



AMERICAN PUBLIC HEALTH ASSOCIATION
International Health Programs
1015 Fifteenth Street, NW
Washington, DC 20005

AID CONTRACT NO. DSPE-C-0027:
AN EVALUATION OF TECHNICAL ASSISTANCE
TO SUPPORT THE
1980 WORLDWIDE CENSUS PROGRAM
(DUALabs, Inc. and Delta Systems, Inc.)

A Report Prepared By:
CONSTANTINA SAFILIOS-ROTHSCHILD, PH.D.
BARRY EDMUNSTON PH.D.
FRFDERIC GRANT, M.B.A., C.D.P.

During The Period:
MARCH 22, 1982 - APRIL 7, 1982

Supported By The:
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
(ADSS) AID/DSPE-C-0053

AUTHORIZATION:
Ltr. AID/DS/POP: 8-24-82
Assgn. No. 532142

PREFACE

This report contains the findings of an interim evaluation of AID Technical Assistance Contract No. DSPE-C-0027, dated October 1, 1978. Under this contract, the principal contractor, DUALabs, Inc., and its technical subcontractor, Delta Systems, Inc., have performed work in support of the 1980 Worldwide Census Program, including the topical project known as Census Data on Women.

For this evaluation, a three-person team was assembled that included Constantina Safilios-Rothschild, Ph.D., Barry Edmonston, Ph.D., and Frederic Grant, M.B.A., C.D.P.

Dr. Safilios-Rothschild, a foremost expert in census data on women and sex-based demographic indicators in developing countries, is currently a senior associate at the Center for Policy Studies, The Population Council, New York. The recipient of numerous professional awards and the author of a significant number of definitive works in her professional area, Dr. Rothschild contributed to the evaluation her considerable insight into complex state-of-the-art operational areas.

Dr. Edmonston, an assistant professor in the Department of Sociology and International Population Program, Cornell University, is a sociologist with considerable experience in less developed countries (LDCs), including Latin America, the Caribbean, and Bangladesh. Well-grounded in data processing as well as his respective professional area, Dr. Edmonston commented insightfully in all areas of the evaluation.

Mr. Frederic Grant, the team leader of the evaluation, is an independent data processing consultant with considerable experience in the evaluation of technical assistance contracts. Mr. Grant, in addition to extensive knowledge of data processing technologies, has a background in cross-cultural psychology and field-based social science research. He was the principal technical editor of this report.

The evaluators believe that during their efforts they correctly and objectively delineated the progress which the contractors have made to date toward satisfactory completion of their authorized scope of work.

The authors wish to express their appreciation to the staff of AID/Jamaica, especially Mr. Terrence Tiffany, chief of the Division of Health, Nutrition and Population (HNP), and Mrs. Marlene Tomlinson, a health and family planning development specialist, for taking the time to ensure that the consultants' stay in Jamaica was productive. In addition, the authors wish to express their thanks and appreciation to Mr. Howard Lusk and Ms. Ginny Martinez, Office of Population, AID/Peru, and

Dr. Graciela Valdez, director, National Institute of Statistics, Lima, Peru, who possess extremely able and professional staffs. Also, Mr. Robert Bair, International Statistical Program Center, U.S. Bureau of the Census, must be mentioned for his cooperation during the evaluation.

C O N T E N T S

	<u>Page</u>
PREFACE	i
EXECUTIVE SUMMARY	ix
ABBREVIATIONS	xi
I. INTRODUCTION	1
Background	1
Contractors	1
Scope of Evaluation	1
Itinerary	2
Organization of Report	4
II. TECHNICAL ASSISTANCE ACTIVITIES	5
Overview of Activities	5
Software Enhancements	8
Consultant Roster	8
Trip Report: Jamaica Contract Activities (July 17-21, 1979 and October 24, 1979 - November 8, 1979)	11
Trip Report: Peru Contract Activities (January 31, 1981 - February 27, 1981; July 16-25, 1981; and August 17-29, 1981)	17
III. TECHNICAL PRODUCTS	21
Background	21
Software Report	21
Hardware Feasibility Report	23
CONTROL	24
IV. CENSUS DATA ON WOMEN	27
State-of-the-Art Report: Comprehensiveness and Usefulness	27
DUALabs' Reviews of the Report	31
Use and Potential Distribution	31
Timing and Technical Quality of Narrative Framework	32
Use and Effectiveness of Census Data on Women	35
Possible Revisions to Improve Usefulness	35
Cost-Effectiveness of Conferences	35
Progress in Preparing Country-Specific Reports	37
Contractor's Technical Knowledge and Initiative	38

