; it may include census data after

adjustment for under-reporting and mis-statement, whereas ISPC census files are normally not adjusted; it includes forward projections; and it includes estimates going back in time (at present, the IDB is somewhat limited in this respect but it may be expanded in the future).

The data sources are primarily censuses and DHS surveys but may include estimates from other surveys and vital statistics systems. CIR is a recipient of virtually all sources of demographic data.

CIR keeps the data — mainly in the form of photocopies of a variety of publications — in file folders, organized by countries. Following a regular schedule, each country is reviewed and its age-sex projections are updated on the basis of any new information. The projections and a variety of estimates are entered into a computerized data base. The computerized file is limited mainly to age and gender distributions and vital rates. The non-computerized files include contraceptive prevalence and other information. The label "IDB" refers, in a narrow sense, to the computer file, but in a broader sense, to the more complete archives.

IDB is increasingly used in Congressional presentations and by agencies both within and outside the U.S. government. For example, staff of the PRB estimate that 85 percent of the data for the annual World Population Data Sheet is derived from IDB. The well-received biennial reports, *World Population Profile*, are based upon IDB figures. CIR has recently shifted the cycle on which it updates the IDB in order to be as up to date as possible for the Data Sheet. The data base is used for providing responses to *ad hoc* requests for information from A.I.D. staff. Interviews disclosed, however, that many users of the World Population Data Sheet are unaware that this sheet is mainly derived from the IDB; some even suggested that the IDB is superfluous, given the existence of PRB and the Data Sheet. In addition, many users may not appreciate the careful evaluation and analysis that underlies the IDB.

As yet no effort has been made to establish a linkage between future fertility and future contraceptive prevalence as related to various levels of mean use-effectiveness, although such a linkage would help countries in setting targets for their family planning programs.

5.3.2 Overlap between the IDB and World Bank and U.N. Data Bases

Other users questioned whether it is necessary to have three agencies maintaining an international data base and making projections: BUCEN, the World Bank, and the U.N. This query revealed a common misunderstanding about the nature of U.N. demographic data, estimates, and projections. The demographic data on the recent population censuses are indeed government figures and published as such in the U.N. Demographic Year Book, as also are the vital statistics, obtained from government sources; in the latter case, an indicator of reliability is attached to the rates. In contrast, *World Population Prospects* and *Global Estimates and Projections of Population by Sex and Age*, also published periodically by the U.N., provide estimates (prepared by the U.N. after evaluation) and projections that are internally consistent with one another. The U.N. is not obligated to accept any government figure. It is expected that the World Bank will shortly withdraw from the activity of making its own population projections, in which case BUCEN will be the only agency other than the U.N. which does such work.

Having more than one organization collect and evaluate population data and make projections has considerable value. The different groups can and do provide a check for one another, and such differences as may exist between them can sensitize users to issues of data quality and the assumptions that underlie projections.

CIR maintains a dialogue and exchange of international information on population, mothers and children, human immunodeficiency virus (HIV) infection, etc., with the U.N., World Health Organization (WHO), and United Nations Children's Fund (UNICEF), which is mutually reinforcing and should be continued. Each of these agencies has a different mandate and governing body, periodicity of publication, and lowest level of aggregation; it may not, therefore, be possible to have joint estimates and projections prepared by BUCEN and the U.N. agencies even in the long run.

5.3.3 CIR Method for Preparing Country Population Projections

CIR carries out population projections in a specific country as follows:

First, a baseline age-sex distribution is established, usually from a census. This distribution may then be adjusted for under-reporting and mis-statement. Age is used in single years.

An estimate of the expectation of life and the total fertility rate (TFR) in the vicinity of the base year are also required and may come from a variety of sources. The estimated TFR typically comes from a DHS survey but in some cases DHS results are rejected. For example, CIR has rejected the TFR estimate from the 1990-91 Pakistan DHS on the grounds that it is biased downwards because of the apparent omission of children under five in that survey. Instead, they use a much higher estimate from the Pakistan Demographic Survey, carried out annually by Pakistan's Federal Bureau of Statistics. This kind of critical examination of the data is appropriate in general and is particularly well justified in this instance.

Both the cross-sectional expectation of life and the TFR for a country are projected forward using a logistic curve with an asymptote at some hypothetical level (e.g., replacement fertility in the case of the TFR). The logistic function is typically estimated from two values, the current level and the asymptote. Modifications are made if there has been virtually no change in the observed expectation of life or TFR in recent years -- in such a case, fertility decline is assumed to begin within at most 10 years. Model schedules are used to estimate the age-specific mortality and fertility rates. Projections are then prepared by applying the age-specific rates to the baseline population distribution a year at a time.

The projections are routinely calculated for 50 years but were published in the *1991 World Population Profile* only up to the year 2020. These projections differ somewhat from those of the U.N. and the World Bank in both methodology and results, but all three are similar because they share the basic assumption that in most countries -- although not all -- fertility will converge to replacement level within about 30 years. In view of these differences, there may be a need to evaluate the key assumption that the expectation of life and the TFR follow a logistic curve over time, with fixed asymptotes. Another issue is that the population projections for developing countries are based on the assumption of major future declines in fertility, even in those countries that have not yet begun such declines. The CIR, however, does not always make it very clear to the users of these projections that the projections are based on this assumption and thus correspond to the achievement of a high level of contraceptive use.

5.3.4 Accessing IDB Data

IDB data in raw form, as presently designed, can be accessed with a data base package, but at present only CIR staff have direct access to the IDB. The data base format currently in use does not facilitate international comparisons, which would be the main interest of many users.

IDB data could be made directly available outside of CIR, e.g., to A.I.D.'s Office of Population or to a variety of agencies inside and outside of the U.S. government, in raw or fully detailed form but accessed by a more user-friendly package with hypertext (or on-screen windows that would appear in response to queries) for comments on sources, assumptions, adjustments, etc., making the data more suitable for trend analysis and international comparisons. If developed, it could be made accessible on CD-ROM or on-line.

A wider use of IDB by U.S. government and other agencies has been limited by such constraints as the following:

(a) The computerized IDB does not include immediate access to basic data sources and techniques used in arriving at IDB estimates. For example, CIR estimated the TFR for Egypt to be 5.5 in 1980 and 4.8 in 1988, using DHS data. DHS's own estimates, however, were 5.3 and 4.7 respectively. In this particular case, the two sets of estimates, by DHS and CIR, do not differ markedly; but in other cases, they could and do. It is not clear, from the file itself, why this difference exists.

(b) The data base format and the hierarchical structure adopted do not facilitate immediate availability of estimates for alternative hierarchies. At present, for example, if one wished to compare trends in the infant mortality rate in several countries, each country would have to be called up with a separate inquiry.

Recommendations

20. General access to the IDB should be improved.

a) The IDB should be made available by CIR on diskettes, CD-ROM, or on-line through some distribution network. This format could be updated more frequently than the publication of the *World Population Profile*. It would differ from the ISPC data base in that it would include projections as well as estimates and information on fertility and contraception from a variety of sources other than censuses. Ideally, it would be provided in a hypertext format, in such a way that the user could readily obtain an evaluation and explanation of the information.

b) To facilitate international comparisons, CIR should investigate the use of a more flexible hierarchical format (e.g., the newly introduced Lotus "Improv" spreadsheet format or an anticipated product of Borland Corp.).

21. The IDB should be expanded and the analyses and projections based on it should be modified and refined.

a) The IDB should be expanded to include reported estimates for earlier time periods, for trend analysis. The development of a "reverse population projection" should proceed, but with the understanding that reverse projections must be reconciled with earlier estimates based on old censuses.

b) CIR should review its projection methodology, including retrospective validation and comparisons with World Bank and U.N. approaches. In particular, CIR staff should evaluate the key assumption that the expectation of life and the TFR follow a logistic curve

over time, with fixed asymptotes. This assumption could be tested against alternative functions using the empirical experience of the developed countries and of countries such as Taiwan and South Korea which have already reached replacement fertility.

c) A linkage should be established between future fertility and future contraceptive prevalence and published in the *World Population Profile* and/or other publications. Prevalence would not need to be projected for every country, but a table or graph could be included to relate changes in the TFR to implied changes in contraceptive prevalence, at various levels of mean use-effectiveness.

d) CIR needs to make very clear to developing country users of its population projections that these are based on the assumption of major future declines in fertility, even in those countries that have not yet begun such declines and that they thus correspond to the achievement of a high level of contraceptive use.

22. Dissemination of products and of analyses should be improved, using the IDB.

a) CIR should investigate the feasibility of a publication based on the IDB in the *Population Reports* Series of the Population Information Program (PIP). This could be similar to the recent *Population Report* summarizing the findings of the Demographic and Health Surveys project. It would be necessary to develop some theme to make the findings interesting to a wide audience. For example, a motivation for the report could be that the 1990-91 round of censuses was the most complete and accurate in history.

b) More aggressive efforts should be made to stimulate the use of the IDB within A.I.D. and CAs. This could include the identification of specific individuals and scheduling presentations with them.

c) *Population Trends* should be continued and expanded, but with a more cost-effective method of distribution. Appropriate mailing lists may be obtained from PIP, for example.

23. A set of illustrative analyses should be assembled, prepared, or commissioned. These could deal with topics such as the use of census data to project future needs for elementary schools or the use of census data for marketing in a specific business or industry. As a start, CIR should assemble a collection of analyses that have been carried out in various countries, together with a description for each one of how it was prepared, for whom it was prepared, how long it took to prepare it, and the cost, the response to it, and suggestions (particularly from the specific country) as to how, in retrospect, the analysis could have been even more useful. These items or documents could be regarded as illustrative analyses. Ideally, each such analysis would have been developed in response to a perceived in-country need, but if some obvious possibilities exist that have never been carried out, then ISPC should initiate new analyses. The illustrative analyses could be distributed to the census staff in each country and used in both training programs and technical assistance activities.

6. Management

6.1 Staff of ISPC and CIR

ISPC's staff consists of demographers, mathematical statisticians, survey statisticians, computer specialists, social science analysts, and other professionals. Approximately 28 professionals and 5 support staff have worked part-time on this project. CIR is made up primarily of demographers who compile and analyze demographic data. About 11 professional and 4 to 5 support people work on this project. All members of these staffs exhibited a very high level of professionalism, competence, and enthusiasm. Many had constructive and creative ideas about how the project might develop in the next few years, ideas reflected in the recommendations in this report.

Working relationships between BUCEN and the Office of Population are excellent. BUCEN, however, seems reluctant to put forward new initiatives and to suggest priorities to A.I.D.

The present PASA, especially when seen in combination with the others from A.I.D. and the variety of funding mechanisms for ISPC and CIR, demands a substantial degree of coordination, planning, and management. It seems to be assumed (by A.I.D.) that such management will be provided by BUCEN out of the overhead. The operations appear to be well managed but BUCEN reports that the salaries of the management level personnel are inadequately covered by the overhead from the various projects. The problem is compounded because the success of ISPC and CIR in retaining competent staff has resulted in a top-heavy personnel structure and relatively high personnel cost.

In recent years, due to inadequate funding, BUCEN has reduced its support for staff to attend professional meetings such as the annual meetings of the Population Association of America and the American Statistical Association. This reduction needs to be examined. Professional activities, such as preparation of journal articles and attendance at conferences, are important if services are to remain at the level of the state of the art. These kinds of activities also help to advertise the services of ISPC and CIR.

Recommendations

24. The Office of Population, and other sponsors, such as the Africa Bureau, should consider increasing the funding level to include more, even if partial, funding for some of the senior personnel that are now paid from the overhead account.
25. BUCEN management needs to ensure that investment in staff development is maintained at a high level and increased, if possible.
26. BUCEN should more frequently take the initiative to suggest to the Office of Population new work directions and new uses of technology.

6.2 Management Issues at ISPC

ISPC has serious management problems due to fluctuating demand, an unpredictable pipeline, and a decline in available customer funding in the face of rising unit costs for its services. This situation

is well recognized at ISPC and is being addressed in its Strategic Plan. Among its strong points, the plan proposes to reduce the division of labor between training and technical assistance, i.e., between staff who remain at Upper Marlboro to provide training and those who travel extensively providing technical assistance. The plan is also oriented toward consumers and products, through better analysis and greater dissemination. Although the plan is ambitious, it enjoys enthusiastic support from high levels in BUCEN organization.

Among the management problems recognized by the leadership of ISPC is the high ratio of management and support staff to technical and professional staff. This makes it difficult to accommodate senior analytical staff without burdening them with administrative responsibility. It also tends to limit opportunities for advancement for junior analysts. The proposed solutions for this are to retrain and reassign the present staff, to reabsorb some into the main census operation and, most important, to find new customers — a task that the current ISPC director has set about with apparent vigor. These are all sound initiatives, although there is some question as to how completely and how soon they can be accomplished.

It will also help the situation if ISPC makes a serious bid for multilateral funding from UNFPA should the U.S. agree to restore its contribution to that organization. This could grow naturally out of the collaboration with UNFPA (see Recommendation 12).

6.3 Management Issues at CIR

The technical expertise of the CIR staff is devoted almost completely to maintaining the IDB, doing projections, refining related methods and software, preparing publications, and responding to *ad hoc* requests for data. This technical expertise is also highly relevant to some of the activities of the ISPC, however, and ISPC would benefit if it could occasionally draw on CIR staff. For example, when questions of data quality and possible adjustments arise as part of a technical assistance effort, the views of CIR could be obtained. Also, when ISPC conducts an assessment visit to determine the strengths and needs of another country's CSO, CIR staff could participate in some capacity to evaluate that CSO's technical demographic skills.

CIR already appears to be somewhat understaffed relative to its workload. In view of the new activities that have been recommended in this report, a definite need exists for a few new professional staff positions.

The Office of Population uses the mechanism of a CIR pass-through to fund two of its full-time staff members, neither of whom is closely connected with BUCEN. Although the Office of Population would be understaffed without these positions, this use of BUCEN funds does not benefit the work under this PASA and thus should be examined. For example, it would also be possible to use this mechanism to fund CIR staff who would work in the Office of Population on CIR-related activities. This mechanism has been used to advantage by the Africa Bureau under another PASA.

CIR's management problems appear to be secondary to its need to become better known among potential sponsors and to expand its line of products. More collaboration with the U.N. in its data base, projection, and methodological activities may also suggest opportunities for staffing efficiencies.

The recommendations below would not necessarily have to be funded completely by the Office of Population.

Recommendations

27. CIR staff should participate more fully in ISPC operations, in particular, in ISPC assessment visits. This would call either for some increase in staff or a realignment of current functional responsibilities.

28. The mechanism of a CIR pass-through should be used to assign one or two CIR employees to the Office of Population to assist in the fuller exploitation of CIR's resources.

7. General Issues

7.1 Funding of ISPC and CIR Core Activities

As noted in Section 1.3, ISPC and CIR are totally reliant on soft money, such as the present PASA, rather than more dependable funding. Greater stability in the funding of core activities would facilitate long-range planning and expansion. It would also be of benefit to organizations in addition to the current donors as both units have the potential to provide a technical and database resource that would be helpful for international trade and investment as well as for foreign assistance.

Recommendation

29. BUCEN needs to provide a core level of funding to support operations of ISPC and CIR. This will require the approval of the Department of Commerce.

7.2 Developments in Technology

For the most part, a subsequent PASA would follow the pattern of the current one. Several factors, however, imply some modifications to the specific terms of a new PASA. Even if nothing else were to change, the dynamic nature of technology relative to data handling, new modes of communication, and information dissemination would require modifications in what the BUCEN project does and how it does it. Much of this report, in fact, has been concerned with the implications of improved technology. No specific recommendations will be added under this heading, but it is worth emphasizing — more for the benefit of the donors than for BUCEN itself — that BUCEN should have adequate support to remain at the cutting edge of international training, technical assistance, data analysis, and dissemination.

As noted in Chapter 4, in the time remaining in the present agreement and for the years ahead, BUCEN will need to upgrade its existing software and make it more user-friendly. It will also need to upgrade or develop software for sub-national tabulations and projections, for graphic display, for quick retrieval and dissemination of publication-ready demographic information, for tracking census and survey operations, and for an international demographic data base that has the capacity to provide consistent estimates of demographic parameters with a backward reach of at least 25 years and the ability to yield reasonably synchronous parameters for specified dates. BUCEN staff are in a better position than A.I.D. staff to evaluate relevant technological developments and the opportunities that they create for BUCEN to achieve its objective. Thus, A.I.D. should be responsive to BUCEN initiatives, many of which will be driven by the need to make optimal use of technological advances during the coming years.