Information on and Provision of Technical Assistance 39
Recommended Efforts to Complete the Report 40
General Comments 41
Recommendations for Future Orientations and Activities 43

V. CONCLUSIONS AND RECOMMENDATIONS 45

Technical Assistance Contracts 45
Current Contract Action-Items 47

 A. Technical Areas 47
 B. Census Data on Women 48

Conclusions: DUALabs, Inc. 48
Conclusions: Delta Systems Consultants, Inc. 49

APPENDICES

- Appendix A: Excerpts from Brochure on DUALabs
- Appendix B: Information on Delta Systems Consultants, Inc.
- Appendix C: Scope of Work of Evaluation of 1980 Round of Censuses Contract with DUALabs
- Appendix D: 1980 Round of Censuses (902-0622): AID Interim Contract Evaluation
- Appendix E: Memoranda and Notes on Population Census
- Appendix F: Memorandum on Expenditures, AID Contract DSPE-C-0027 (May 5, 1982)

EXECUTIVE SUMMARY

The purpose of AID Technical Assistance Contract No. DSPE-C-0027, dated October 1, 1978, is to provide technical assistance and support to the 1980 Worldwide Census Program in three general areas: software, hardware, and census data on women. To this end, the contractors, DUALabs, Inc., and Delta Systems, Inc., have provided in-country consultation services and have produced tangible contract products.

DUALabs, Inc., the principal contractor, has had primary responsibility for the contract tasks for census data on women, including the production of a state-of-the-art report in this topical area and other documents reviewed in this evaluation. In their current form, these products lack conceptualization and do not state comprehensively the issues of this complex subject. Work by a census data on women consultant is recommended to salvage the contractor's current efforts.

Delta Systems, Inc., the technical contractor to DUALabs, has demonstrated technical competence in conducting its major activities. Follow-up monitoring of its consulting assignments has, however, been weak, and the subcontractor has been relatively passive in reviewing situations in countries where assistance has been provided. Future work in technical consulting and completion of the CONTROL software package are recommended, but as prioritized activities.

ABBREVIATIONS

AID	Agency for International Development
AID/W	Agency for International Development, Washington
ANF	Area Name File
APHA	American Public Health Organization
BMDP	Biomedical Statistical Programs
BUCEN	Bureau of the Census
CARICOM	Secretariat, Caribbean Commonwealth
CDPU	Central Data Processing Unit
CMF	Census Master File
CONCOR	Consistency and Correction
CSO	Central Statistical Office
CTO	Cognizant Technical Officer
DOS	Department of Statistics
DUALabs	Data Use and Access Laboratories
FAO	Food and Agricultural Organization
FY	Fiscal Year
HNP	Health, Nutrition, and Population
IBM	International Business Machines
ILO	International Labor Organization
INE	National Institute of Statistics (Peru)*
ISPC	International Statistical Program Center

* Instituto Nacional de Estadística.

LDC	Less Developed Country
NSO	National Statistical Office
NTIS	National Technical Information Service
PDG	Phase Detail File
PES	Post Enumeration Survey
PPC	Program and Policy Coordination
SDTS	Statistical Data Tabulation Service
TDY	Temporary Duty
UCLA	University of California, Los Angeles
U.N.	United Nations
UNESCO	United Nations Education, Scientific and Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WID	Women in Development

I. INTRODUCTION

I. INTRODUCTION

Background

This report, commissioned by the Office of Population, Agency for International Development (AID), through the American Public Health Association (APHA), is an evaluation of AID Contract No. DSPE-C-0027, dated October 1, 1978, totaling \$2,043,742. As outlined in the statement of work prepared for the contract, the intent was to provide consultation and support for the 1980 Worldwide Census Program in three general areas:

- software (including the evaluation and enhancement of editing, tabulation and census administration packages);
- hardware (the determination of what computers are suitable for census file processing in less developed countries [LDCs]); and
- census data on women (identifying appropriate areas for the tabulation of census data on women and designing a state-of-the art tabulation plan to present available census data).