With respect to training and technical assistance activities, here too new ground is to be broken with respect to distance learning possibilities, communications with technical assistance personnel in the field, feedback from customers, and the coordination of activities among donors, to cite a few easily envisaged examples.

Data dissemination is another area in which greater use of advanced technology can make a qualitative difference in the type and amount of statistical service BUCEN is able to render. The

most obvious instance is the dissemination of the IDB on CD-ROM with an eye to eventual on-line access.

Recommendation

30. BUCEN should take a more active role in the development of a future PASA and in advising A.I.D. on the best way to incorporate new technology into the budget of that PASA and A.I.D. should be responsive to these initiatives.

7.3 Changes at A.I.D.

Three changes within A.I.D. have the potential of modifying the kinds of work needed from BUCEN.

1) The first of these is the recent reaffirmation of an emphasis on population as one of the main areas for U.S. foreign assistance. This confirms the importance of sustaining and expanding the basic demographic work done at BUCEN, both as an essential part of A.I.D.'s efforts in the family planning field and as a valuable resource for charting the new policy directions at A.I.D. that are expected to emerge from further distillation of its promised "Global Affairs Strategy." The present PASA with BUCEN is the primary mechanism to support international census work at BUCEN. Other A.I.D. PASAs provide primarily for specialized use of the skills and other resources at BUCEN. All of this work is relevant to further development of A.I.D.'s program activities in the population field.

2) A second important change is the anticipated substantial reduction in the number of countries with USAID missions. This reduction will make it more difficult for the BUCEN project to continue or expand overseas activities through the buy-in or OYB mechanisms. During the present PASA, the number of buy-ins was considerably below the anticipated level. The solution to this problem is beyond the scope of this evaluation but it should not be beyond the organizational ingenuity of an agency that is resolved to renew its pledge to a vigorous world population initiative. Perhaps some of the savings from the eliminated missions could be put directly into mechanisms such as the BUCEN PASA.

3) A third change at A.I.D. since the current PASA began is the Office of Population's "priority country strategy." BUCEN thus far has adapted to it, but the strategy may now be beginning to have some limiting effect on BUCEN's activities.

The strategy presents a particularly inappropriate constraint to this project, which is often most useful and effective in those countries — generally the smaller ones — that have little or no tradition of census activity. Added to the problems that may result from mission closures, insistence on a rigid observance of the priority country strategy could be seriously detrimental to the broad purposes of this PASA. A.I.D. maintains that it does not intend to administer the priority country strategy rigidly, but in the case of a project like this one, it would be better not to impose it at all.

The strategy is motivated by a desire to improve the efficiency of family planning programs. The activities of ISPC and, even more so, CIR, however, are only indirectly related to these programs. None of the other A.I.D. PASAs or other sources of BUCEN funding is subject to this kind of restriction. The strategy is particularly inconsistent in terms of the PASAs of the Africa Bureau and the Near East Bureau, which cover all countries in their respective regions, and the present emphasis of the Office of Population on the priority countries in those regions.

All countries, regardless of their size, need an adequate infrastructure for carrying out a census. It is also important to ensure that regional and international comparisons can be made which include all countries. At some point in the future, it will be desirable to evaluate the priority country strategy itself. This can only be done if comparable data are available from all countries, so that population changes in priority and non-priority countries can be compared.

Recommendations

31. ISPC and CIR should be exempted from the Office of Population's priority country strategy and be given more flexibility in the selection of countries.

7.4 Changes in the Donor Community

In the context of international assistance for census activities, UNFPA is the only major donor besides A.I.D. One casualty of UNFPA retrenchment has been a decline in overall funds for census work in developing countries. UNFPA cutbacks involve costly items such as vehicles, main frame computers, and U.N. regional demographic centers in Latin America, Asia, and Africa. Funds for smaller items such as microcomputers are also expected to be less readily available. Increasingly, countries will be turning to USAID missions for help. Missions interested in obliging their host countries can be expected to turn to BUCEN for advice and assistance in dealing with these requests. European donors interested in assisting with census work will be preoccupied with census work in Eastern Europe and are unlikely to participate in this PASA, the thrust of which has been toward non-European countries.

A related factor is the prospective resumption of U.S. participation in multilateral funding of demographic work through UNFPA. If the U.S. again becomes a partner in the demographic activities of UNFPA, opportunities will materialize for closer collaboration in census and other statistical work. This report has urged that there be maximum collaboration between BUCEN and UNFPA, especially in connection with technical assistance, software development, and donor coordination. UNFPA is even now a funder of certain BUCEN activities. Future presence of the U.S. in UNFPA councils should enlarge and possibly systematize opportunities for increased funding and coordinated activity.

A third change in the overall donor community is a possible withdrawal of the World Bank from the business of making population projections (see Section 5.3.2), which, next to fertility and family planning indicators, are probably the most frequently requested kind of demographic information for programs and policies. Unlike the U.N., the World Bank enjoys great latitude in the selection and modification of the data that go into its projections. A decision by the World Bank to stop producing and publishing population projections would leave the field to the U.N. Population Division and BUCEN. Only BUCEN has unhampered freedom to handle data in ways dictated solely by technical considerations and to present its results without political bias.

Recommendation

32. ISPC should make a serious bid for multilateral funding from UNFPA should the U.S. agree to restore its contribution to that organization.

7.5 Coordination with the U.N.

At present, ISPC and CIR have coordinating and collaborative links with U.N. agencies in two areas: ISPC's technical assistance for censuses are linked with UNFPA and the U.N. Statistics Division; and CIR's demographic analysis and projections are linked with both the Population Division and the Statistics Division of the U.N. Persons interviewed in the U.N. offices provided a litany of appreciation for the activities of ISPC and CIR.

Under the current PASA, BUCEN has functioned in a technical capacity for the Interagency Committee on Census Coordination in Sub-Saharan Africa to promote better coordination and collaboration among donors. BUCEN has organized periodic meetings of the committee and has conducted follow-up work to resolve coordination issues. From April 1989 to April 1993, 19 coordinating meetings were held, including representatives of BUCEN, USAID, UNFPA, the U.N. Statistics and Population Divisions, and the World Bank. The intervals between meetings ranged from one to five months.

On the other hand, the capabilities of BUCEN to contribute to and participate with U.N. agencies are not adequately known. *World Population Profile* and the *Population Trends* publications do not always reach the right people at the U.N. Moreover, BUCEN does no work with either the United Nations Development Programme (UNDP) or the United Nations Children's Fund (UNICEF), although the IDB contains data that could be important for both organizations and that should be accessible to them either in published form or through *ad hoc* inquiries.

A 1992 management review mentioned a failure to involve European bilateral donors, an ongoing problem for which the project will continue to seek solutions.

Recommendation

33. Coordinating/collaborative links between BUCEN and the U.N. should be strengthened.
 - a) ISPC should continue to work with the Interagency Committee on Census Coordination in Sub-Saharan Africa developing a pre-planned schedule, circulating agenda items before each meeting, preparing a summary note afterwards, and ensuring the participation of all relevant agencies. ISPC should continue to prepare, publish, and give wide dissemination to the quarterly status report on census activities in sub-Saharan Africa.
 - b) ISPC should continue to organize census coordination meetings, but on a regular quarterly schedule, and should make efforts to involve all relevant and concerned agencies. UNDP and UNICEF should be informed of census programs in sub-Saharan Africa, to elicit their interest and possible participation.
 - c) ISPC should renew efforts to involve European donors in census work in sub-Saharan Africa. The offices of the U.N. Economic Commission for Europe and the Commission's Statistics Division could be utilized for this purpose. As an alternative, the Statistics Division of the U.N. Economic Commission for Africa could be asked to convene a donors' meeting.
 - d) ISPC should attempt to carry out joint or synchronous technical assistance needs assessment and project formulation missions with UNFPA (and its regional technical service

teams), the U.N. Statistics and Population Divisions, and UNICEF. This would require that USAID missions establish contacts with UNFPA's regional technical support service teams, which have been given responsibility for assessing technical assistance needs, formulating requests for UNFPA assistance with respect to country projects, and fulfilling these requests. Such cooperation would avoid duplication of effort and would allow for efficient division of labor in delivery technical assistance.

e) ISPC and CIR should organize periodic staff visits to U.N. headquarters in New York and make presentations on the services that BUCEN could offer, including installation of, and training in, software such as IMPS, PAS, etc.; access to the IDB; new methods of handling critical needs in data collection and analysis; and training in population and development.