To accomplish the objectives, specific tasks were delineated and tangible products (contract deliverables) were identified which are fundamental to the kind of assistance outlined above. A list of these tangibles appears in the discussion on the following page.

Contractors

Data Use and Access Laboratories (DUALabs), Inc., is a nonprofit, tax-exempt corporation, chartered under the laws of the District of Columbia. The firm's offices are located in Arlington, Virginia. (Additional general information on DUALabs is contained in Appendix A.)

Beta Systems Consultants, Inc., is a data processing subcontractor under the AID contract and is located in Coral Gables, Florida. (Additional information on this firm is provided in Appendix B.)

Scope of Evaluation

The scope of this evaluation is set forth in Appendix C. The AID technical staff informed the contractors (in writing) of the details and scope of the evaluation in advance of the review. The evaluators generally

sought to examine the progress to date of all contract activities. The following four areas were the focal points:

1. The quality and completeness of tangible contract products, including:
 - the basic requirements and options reports on software;
 - the feasibility report on hardware;
 - the CONTROL software system;
 - the special plan for tabulating data on women;
 - the state-of-the-art report on census data on women;
 - an illustrative package of census data on women;
 - special country reports on census data on women; and
 - a roster of consultants.
2. Technical consultations, including the quality and thoroughness of short-term consultants provided to developing-country officials for census operations, as represented by Jamaica and Peru.
3. Administration of the Census Data on Women Project.
4. General management, and administrative and staffing issues.

Each of these topics is discussed in separate chapters of this report. To maintain continuity during the review process, the authors would refer readers to the earlier, June 1980, AID interim evaluation of DUALabs' and Delta Systems' efforts (see Appendix D).

Itinerary

A complete itinerary for the evaluation is shown in Exhibit I-A.

The evaluation began in mid-March, 1982, when all three members received copies of briefing and subject-area materials for review. (Included among these materials was a copy of the contract in its entirety.)

Exhibit I-A

ITINERARY FOR EVALUATION

<u>Date</u>	<u>Purpose</u>
March 9	The specific topics and issues to be covered in the evaluation were sent to DUALabs by AID CTO.
19	Background information on contract evaluation distributed to the contract evaluation team.
25	Evaluation team briefing, AID, Rosslyn, Virginia. DUALabs staff interviewed and documents and papers examined as specified in the scope of work for the evaluation (Arlington, Virginia).
26	Technical consultants interview Delta Systems staff, Coral Gables, Florida.
29	Technical consultants commence in-country technical activities in Jamaica.
31	In-country activities begin in Peru.
April 3	Technical consultants return to CONUS.
5	AID project monitor, Dr. John Chao, contacted by telephone by data processing consultant.
9	ISPC staff contacted and interviewed by telephone by data processing consultant.
12	AID evaluation team debriefed, Rosslyn, Virginia.

On March 25, 1982, a site inspection was made of DUALabs' facilities. During this inspection, the staff of DUALabs were interviewed and an examination of the project records and files was completed.

Two countries, Jamaica and Peru, were selected for in-country observation. The bases for the selection were these countries' close proximity to the United States and the representativeness of the technical assistance provided. During these trips, the technical consultants evaluated the specific project activities of the subcontractor, Delta Systems. The findings of these in-country investigations are presented in Chapter II.

Principally because of time limitations, no personal contacts with foreign country authors were arranged for the WIO expert. The conclusions about Contract Task 2 are based on an analysis of contract tangibles, in addition to the contents of interviews and the files of DUALabs staff.

Organization of Report

This report is organized into chapters, each of which covers one or more of the operational areas that were assessed.

In Chapter II, the major international technical assistance aspects of the contract are identified and elaborated. Also discussed are the findings of the two in-country assessments of work completed by Delta Systems and other representative work in this area.

Chapter III contains a succinct discussion of the feasibility studies of hardware and software and the software product, CONTROL, developed at the beginning of the contract. Specific recommendations on the revision and disposition of these products are outlined.

Chapter IV represents an inclusive accounting of the contract activities conducted as part of the Census Data on Women Project. Specific sections contain details on the numerous and complex issues associated with this significant subject. Recommendations are provided at the conclusion of each major discussion.

Chapter V contains the evaluators' conclusions and recommendations, including a discussion of the issues that bear upon private sector technical assistance contracting. Specific conclusions about the competence of the contractors are again summarized, as is the necessity for remedial work in certain areas. Action-items are identified to alert the cognizant technical officer (CIO) at AID to problems for which immediate consideration may be appropriate.

This report contains five appendices, the last of which provides information on the forthcoming Jamaica population census. The information in this appendix reinforces many of the evaluators' findings on technical assistance, particularly in Jamaica, and mentions areas where specific, additional assistance may be desirable.

II. TECHNICAL ASSISTANCE ACTIVITIES

II. TECHNICAL ASSISTANCE ACTIVITIES

Overview of Activities

As a technical subcontractor to DUALabs, Delta Systems Consultants, Inc., has performed in-country consultation services and, on occasion, has made use of outside consultants. Exhibit II-A lists all the international consultation trips made by Delta Systems from the beginning of the project to March 1982. Exhibit II-B presents summary statistics for the international consultation trips. A total of 24 trips was made by Delta Systems, including trips of one or more persons and for one or more purposes. A brief summary of findings is presented below.

- By region, Latin America was the site for the majority of the trips, with Africa and Asia accounting for approximately equal numbers of the remaining trips.
- By year, approximately 40 percent of the trips was made in the first year (1979) of the project. Five trips were made in 1980; six were made in 1981; and two were made in the first three months of 1982.
- By personnel, more than 80 percent of the trips involved Delta Systems staff, with only six trips involving five outside consultants. Julio Ortuzar and Richard Buhrman of Delta Systems made the most frequent trips; together, they account for more than one-half of all consultation trips.
- By purpose, the largest percentage of consultation trips involved aspects of software (49 percent of all trip purposes). Examined in more detail, the majority of software consultation was for COCENTS (6 trips) and CONCOR* (4 trips). The second main purpose of the trips was to conduct workshops (21 percent of all trip purposes), including COCENTS workshops (1 trips) and CONCOR workshops (2 trips). Software consultation and software workshops combined accounted for approximately 70 percent of all trip purposes. COCENTS and CONCOR software activities contributed to the main share of consultation on software, or approximately one-half of all trip purposes.

* Consistency and Correction.

Exhibit II-A

INTERNATIONAL CONSULTATION TRIPS
(By Country, Date, Personnel, and Purpose)

<u>Region</u>	<u>Country</u>	<u>Dates</u>	<u>Personnel</u>	<u>Purpose</u>
Africa	Rwanda	3/80	Shiller, Canales	Software Consultation, COCENTS, COCENTS Workshop
	Sahel	2-3/79	Willard, Schor	Hardware Assessment
	Somalia Republic	9/79	Buhrman	Hardware Consultation
	Tanzania	8-9/79	Buhrman	Software Consultation, COCENTS, COCENTS Workshop
	Uganda	3/80	Shiller	Software Consultation, COCENTS
	Zimbabwe	5-6/81	Willard	Hardware Consultation, Software Consultation, General
Asia	Philippines	8-9/80	Shiller, Ferri	Software Consultation, CONCOR, CONCOR Workshop
	Thailand	7-8/79	Boisin	Census Consultation
		11/79	Brunsmann	Census Consultation
		1/80	Brunsmann	Census Consultation
Europe	England	11/79	Ortuzar	Software Consultation, CONCOR
Latin America	Argentina-Chile	12/81	Ortuzar	General Consultation and Meetings
	Dominican Republic	6/80	Willard, Buhrman	Census Consultation
	El Salvador	1-2/79	Ortuzar	CONCOR Workshop
		7-8/79	Ortuzar	Software Consultation, CONCOR
		10/79	Ortuzar	Software Consultation, CONCOR
	Haiti	12/81	Buhrman	Software Consultation, COCENTS
		2-3/82	Buhrman, Shiller	COCENTS Workshop
	Honduras	?/81	Ortuzar	Software Consultation, COCENTS
		3/82	Ortuzar	Software Consultation, General
	Jamaica	7/79	Willard	Hardware Consultation
		10-11/79	Buhrman, Shiller	Software Consultation, COCENTS, COCENTS Workshop
Peru	1-2/81	Ortuzar, Buhrman	Software Consultation, CONTROL	
	7-8/81	Ortuzar, Buhrman	Software Consultation, CONTROL	