Appendices

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Appendix A

Methodology of the Evaluation

This evaluation was conducted by a three-person team primarily in the Washington, D.C. area, during the interval May 10 to June 4, 1993. Consultants include team leader Thomas Pui'lum, demographer; John Kantner, demographer and social science researcher; and R.K. Som, demographer and program management/survey researcher. The following sources of information were used:

- A very helpful background paper prepared for POPTECH by Carol van Hulzen.
- Several discussions with Elizabeth Schoenecker, the CTO from the Office of Population.
- Discussions with the staff of the Office of Population, the Africa Bureau, and the Near East Bureau of A.I.D.
- Several visits to the ISPC and CIR offices in Upper Marlboro, Maryland, including a briefing session, other group and individual discussions, inspection of teaching facilities and data archives, and software demonstrations.
- Visits with the Bureau of the Census' associate director for demographic fields, staff of the World Bank, Population Reference Bureau, Futures Group, Population Information Program, Demographic and Health Surveys project, and other groups. One team member visited several U.N. agencies and foundations in New York City.
- Examination of documents and work products from ISPC and CIR.
- Examination of the responses to mail surveys of central statistical organizations and USAID missions, initiated by the Office of Population to assess training and technical assistance activities of ISPC.

A debriefing was given for the Office of Population on June 2 and for the Bureau of the Census on June 3. The scope of work for this evaluation is provided as Attachment 1 to this Appendix and a list of persons interviewed, as Attachment 2.

Appendix A — Attachment 1

Scope of Work

The evaluation should answer the following list of questions, adding any others which the team thinks are appropriate.

A. Performance under the current agreement

1. Is the project on target for accomplishing the activities specified in the PASA? If not, why not? Are any corrective measures needed? Are any being taken? Are the staffing patterns adequate to accomplish the specified activities? Is the staff's skill mix appropriate?
2. To what extent have BUCEN activities contributed to strengthening LDC institutional capability to plan, implement, process, analyze, and disseminate population censuses? What has been the contribution of technical assistance? Of workshops? Of long-term training? What is the perception of the USAID Missions and the central statistical organizations (CSOs) of the technical assistance they have received? Of the workshops? Of the long-term training?
3. How do CSOs rate the IMPS computer software they have used? How has IMPS been used? Has the training for using it been adequate? Have they had occasion to seek ongoing support? Do they read DataLine? Is it useful? Does the Mission feel that appropriate hardware and software have been provided?
4. Have the materials which have been developed about census planning and census methodology been adequate for the countries for which they are intended, particularly those countries for which direct TA is not feasible?
5. What has been the demand for BUCEN services by Missions? Level of buy-ins and OYB transfers? Are Missions aware of the BUCEN resources available to them? Has BUCEN been responsive to the Missions and the CSOs when Census needs and problems arise? If not, why not? Funding problems? Scheduling difficulties?
6. How does this PASA relate to other A.I.D. PASAs with BUCEN? Is there a duplication of activities? To what extent has this PASA leveraged funds for census activities from other sources (A.I.D. and other donors)?

7. What has been the demand by A.I.D. and other population organizations for demographic and family planning data from BUCEN? Have the data been provided in a timely and useful fashion? How can A.I.D. take better advantage of BUCEN's data sources? Could CIR do a better job of promoting and disseminating its data? If so, how?

8. How much coordination exists between ISPC and CIR? In the BUCEN training programs? On in-country dissemination and data utilization? On software development? On assessment teams? Is it adequate? Can you suggest areas which need improvement? Are the management arrangements at BUCEN adequate to ensure appropriate coordination between CIR and ISPC?

9. What progress has been made in donor coordination over the first four years of the PASA? What problems exist in this area?

10. What has been the impact of R&D/POP's priority country strategy on this PASA and its activities?

B. Modifications to the current agreement

1. What modifications, if any, might be made to improve performance and impact during the final year of the current PASA?

2. Are any modifications needed in light of R&D/POP's priority country strategy?

C. Design of extended or follow-on agreement

1. How has BUCEN's work under this project been affected by changes at A.I.D. since this PASA was written (e.g., Bureau reorganizations, the advent of the Development Fund for Africa, R&D/POP's priority country strategy)? How should these changes be reflected in a follow-on PASA or a long-term (3-1/2 year) extension of the current PASA?

2. The current PASA provides support that "is complementary to the support that the USAID Missions and other donors offer to developing countries. The emphasis is on providing assistance which fills specific gaps in the total census assistance package which can not be met from other sources, or encourages support from other sources." Should this focus of the PASA be changed in light of R&D/POP's priority country strategy? How can the BUCEN project best contribute to the priority country strategy?

3. What are the high-priority needs in the field during the next 3-5 years for census technical assistance, training, analysis, dissemination, and materials and software development where BUCEN can continue (or start) to make a valuable contribution?

4. In what areas does BUCEN have a comparative advantage over other CAs or other donors (e.g., TA, work-study programs, long-term training, demographic projections and analysis)? Are there areas of expertise that A.I.D. is not tapping? How does BUCEN fit into the R&D/POP portfolio vis-a-vis other projects? How can collaboration between BUCEN projects and other projects be increased?

5. At what point(s) in a country's census cycle can this project be most useful to Missions? How can the number of buy-ins be increased? At what point(s) in the development of country strategies and country action plans can this project be most useful to A.I.D.?

6. Which BUCEN activities should be continued or expanded? Which should be dropped or scaled back? Are there new areas that should be incorporated?

7. Are the reporting requirements of the current PASA adequate? If not, what should be changed or added?

Appendix A — Attachment 2

List of Persons Interviewed

A.I.D.

Office of Population

Lori Ashford
Richard Cornelius
John Coury
John Crowley
Elizabeth Maguire
Scott Radloff
Elizabeth Schoenecker
Ellen Starbird

Africa Bureau

Robert Haladay
William Lyerly
Gary Merritt

Near East Bureau

Shelley Schneider
William Jansen

ISPC

J. Howard Bryant, Chief ISPC
Robert Bush, Special Assistant
Leo Dougherty, Chief of Training Branch
Bruce Durdling, Member of Systems Training and Software Branch
Enrique Gomez, Chief of Systems Applications Branch
Larry Hartke, Member of Census and Survey Systems Branch
Tom McDevitt, Member of Training Branch
Larry Patin, Assistant Division Chief for Assistance Program
Michael Stroot, Member of Systems Training and Software Branch

CIR

Judith Banister, Chief (CIR)
Sylvia Quick, Assistant Chief (CIR)
Eduardo Arriaga, Special Assistant for International Demographic Methods
Martin Brockerhoff (assigned to Office of Population)
Frank Hobbs, Chief, Population Studies Branch
Marjorie Horn (assigned to Office of Population)
Mike Goodloe, Computer Analyst
Arjun Adlakha, Statistician/Demographer

Pat Rowe, Statistician/Demographer
John Reed, Statistician/Demographer
Karen Stanecki, Chief of Health Studies Branch
Peter Way, Statistician/Demographer

U.N. Statistics Division

Shirley Baptiste, Chief, Management & Planning Section
Alice Clague, Statistician
P. Gerland, Software Specialist
A. Maitra, Interregional Adviser in Demographic Statistics
Sam Suharto, Census Specialist
S. Suliman, Vital Statistics Specialist
Duy Man Vu, Co-ordinator, Software Development Project
Y. C. Yu, Chief, Demographic Statistics Branch

U.N. Population Division

C. S. Baldwin, Chief, Population Projects Section
B. Bucht, Assistant Director
J. Chamie, Acting Director
C. Ejiogu, Associate Director and Coordinator, Technical Cooperation
L. Heligman, Chief, Estimates & Projections Section
Louise Kantrow, Special Technical Adviser on Demographic Analysis (by telephone)
Mary-Beth Weinberger, Demographer

United Nations Population Fund (UNFPA)

Marlene Francois, Programme Officer, Africa Division
M. Nizamuddin, Chief, Population Policy & Research Branch
S.L.N. Rao, Deputy Chief, Information and External Relations Division

Other

William Butz, Associate Director, Bureau of the Census

Randy Bulatao, World Bank
Kenneth Hill, World Bank/Johns Hopkins University
Althea Hill, World Bank
Thomas Merrick, World Bank

Barbara Torrey, Director, Population Reference Bureau

Thomas Goliber, Director, RAPID/Futures Group

Cheryl Warner, Deputy Project Manager, Economic and Social Data Service, Center for Development Information and Evaluation

Phyllis Piotrow, Director, Population Information Program (PIP)/Johns Hopkins University

**Ann Compton, PIP
Ward Rinehart, PIP
Bryant Robey, PIP**

**Martin Vaessen, Director, Demographic and Health Surveys/IRD
Annie Cross, DHS
Shea Rutstein, DHS
Jerry Sullivan, DHS**

**Roy Miller, Director, Center for International Health Information/International Science and Technology
Institute**

W. Parker Mauldin, Population Council/Rockefeller Foundation

Appendix B

Deliverables Analysis Scope of Work vs. Actual Activities

1. Activities to promote better census planning by developing country governments	
Scope of Work	Actual activities from April 1989 to March 1993
--Provide a total of 8 assessment visits to identify areas of need and to assist in the preparation of census planning documents; over 50 percent will be funded by buy-ins. (Actual annual scopes of work/budgets called for a total of 11 assessments.)	Assessment visits: (9) Visits to Morocco, Mozambique, Madagascar, Paraguay, Peru, Colombia, El Salvador, Yemen, and Ghana. Visits proposed for Ethiopia and Nicaragua. (2)
--Provide a total of 4 planning workshops designed to educate statistical office staff in the techniques and requirements of planning and carrying out the large and complex operations that make up a census; over 50 percent will be funded by buy-ins. (Actual annual scopes of work/budgets called for 1 planning workshop.)	Planning workshops: One workshop conducted. One planned for Ghana.
--Promote, in conjunction with A.I.D. and other donor organizations, better census planning through identification of countries in need; identify countries in need of census planning support through established information system listing census dates, census experience, donor support and census progress.	10 multidonor packages developed.
--Make an effort to involve all USAID missions in countries that anticipate taking a census in the next four years, by providing them with semi-annual reports of the status of census activities in their countries, a brief description of identified needs, and an outline of potential responses to these needs.	
--Continue to produce and disseminate a census planning brochure that includes a timetable of census activities and a description of various steps in the process.	1,000 copies of the census planning brochure distributed.
--Evaluate commercial software packages developed for project management, for use in census planning.	
--Supplement a population census methodologies module with a one-month work-study program designed to provide an environment in which participants can produce a draft census plan.	

2. Activities to strengthen weak LDC technical skills	
Scope of Work	Actual activities from April 1989 to March 1993 (organized by country)
<p>--Intensive assistance will be provided in the form of short-term, in-country workshops and technical assistance visits that focus on key activities of census planning and execution. Up to a total of 4 workshops and 8 technical assistance visits will be funded; over 50 percent will be funded through buy-ins. This support will be designed to supplement other donor support by filling critical gaps in existing assistance programs. (Actual annual scopes of work/budgets called for a total of 7 technical assistance visits and 3 workshops.)</p>	<p>Technical assistance visits (6)</p> <p>Colombia: developed fieldwork/logistics strategy.</p> <p>Colombia: visit by a Colombian national to further develop the census management information system.</p> <p>Niger: provided "bridge funding" for reviewing and finalizing the census edit specifications.</p> <p>Paraguay: provided technical assistance on the development of the edit and imputation specifications (mission funded travel and per diem).</p> <p>Rwanda: monitored the control visits for the census Post Enumeration Survey.</p> <p>Zambia: provided assistance with the census Post Enumeration Survey.</p> <p>Workshops (2)</p> <p>Dominican Republic: participated in a short workshop on the design of the census form.</p> <p>Mexico: presented a paper in a conference on the evaluation of the 1980 population census.</p>
<p>--Extensive assistance designed to reach a broad range of countries for which direct technical assistance is not financially feasible will be provided. BUCEN will update, maintain, and disseminate appropriate methodological documentation in areas including the use of sampling in censuses, quality control procedures, census evaluation and analysis, the dissemination of census results, etc.</p>	<p>Done</p>
<p>--Identify and adapt existing materials to meet the need for more detailed methodological literature.</p>	<p>Done</p>
<p>--Develop training materials that address subjects including the design of training programs for field staff and the preparation of computer edit specifications.</p>	<p>Done</p>

<p>A technical literature review to be prepared.</p>	<p>Updated population census model questionnaire and technical literature review prepared.</p>
	<p>Other:</p> <p>--Research Activities (1)</p> <p>Nigeria: carried out preparatory work on a cartographic assessment which was later canceled.</p> <p>--Revised and updated the population and housing census questionnaires; developed several issues papers for discussion and/or adoption by the Interagency Census Coordinating Committee.</p>

3. Activities to deal with delays in data processing and tabulation	
Scope of Work	Actual activities from April 1989 to March 1993 (organized by country)
<p>12 workshops and 20 technical assistance visits to be carried out. (Actual annual scopes of work/budgets called for 8 workshops and 20 technical assistance visits.)</p>	<p>-- Technical assistance visits (16)</p> <p>Central African Republic: assisted with production of 1989 census tabulations using Integrated Microcomputer Processing System (IMPS).</p> <p>Chad: provided technical assistance on the development of a census processing system.</p> <p>Colombia: assisted with development of a census management information system.</p> <p>Ecuador: assisted with development of a data processing strategy for the 1990 population census using IMPS.</p> <p>India: reviewed census processing systems.</p> <p>Kenya: discussed the need for data processing assistance for the 1989 population census and assisted with computer processing of census data during a brief stopover.</p> <p>Kenya: assisted with development of the data entry, editing, and other programs in support of the 1989 population census using IMPS.</p> <p>Kenya: assisted with production of 1989 census tabulations using IMPS.</p> <p>Mauritius: provided assistance to process the 1990 population census during a one-week stopover.</p>

	<p>Mozambique: assisted in producing tabulations for the National Demographic Survey.</p> <p>Niger: provided "bridge funding" for on-the-job training in the use of CONCOR and CENTS.</p> <p>Nigeria: trained National Population Commission staff on the use of CENTRACK for the 1991 population census.</p> <p>Paraguay: provided technical assistance on the development of a census processing system.</p> <p>Paraguay: reviewed data entry operation and assisted in developing the census edit system.</p> <p>Rwanda: provided IMPS assistance and training in support of the 1991 population census and reviewed additional needs to support the census.</p> <p>Rwanda: completed a trouble-shooting visit on the processing of the 1991 population census.</p>
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	<p>Workshops (8)</p> <p>Bolivia: taught IMPS workshop in support of 1992 population census.</p> <p>Caribbean: presented a six-week regional workshop on IMPS attended by representatives from 14 Caribbean countries who were planning population censuses in 1990-91.</p> <p>Chile: participated in a two-week seminar presented by the Demographic Center for Latin America on the latest version of REDATAM, a software package for dissemination of population census results.</p> <p>Kenya: taught a four-week IMPS workshop for thirteen participants at the Central Bureau of Statistics in Kenya.</p> <p>Nigeria: presented an IMPS workshop to staff of the National Population Commission and began work on the development of the census edit system.</p> <p>Togo: two Togolese traveled to Washington for a six-week IMPS workshop and three-week work-study visits to development programs for the processing of the population census.</p> <p>Venezuela: provided a three-day seminar on the use of microcomputers for population censuses and gave a presentation on IMPS.</p>
<p>--Distribute a newsletter announcing IMPS updates, describing new products, presenting solutions to problems, and sharing ideas on census and survey processing issues. Initially, the newsletter will be published two to four times per year.</p>	<p>--Sent out 8 DataLine newsletters to 1000 readers.</p>