Exhibit II-B

SUMMARY STATISTICS FOR INTERNATIONAL CONSULTATION TRIPS

	<u>Number</u>	<u>Percent</u>
Trips by Region		
Africa	6	25
Asia	4	17
Europe	1	4
Latin America	13	54
TOTAL, Trips	24	100
Trips by Year		
1979	11	42
1980	5	21
1981	6	25
1982	2	8
TOTAL, Trips	24	100
Trips by Personnel		
Willard	4	12
Ortuzar	9	28
Buhrman	8	25
Shiller	5	17
Consultants	6	19
TOTAL, Personnel Trips	32	100
Trips by Purpose		
1. Total Hardware Aspects	4	14
a. Hardware Assessment	1	
b. Hardware Consultation	3	
2. Total Software Aspects	14	48
a. Software Consultation, CONCOP	4	
b. Software Consultation, COCENTS	6	
c. Software Consultation, CONTROL	2	
d. Software Consultation, General	2	
3. Total Workshops	6	21
a. CONCOP Workshops	2	
b. COCENTS Workshops	4	
4. Census Consultation	4	14
5. General Consultation and Meetings	1	3
TOTAL Trips, Purposes*	29	100

* Includes one or more purposes per trip.

*In summary, technical assistance activities have been focused primarily on Latin America, with more limited attention to Africa and Asia. The project was most active in the first year, and it has been less active during the past two years. The major overseas activity has involved consultation in software, especially COCENTS and CONCOR.**

Software Enhancements

Almost one-half (7 of 14) of the overseas trips made by Delta Systems personnel involved software enhancements. The majority of this work dealt with the COCENTS census tabulation package (six trips) and the CONCOR census editing package (four trips). Two trips each pertained to the CONTROL census management package and general software problems. Some of these trips resulted from informal contacts, especially work in Latin America with Julio Ortuzar. The majority of the non-Latin American work stemmed from requests for assistance for national statistical offices (NSOs) that were submitted either to AID missions or to Delta, and then referred to a local AID mission.

In preparing responses to specific requests for software enhancement, Delta drew on its hardware and software files on the country in question; also, it consulted more or less formally with the appropriate United Nations (U.N.) agency or the United States Bureau of the Census (BUCEN). Typically, it went to the various NSOs with software programs that were as ready as possible for immediate installation. When necessary, it tailored the software. It should be noted that more than one-half of the responses to requests for software enhancements also included a workshop to train NSO personnel to use COCENTS and CONCOR.

Consultant Roster

In connection with overseas and domestic activities, the contractor was to develop, maintain, and regularly update a list of consultants who, whenever they were needed, could serve on short-term assignments. This roster of consultants was to show:

- specific area of expertise (census field operations, sampling applications, etc.);
- specific experience; and
- language ability (FSI rating, if available).

* NTS Research Corporation was awarded on September 30, 1980, AID Contract No. DSPE-C-0091. This independent contract to provide assistance in the development, installation, and use of (Cobol) CONCOR eliminated the need for Delta Systems to continue CONCOR-related work.

During the contract evaluations, it was found that Delta Systems has a small, in-house list of consultants which is used primarily to facilitate its own work. The firm has used outside consultants for approximately 19 percent of all international consultation trips (see Exhibit II-B); usually, it locates its consultants on the basis of prior association and proximate location.

DUALabs, the primary contractor, has developed a roster of consultants that is more extensive than Delta's. The file, compiled in 1979, is maintained in DUALabs' offices in Arlington, Virginia. The roster of consultants includes 179 names. All the names are cross-classified by current residence (almost all the consultants live in the U.S.), affiliation (these are primarily academic, but there are some government, international, and private affiliations), language (48 languages, with fluency indicated, are represented), country experience (most LDCs are represented), and subject skills.

To compile the roster, DUALabs made a selection from among the persons who volunteered information on a two-page questionnaire. A review of the roster indicates that it is a reasonable cross-section of individuals for international consultations and an adequate, representative list.