<p>--Continue to adapt software packages to be more user-friendly and develop tutorials, "help" features, and interactive modules to make the software as easy to use as possible.</p>	<p>--Distributed 20 copies of Realia Cobol.</p> <p>--Completed reference manuals for IMPS software.</p> <p>--Updated and released CENTRACK.</p> <p>--Enhanced IMPS software for data processing and distributed 200 copies, used in approximately 90 countries.</p> <p>--Developed and updated software programs, manuals, and provided user support.</p>
<p>--Make low-cost enhancements to the CENTRY system.</p>	<p>Done</p>
<p>--Continue to evaluate new data processing technology that would make the census processing tasks easier and less time consuming.</p>	<p>Done</p>
	<p>Other:</p> <p>--Completed edit specifications for a typical population census questionnaire.</p> <p>--Completed a set of computer programs to produce highest priority population census tables to reduce the programming burden of developing country census offices.</p> <p>--Answered approximately 250 individual inquiries per year from IMPS users worldwide via telephone, fax, and letter.</p>

4. Activities to address the problem of insufficient analysis and dissemination of census data	
Scope of Work	Actual activities from April 1989 to March 1993
<p>Demographic training and technical assistance:</p> <p>--Provide 1 country-specific demographic analysis workshop per year, with the possibility that additional workshops will be funded through the buy-in mechanism provided under this agreement. (Actual annual scopes of work/budgets called for a total of 3 workshops.)</p>	<p>Data analysis workshops (6)</p> <p>--Presented a one-week workshop for 13 participants from the Instituto Nacional de Estadística, Geografía, y Informática (INEGI), of Mexico (counted as a full workshop).</p> <p>--Helped present a regional workshop on subnational and sectoral population projections (counted as a full workshop).</p> <p>--Helped visiting staff from the Centre d'Etudes et de Recherche sur la Population pour le Développement (CERPOD) to establish a demographic data base for the countries in the Sahel (counted as a half workshop).</p> <p>--A Honduran visited Washington to receive assistance in making new population projections for Honduras (counted as a half workshop).</p> <p>--CIR staff presented English, French, and Spanish language Demographic Analysis with Microcomputers Workshops in Washington (each counted as a half workshop).</p> <p>--Presented a three-week demographic analysis workshop in the Philippines (counted as a half workshop).</p>
<p>Analysis and dissemination workshops (4)</p>	<p>Dissemination workshops (2)</p> <p>--Presented a paper on data dissemination at the 1990 conference of the International Association for Official Statistics (counted as a full workshop).</p> <p>--Held a two-week workshop on data dissemination for twenty-three participants in Nairobi (counted as a full workshop).</p> <p>Planned/proposed activities:</p> <p>--A dissemination workshop is scheduled for the Asia Region in November 1993.</p>

<p>--Provide a total of 6 technical assistance visits to developing country counterparts in designing appropriate materials and strategies for disseminating census results. (Actual annual scopes of work/budgets called for 8 technical assistance visits.)</p>	<p>Dissemination technical assistance (5)</p> <p>--Provided assistance in improving response to data inquiries and publishing data in the Philippines (counted as one technical assistance visit).</p> <p>--Four participants traveled to Washington to attend the Population Data Analysis, Dissemination and Use training program (counted as four technical assistance visits).</p> <p>Planned/Proposed:</p> <p>--A planned dissemination technical visit to Kenya is awaiting the formal release of the census data.</p>
<p>--Train developing country census staff, as well as demographers from other relevant organizations, to analyze their 1990 round of censuses.</p>	<p>Done</p>
<p>--Add a component to the established training program that will permit developing country demographers to remain at ISPC for one to two months at the conclusion of their formal training; these work-study extensions will be funded either through project implementation orders/participant (PIO/P) or buy-ins.</p>	<p>Carried out under non-DDI funding.</p>
<p>--Continue to emphasize data dissemination in structuring agendas for the hundreds of senior level LDC visitors who come each year (funding not required under this agreement).</p>	<p>Done</p>
<p>Compilation and analysis of demographic data:</p> <p>--Broaden its work for A.I.D. by tailoring detailed demographic data for specific use by A.I.D.'s Population and Health Officer staff, USAID missions and cooperating agencies (CAs).</p> <p>--Provide updated regional demographic data for the Office of Population to distribute to the regional bureaus, desk officers, and missions in the field; this will encourage the use of consistent demographic estimates by the various groups within A.I.D.</p>	<p>--Provided "quick turn-around analyses" (short analyses on topics of current interest to the Office of Population).</p> <p>--<u>Population Trends</u> reports on A.I.D.'s priority countries (3 published, 3 at the printer, and 2 underway).</p>
<p>--Continue to update and maintain computerized demographic and family planning data on an annual basis.</p>	<p>Done</p>

<p>--Provide the Office of Population with a biannual publication entitled World Population Profiles for wide dissemination to both A.I.D. missions and policy planners overseas.</p>	<p>--Completed and published <u>World Population Profile</u> for 1989 and 1991; 1994 under way.</p>
	<p>Other:</p> <ul style="list-style-type: none"> --Developed training materials for ISPC's training programs and workshops. --Released updated version of QUICKTAB. --Completed interface between IMPS and REDATAM software. --Completed Population Analysis with Microcomputers manual and accompanying software -- Population Analysis Spreadsheets (The U.N. will publish this manual jointly with BUCEN. Over 350 copies have been distributed.)

5. Activities to improve donor coordination and technical support to the Office of Population	
Scope of Work	Actual Activities from April 1989 to March 1993
<p>Interagency Committee on Census Coordination in Sub-Saharan Africa:</p> <p>--Continue to function in a technical capacity for the Interagency Census Coordinating Committee to promote better coordination and collaboration among donors.</p> <p>--Serve on coordinating committees, maintain close communication with host-country and donor field offices and participate in joint assessment and assistance missions.</p> <p>--Provide necessary support for efforts to coordinate donors' activities at decision-making levels, over and above the collaborative activities taking place at the technical level.</p>	<p>--Organized periodic meetings (19 meetings in the above interval, including 14 in Washington, D.C., 3 in New York, and 2 in Geneva) of the Interagency Census Coordinating Committee, expanded the quarterly report to include "the rest of the developing world and Eastern Europe," conducting follow-up work to resolve coordination issues.</p> <p>--Identified and resolved census funding and implementation problems in sub-Saharan Africa among the U.N., the World Bank, and A.I.D. through the Interagency Census Coordinating Committee. (The failure to involve the European bilateral donors is an ongoing problem for which the project will continue to seek solutions.)</p> <p>--Continued to organize periodic Interagency Census Coordinating Committee meetings.</p> <p>--Continued to carry out follow-up work to resolve coordination issues.</p>
<p>Status Report:</p> <p>--Continue to prepare quarterly status reports on census activities in Africa and make them available.</p>	<p>--Continued to prepare a quarterly report on census activities for developing countries.</p>
<p>Expanded committee participation:</p> <p>--Make an effort to broaden donor participation, among groups in addition to USAID, the U.N., the World Bank and BUCEN; hold face-to-face meetings and distribute status reports and other relevant materials.</p>	<p>--Carried out Washington-based work as well as trips to Europe to meet with major bilateral donors, the Economic Commission for Africa meeting of African demographers, the Population Association of America (PAA) meetings, Chad, Mali, Morocco, and Niger.</p> <p>--Participated in the "Technical Meeting on the Sub-Saharan Africa Census Program" in Geneva.</p> <p>--Attended the Economic Commission for Africa's joint conference on Planners, Statisticians, and Demographers in Ethiopia.</p> <p>--Participated in the U.S. delegation to the Third African Regional Population Conference in Senegal.</p> <p>--Participated in the U.S. delegation to the European Population Conference in Geneva.</p>

<p>Technical backstopping:</p> <p>--Provide technical expertise in demographic statistics to support Office of Population initiatives identified during the period of the agreement; review and analyze recent demographic data, support related population research, assist in developing innovative projects involving demographic data collection, and undertake census coordinating activities.</p>	<p>--Provided 70 person months of technical assistance support under the project. In addition to Washington-based work, the project has funded trips to Europe to meet with major bilateral donors, the PAA, Chad, Egypt, Ghana, Mali, Morocco, Niger, Nigeria, Regional Economic Development Support Office/East and Southern Africa (REDSO/ESA) in Nairobi, and Regional Economic Development Support Office/West and Central Africa (REDSO/WCA) in Abidjan.</p>
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Appendix C