A review of the short-term consultations performed by Delta Systems indicates that the firm has responded appropriately and promptly to the requests of less developed countries (LDCs). The in-house staff are competent and have themselves been able to handle the majority of requests for consultations. When Delta Systems has needed outside consultants, it has used adequate-to-excellent personnel.

An inspection of the consultation trips shows that software consultation has been the main source of service. Software expertise in editing and tabulation procedures often is lacking in LDC census operations, and Delta Systems has filled a strong need with its services. Moreover, the CONCOR and COCENTS packages usually require special adaptation for local computers. Delta Systems is particularly experienced in this task and has been successful in efficiently adapting software programs.

The in-country contract evaluation activities pointed up a number of problem areas which deserve further examination by the AID cognizant technical officer (CTO). With the exception of informal initiatives in the Latin American region, it appears that the contractor did not take an active role in creating initiatives for software enhancements and workshops. It appears that a private contractor is limited in its prerogatives to establish working contacts with foreign national statistical offices (NSOs). Although a private contractor cannot make direct solicitations of technical assistance, it can, nevertheless, work through the AID CTO to be more active in surveilling census processing, and identifying areas where assistance might be needed.

On the one hand, the contractor demonstrates skill and efficiency in installing software enhancements and in training personnel to work with the software system. But, on the other hand, high staff turnover and weak on-the-job training at national statistical offices results in unused--but necessary--software packages.

The interim contract evaluation, dated June 1980, contains a recommendation that "some kind of follow-up COCINTS, and/or CENTSAID training might be useful to reinforce earlier installation." During this evaluation, little evidence was found to indicate that the contractor has taken the initiative to provide such follow-up.

Trip Report:

Jamaica Contract Activities
(July 17-21, 1979, and October 24, 1979 - November 8, 1979)

Objectives of In-Country Evaluation

The objectives of the in-country evaluation were to:

1. Establish the nature, type, and appropriateness of assistance given by the contractor to AID/Jamaica and the Department of Statistics (DOS), Government of Jamaica, in connection with the 1980 Round of the Census. This assistance included:
 - a. Hardware consultation;
 - b. COCENTS installation and training; and
 - c. Census technology and census administration.
2. Determine the long-run impact of the assistance, including follow-up efforts.
3. Determine whether further assistance in connection with the forthcoming census effort can be delivered in a timely and effective manner under the current assistance contract.

Persons Interviewed

The following persons were interviewed:

● USAID/Jamaica

Mr. Terrence Tiffany, Chief, Health, Nutrition, and Population Division

Mrs. Marlene Tomlinson, Specialist, Health and Family Planning Development

- Department of Statistics, Government of Jamaica

Mrs. Carmen Refarlane, Director

Mr. Rolana Booth, Assistant Director

Ms. Grace Robinson, Programming Supervisor

Staff

- United Nations Fund for Population Activities (UNFPA)

Dr. Hasse B. Gaenger, UNFPA Coordinator

Mrs. Cheryl Dasa, UNFPA Representative

Staff

- Ministry of Education, Government of Jamaica

Mrs. Patricia Cargill, Director, Common Entrance Examination

Mr. John Reed, Operator, IBM 3881

Background of Contractors' Activities

In compliance with an official request, dated May 22, 1979, to USAID/Jamaica from the Ministry of Finance and Planning, Delta Systems consultants traveled to Jamaica (July 17-21, 1979; Trip Report No. 11) and met with representatives of the Department of Statistics. At the conclusion of their meeting that lasted two days, a detailed list of equipment requirements and recommendations for COCENIS installation and a workshop had been produced.

In addition, a recommendation was made that the procurement of an IBM System 3881 be funded under the current assistance contract. The reasons for this recommendation were:

1. IBM could not deliver the system so that it could be used to process the census.
2. The existing System 3 was being upgraded and would support a census tabulation package.

Subsequent to this recommendation, a second trip was made to Jamaica (October 24, 1979 - November 8, 1979), whereupon COCENTS was installed and tailored to the System 3 installation at the Department of Statistics. COCENTS classes were held for approximately five days, and a follow-up workshop was conducted which lasted approximately two days.

Findings

A summary of the principal findings is provided below.

1. The contractor, Delta Systems, gave assistance which was, at the time of this visit, appropriate for the needs of the Department of Statistics. This assistance included:
 - a. The recommendation not to fund an IBM System 38;
 - b. The installation of COCENTS on the IBM System 3 (still operational); and
 - c. The teaching of a COCENTS workshop.