List of Recommendations

- 1) **Long-term training should be phased out and greater emphasis should be put on short-term, focused training provided either at BUCEN or through a collaborating foreign institution.**
- 2) **The modularization of short-term training sequences with accompanying instructional guides and exercises should be completed and the principal elements of a modular instructional plan field tested before completion of this PASA.**
- 3) **Short-term training should be audience-specific — that is, it should recognize the different needs of policy makers, advocates and technicians. Each module should have a common core but the emphasis could vary from how a policy maker can benefit from census and other demographic information to what a technician needs to know about how demographic data are produced, scrutinized, adjusted, disseminated and analyzed. A brief module appropriate for donors, managers, and A.I.D. program officers might also be considered.**
- 4) **More use should be made of collaborating institutions abroad as training sites.**
- 5) **If the plans go forward to phase out long-term training and to focus on short-term training, a plan should be developed for the best use of the Upper Marlboro training facility. This will mean reevaluating staff requirements appropriate to the revised training plan and will no doubt involve down-sizing of the training staff. The main BUCEN operation could absorb some of the technical and analytic staff (and release them back in time of peak demand) but personnel shifts of this sort require time to accomplish. Unlike private sector organizations, BUCEN must respect the regulations that govern civil service employment and thus program shifts can be unwieldy.**
- 6) **The costs and benefits and prospects of distance learning should be examined.**
- 7) **The training curriculum should place an increased emphasis on analysis and dissemination of census data.**
- 8) **A marketing strategy should be developed for BUCEN products including the components of its revised training program. Arrangements must be made for wide and carefully targeted distribution of brochures on workshops and other kinds of new training programs. Mailing lists such as those maintained by the Population Information Program (PIP) might be consulted in this regard.**
- 9) **The emphasis in technical assistance should be shifted from data processing toward analysis and dissemination.**
- 10) **Technical assistance should be directed to increasing the use of, and training in, the improved version of IMPS and other new software under development described in Chapter 4. A special effort will be required to acquaint international and domestic users with the capabilities of the enhanced version of IMPS.**
- 11) **Ways should be explored to strengthen collaboration with suitable developing country institutions in preparation for transferring much of BUCEN's technical assistance (and training) to developing country settings. BUCEN should develop its contacts further with CERPOD and RIPS, with a view to augmenting, in particular, the training of trainers.**
- 12) **BUCEN should develop new ways to collaborate on technical assistance activities with the U.N. Population Division and UNFPA. Any new agreement between BUCEN and A.I.D. should explicitly recognize these cooperative activities and should cover the requisite time and travel of senior personnel who are involved in it.**

13) To the greatest extent feasible, training staff and analytical staff should participate in direct technical assistance.

14) The potential contribution of BUCEN's technical assistance to USAID's development agenda should be advertised more widely and aggressively.

15) Methodological and software development should be continued to improve and simplify censuses and surveys in developing countries. The following activities are recommended:

a) Develop software for census planning and tracking. BUCEN should prepare a template for census planning and tracking for use in developing countries, not only in population censuses and surveys but also in other population projects. Time Line DOS v5 could be used to prepare a template for census planning and tracking. In that template, the midpoint of the census enumeration period would be taken as 0, and the timings of other census activities would be identified with reference to 0. For example, the establishment of a national census committee might be at time -36 (months), the post-enumeration survey at time +1, the preparation of a preliminary census count at time +2, etc. The template could be used in all countries. It would be a simple matter to shift the time table laterally when the census enumeration date is changed, a common occurrence in some developing countries. Instruction materials and the template could be given wide dissemination for use in planning censuses and surveys in developing countries.

b) Develop a software program for computerized sample selection from a data base (frame) that includes information from censuses and administrative records.

c) Design a microcomputer-based software system to develop census forms, interviewer manuals, interviewer training, and edit/imputation specifications. This would augment national capacities in census design and would complement the IMPS system for data processing and the PAS system of demographic analysis.

d) Consider testing and adapting new data collection techniques, such as CAPI, and new data capture techniques, such as optical character reading.

16) IMPS should be further enhanced, with the following additions:

a) Incorporate, with due acknowledgment, the user-friendly table retrieval system, developed by the U.N. Statistics Division.

b) Make the Census Tabulation System (CENTS) more flexible by developing a largely interactive user interface and expanding its capability to include special publication effects in its output.

c) Eliminate the need for a Realia Cobol compiler to make IMPS fully functional.

d) Develop methods to facilitate export of census data and estimates to commercial packages for statistical analysis (packages such as SPSS-PC, SAS, and SYSTAT) and graphical display (packages such as Harvard Graphics, Freelance Graphics).

e) Add functions and features to support automated cartography and interfacing to GIS software systems.

f) Adapt REDATAM and include it, with due acknowledgement, in the software packages offered by ISPC.

g) Incorporate at least two case study models on the application of IMPS modules.

17) The following enhancements should be added to PAS:

a) A capability should be developed for sub-national population projections by incorporating a future version of IMPP within PAS.

b) BUCEN should arrange to have the PAS manual translated and published in French (for use in francophone African countries) and in Spanish (for use in Latin America).

18) In-country access to each country's census data should be improved. ISPC, perhaps in collaboration with the U.N. Statistics Division, should actively and systematically familiarize the central statistical organizations and USAID missions in A.I.D.-selected countries with the advantages and applications of the table retrieval system and the CENTS software. If at all possible, one or both of these packages (and their appropriate data files) should be available to a variety of in-country users, for regional as well as national planning.

19) General (including U.S.) access to international census data should be improved. The following steps are recommended:

a) The current dissemination activities of ISPC should be expanded, including the addition of one or two staff members, preferably persons with private sector and commercial experience.

b) Some kind of data base, drawn largely from other countries' most important census tabulations, should be made available by ISPC on diskettes, CD-ROM, or on-line through some distribution network, for general access. The content of this data base would, of course, be limited by the kinds of information that countries would be willing to provide and would not include raw data. Access to the data would require a modest cost reimbursement.

20) General access to the IDB should be improved.

a) The IDB should be made available by ISPC on diskettes, CD-ROM, or on-line through some distribution network. This format could be updated more frequently than the publication of the *World Population Profile*. It would differ from the ISPC data base in that it would include projections as well as estimates and information on fertility and contraception from a variety of sources other than censuses. Ideally, it would be provided in a hypertext format, in such a way that the user could readily obtain an evaluation and explanation of the information.

b) To facilitate international comparisons, CIR should investigate the use of a more flexible hierarchical format as recommended in recommendation (e.g., the newly introduced Lotus "Improv" spreadsheet format or an anticipated product of Borland Corp.).

21) The IDB should be expanded and the analyses and projections based on it should be modified and refined.

a) The IDB should be expanded to include reported estimates for earlier time periods, for trend analysis. The development of a "reverse population projection" should proceed, but with the understanding that reverse projections must be reconciled with earlier estimates based on old censuses.

b) CIR should review its projection methodology, including retrospective validation and comparisons with World Bank and U.N. approaches. In particular, CIR staff should evaluate the key assumption that the expectation of life and the TFR follow a logistic curve over time, with fixed asymptotes. This assumption could be tested against the empirical experience of the developed countries and of countries such as Taiwan and South Korea which have already reached replacement fertility.

c) A linkage should be established between future fertility and future contraceptive prevalence and published in the *World Population Profile* and/or other publications. Prevalence would not need to be projected

for every country, but a table or graph could be included to relate changes in the TFR to implied changes in contraceptive prevalence, at various levels of mean use-effectiveness.

d) CIR needs to make very clear to developing country users of its population projections that these are based on the assumption of major future declines in fertility, even in those countries that have not yet begun such declines and that they thus correspond to the achievement of a high level of contraceptive use.

22) Dissemination of products and of analyses should be improved, using the IDB.

a) CIR should investigate the feasibility of a publication based on the IDB in the *Population Reports Series* of the Population Information Program (PIP). This could be similar to the recent *Population Report* summarizing the findings of the Demographic and Health Surveys project. It would be necessary to develop some theme to make the findings interesting to a wide audience. For example, a motivation for the report could be that the 1990-91 round of censuses was the most complete and accurate in history.

b) More aggressive efforts should be made to stimulate the use of the IDB within A.I.D. and CAs. This could include the identification of specific individuals and scheduling presentations with them.

c) *Population Trends* should be continued and expanded, but with a more cost-effective method of distribution. Appropriate mailing lists may be obtained from PIP, for example.