2. All assistance was given in two visits during mid-year 1979; no subsequent assistance was provided. Evidence suggests that further assistance could have been given to the Department of Statistics in the areas listed below. However, because of a commitment from the United Nations Fund for Population Activities (UNFPA) to provide funds--a commitment which was later retracted--these areas were left unpursued.
 - a. Questionnaire Design

David Beckler, reporting for the UNFPA, has suggested that the questionnaire in use in the Eastern Caribbean, as well as in Jamaica, can be improved significantly.
 - b. Equipment Procurement

Because no funds from the UNFPA were secured, the equipment and supplies recommended for procurement were never obtained. (A description of this equipment is found in Trip Report No. 11, dated July 25, 1979.)
 - c. Editing Assistance

Despite the fact that Jamaica lacks an editing package per se, it is apparent that the programming staff could have

benefited, and now benefit, from subject matter and general data processing assistance in census editing. (Edit programs which were developed earlier must now be converted and tested on the new system.)

3. There is currently a need for the installation of COCENTS and related workshop activities in connection with the tabulation phase of the current census. (See Exhibit II-C for information on the upcoming Jamaican census.) This phase will begin early in 1983. This need is a result of the acquisition of a new computer, the IBM System 38.
4. Evidence suggests that there is a need for an optical reader. (Hardware consultation by the contractor or the designated representative is appropriate.) Such a procurement, however, is beyond the scope of this contract.
 - a. Under conservative assumptions, it would take 29 weeks of uninterrupted use of the Ministry of Education's IBM 3891 machine to process the census questionnaires. This calculation assumes 2.2 million questionnaires.
 - b. The Government of Jamaica would significantly benefit from the presence of an additional optical reader for use not only in the census, but also in back-up processing, in light of the importance of the machine in grading the Common Entrance Examination.
 - c. An additional machine would receive fairly frequent use by the Department of Statistics for survey work subsequent to the census.
5. There is a need for coursework in basic demographic concepts. This need can be met, in part, through provision of materials to the contractor in concert with efforts to:
 - a. Establish a demographic unit in the Department of Statistics;
 - b. Establish a special demographic section in the National Planning Agency; and
 - c. Establish demographic coursework at the University of the West Indies.

Note: The above findings suggest some major issues about which USAID/Jamaica should be aware. Neil Farrainolo, a representative of the United States Bureau of the Census, General Survey Branch, was in Jamaica earlier this year. His letter (see Appendix E) to USAID/Jamaica supports the general findings contained in this trip report.

Exhibit II-C

INFORMATION ON UPCOMING JAMAICA CENSUS, 1982

Date: June 3, 1982

Duration: 3-4 weeks

The census will be conducted in three phases:

- I. Enumeration Phase.
- II. Data Entry (OPSCAN) (ending by end of year, 1982). Current plans call for using the Ministry of Education's IBM 3881 document reader.
- III. Editing and Tabulation (ending within two years). Work remains to write and test editing programs. Editing tabulation will be performed on the newly installed IBM System 38. COCENTS will be the tabulation package.

Approximately 5,700 enumerators will be used to cover every household. They will be paid J\$110/ED, plus \$0.50/urban questionnaire, or \$0.60/rural questionnaire.

The total cost of the census will be J\$9 million, to be paid from the consolidated fund.

Trip Report:

Peru Contract Activities
(January 31, 1981 - February 27, 1981;
July 16-25, 1981; and August 17-29, 1981)

Objectives of In-Country Evaluation

The objectives of the in-country evaluation were to:

1. Establish the nature, type, and appropriateness of assistance given by the contractor to AID/Peru and the National Institute of Statistics (INE), with particular regard to the census CONTROL package. Two subobjectives were to:
 - a. Assess the completeness and utility of the CONTROL software product, as perceived by users of the system in the field; and
 - b. Assess the impact of the CONTROL program of the administration and processing of the Peruvian census.
2. Determine the long-term impact of the assistance, including follow-up efforts and software enhancements.