23) A set of illustrative analyses should be assembled, prepared, or commissioned. These could deal with topics such as the use of census data to project future needs for elementary schools or the use of census data for marketing in a specific business or industry. As a start, ISPC should assemble a collection of analyses that have been carried out in various countries, together with a description for each one of how it was prepared, for whom it was prepared, how long it took to prepare it, and the cost, the response to it, and suggestions (particularly from the specific country) as to how, in retrospect, the analysis could have been even more useful. These items or documents could be regarded as illustrative analyses. Ideally, each such analysis would have been developed in response to a perceived in-country need, but if some obvious possibilities exist that have never been carried out, then ISPC should initiate new analyses. The illustrative analyses could be distributed to the census staff in each country and used in both training programs and technical assistance activities.

24) The Office of Population, and other sponsors, such as the Africa Bureau, should consider increasing the funding level to include more, even if partial, funding for some of the senior personnel that are now paid from the overhead account.

25) BUCEN management needs to ensure that investment in staff development is maintained at a high level and increased, if possible.

26) BUCEN should more frequently take the initiative to suggest to the Office of Population new work directions and new uses of technology.

27) CIR staff should participate more fully in ISPC operations, in particular, in ISPC assessment visits. This would call either for some increase in staff or a realignment of current functional responsibilities.

28) The mechanism of a CIR pass-through should be used to assign one or two CIR employees to the Office of Population to assist in the fuller exploitation of CIR's resources.

29) BUCEN needs to provide a core level of funding to support operations of ISPC and CIR. This will require the approval of the Department of Commerce.

- 30) BUCEN should take a more active role in the development of a future PASA and in advising A.I.D. on the best way to incorporate new technology into the budget of that PASA and A.I.D should be responsive to these initiatives.
- 31) ISPC and CIR should be exempted from the Office of Population's priority country strategy and be given more flexibility in the selection of countries.
- 32) ISPC should make a serious bid for multilateral funding from UNFPA should the U.S. agree to restore its contribution to that organization.
- 33) Coordinating/collaborative links between BUCEN and the U.N. should be strengthened.
- a) ISPC should continue to work with the Interagency Committee on Census Coordination in sub-Saharan Africa developing a pre-planned schedule, circulating agenda items before each meeting, preparing a summary note afterwards, and ensuring the participation of all relevant agencies. ISPC should continue to prepare, publish, and give wide dissemination to the quarterly status report on census activities in Sub-Saharan Africa.
- b) ISPC should continue to organize census coordination meetings, but on a regular quarterly schedule, and should make efforts to involve all relevant and concerned agencies. UNDP and UNICEF should be informed of census programs in Sub-Saharan Africa, to elicit their interest and possible participation.
- c) ISPC should renew efforts to involve European donors in census work in sub-Saharan Africa. The offices of the U.N. Economic Commission for Europe and the Commission's Statistics Division could be utilized for this purpose. As an alternative, the Statistics Division of the U.N. Economic Commission for Africa could be asked to convene a donors' meeting.
- d) ISPC should attempt to carry out joint or synchronous technical assistance needs assessment and project formulation missions with UNFPA (and its regional technical service teams), the U.N. Statistics and Population Divisions, and UNICEF. This would require that USAID missions establish contacts with UNFPA's regional technical support service teams, which have been given responsibility for assessing technical assistance needs, formulating requests for UNFPA assistance with respect to country projects, and fulfilling these requests. Such cooperation would avoid duplication of effort and would allow for efficient division of labor in delivery technical assistance.
- e) ISPC and CIR should organize periodic staff visits to U.N. headquarters in New York and make presentations on the services that BUCEN could offer, including installation of, and training in, software such as IMPS, PAS, etc.; access to the IDB; new methods of handling critical needs in data collection and analysis; and training in population and development.



POPTECH'S REPORT-AT-A-GLANCE SERIES

EVALUATION OF THE OFFICE OF POPULATION'S PARTICIPATING AGENCY SERVICE AGREEMENT WITH THE U.S. BUREAU OF THE CENSUS (1989-1994)

SUMMARY

The Agency for International Development's Office of Population is approaching the completion of its current participating agency service agreement (PASA) with the U.S. Bureau of the Census (BUCEN). The PASA's main goals are to improve the quality and utilization of censuses in developing countries and to maintain a database and projections that will be useful for programs and policy development. The principal activities are in-country workshops, technical assistance visits, and a U.S.-based training program for foreign census staff, carried out mainly by the International Statistical Programs Center (ISPC); and the International Data Base (IDB), population estimates and projections, and periodic publications of the Center for International Research (CIR). The IDB is the source for about 85 percent of the estimates in the Population Reference Bureau's (PRB) widely distributed annual World Population Data Sheet. Both units prepare and distribute relevant software which is widely used on microcomputers. This work, which is also supported by some regional bureaus of A.I.D. and other donors, is highly regarded by other countries' central statistical agencies and other consumers. The main challenge for a future PASA will be to improve the analysis, utilization, and access to the results of the worldwide round of censuses conducted in 1990 and 1991.

FACTORS AFFECTING PROJECT PERFORMANCE

Facilitating Factors

- The U.S. Bureau of the Census is internationally respected as the premier census organization in the world. It has been able to promote objectivity and high standards for the collection and analysis of data procedures that make optimal use of modern technology.
- ISPC and CIR have highly competent professional staffs and strong management.
- Working relationships between BUCEN and A.I.D.'s Office of Population are excellent.
- Collaboration is good between ISPC and CIR and also between the units and relevant United Nations agencies that provide similar technical assistance and population projections.
- Both ISPC and CIR have developed software packages for microcomputers that are widely distributed and greatly magnify the value of training and technical assistance.

Constraints

- High costs of tuition, travel, and subsistence in Washington have resulted in a decline in the demand for U.S.-based training.
- The PASA has had a lower than expected level of mission buy-ins; large operational year budget transfers have made up for only a portion of the shortfall.
- Potential users are often unaware that the IDB is the source for PRB's World Population Data Sheet and may not appreciate the careful evaluation and analysis that underlies the IDB.
- The success of ISPC and CIR in retaining competent staff has resulted in a top-heavy personnel structure and relatively high personnel costs.
- Although ISPC and CIR are part of BUCEN, they are almost totally dependent on outside sources such as A.I.D. for funding. They receive no core funding from BUCEN, making it difficult for them to adjust to fluctuations in outside funding.

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LESSONS LEARNED

- Certain activities require a continuing, stable core of support, even if they are largely dependent on short-term funding. The international activities of BUCEN justify core support and should not depend wholly, as at present, on external funds.
- Buy-ins and operational year budget transfers can be useful mechanisms but do not guarantee that needed work will be done. Much of the training and technical assistance, and many of the workshops that the Office of Population initially expected would be done through these mechanisms, were never funded by missions.
- The pass-through mechanism for staffing A.I.D. should be examined. There is no question that A.I.D. would be understaffed without these positions, but this use of BUCEN funds does not benefit the work under this PASA. The mechanism might be better used to assign CIR or ISPC employees to the Office of Population to assist in the fuller exploitation of BUCEN's resources.
- Data, such as those from censuses and surveys, do not have any inherent value, but are important only to the extent that they are analyzed, disseminated, and utilized. The emphasis of both A.I.D. and BUCEN on these activities is commendable and should be implemented to an even greater extent.
- Even if the priority country strategy provides a sound basis for other Office of Population programs, it is not necessarily appropriate for census work. All countries, regardless of their size, need an adequate infrastructure for carrying out a census. It is also important to ensure that regional and international comparisons can be made which include all countries.
- The various PASAs with BUCEN, of which this is only one, are not part of a coherent plan and apparently are never reviewed as a group. In such a situation, it is difficult to identify the incremental effect of any one PASA or to measure the potential indirect impact of recommendations upon other activities.

Source: *Evaluation of the Office of Population's Participating Agency Service Agreement with the U.S. Bureau of the Census (1989-1994)* by Thomas Pullum, John Kantner, and R.K. Som. 1993. POPTECH Report No. 93-194-154.

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August 25, 1993

SUBJECT: 1) *Evaluation of the Office of Population's Participating Agency Service Agreement with the U.S. Bureau of the Census (1989-1994)*
2) Report-at-a-Glance

Enclosed for your information are copies of the above-referenced publications prepared by Thomas Pullum, John Kantner, and R. K. Som.

Yours truly,


Malven E. Schneider
Director, POPTECH

MES/mgl

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