Persons Interviewed

The following persons were interviewed:

- USAID/Peru
Mr. Howard Lusk (by telephone)
Ms. Ginny Martinez, Population Officer (acting)
- National Institute of Statistics
Dr. Graciela Valdez, Director
Alejandro Santiago, Director, Computer Center
Mario Castillo Baraona, Systems Analyst
Staff

Background of Contractor's Activities

Staff from Delta Systems Consultants made two trips to Lima, Peru, in connection with the installation, testing, and use of the census CONTROL package. The first trip, in early 1981 (January 31 - February 27), involved the installation and modification of the package to the WANG computer used by Informatica.

In addition, the system was field-tested. This activity revealed the need for several modifications and enhancements to system programs.

On the second trip (July 16-25, 1981, and August 17-29, 1981), staff concentrated on the implementation of a revised CONTROL system and problems with the applications of CONTROL to the specific case of Peru's population census.

Findings

A summary of the principal findings is given below.

1. The director and personnel of the National Institute of Statistics are extremely knowledgeable and competent in their respective fields. They did not require an extensive amount of assistance from the contractor; instead, they contributed significantly to improving the use of the CONTROL package. Their help included:
 - a. Ability to select and print labels for any geographical area in lieu of printing all the labels at once;
 - b. Suggestions about the headings and format of information in specific reports to clarify the subject matter (some suggestions have not been implemented); and
 - c. Suggestions to minimize the complexity of the CONTROL system by reducing its administrative requirements.
2. In general, although the use of pressure-sensitive labels is theoretically sound, it is too expensive. The CONTROL system should, therefore, be modified to produce a different administrative form for general use.
3. The CONTROL package was used extensively and is still in operation, but, in its current installation, it is perceived to be complex because of its administrative requirements.

4. Delta Systems personnel helped to edit and tabulate the questionnaires.

CONTROL systems documentation, although generally considered to be well-written, needs to be expanded in certain areas. It was not believed that one could operate the system using the manual alone.

In actual operation, the system was found to be useful in spotting errors in the completeness of enumeration. It was not used for the entire census, however.

The director and staff of the INE were pleased with the work of Delta Systems and thought that the firm was responsive and conscientious. A further request for Delta's assistance to enhance certain aspects of CONTROL for survey work and to modify COCENTS is being drafted at this time.

III. TECHNICAL PRODUCTS

III. TECHNICAL PRODUCTS

Background

As specified in the statement of work of the contractor, in this case, the contractor's designee, Delta Systems, Inc., was responsible for the production of three major technical products:

- a software basic requirements and options report;
- a hardware feasibility report; and
- a CONTROL software system.

Generally, these products were completed in a timely manner, and they represent the cost-effective production of information and systems. However, specific weaknesses can be identified in all three task areas. These weaknesses, and specific recommendations to correct them, are discussed below.

Software Report

Delta Systems Consultants, Inc., was employed to complete a software inventory report that would index tabulation, editing, and census control packages. In addition to evaluating current software packages, Delta proposed to identify the enhancement features of the packages and to compare options for adaption by users of the packages.

As part of its effort, Delta completed during the first year of the project a report entitled "Review and Evaluation of Major Census Software Packages." The first three sections of this report include an editing report on the United Nations (U.N.) package, known as UNEDII, and several versions of the package known as CONCOR; a tabulation report on nine tabulation packages; and a brief report on options and enhancement.

The description of the editing packages is useful as a compendium of the distinctive features and advantages of various packages. It covers comprehensively the editing packages available, and includes accurate descriptions of the desirable qualities of editing programs. The description of census errors is particularly helpful, for it places the editing packages in a balanced perspective.

The editing section of the report could be improved in several ways. First, as suggested in the 1980 interim evaluation, it would be helpful for readers to have a table of overall comparisons. Second, readers would benefit from additional information on the software packages (e.g., the address of the person or organization responsible for the development and distribution of the software) and sources of additional information. Third, it would aid prospective users to show, to the extent possible, the relative costs, efficiency, and computer requirements of various packages. Some of this information is included in the current report, but the discussion is not always comparable and clear. Fourth, the extended description of the COBOL version of CONCOR is somewhat out of place in the report, and it would be better if it were included in a separate analysis.

The tabulation report contains a comprehensive comparison of the packages available for tabulating census data. The general description in this report is clear, and the main points of the evaluation are balanced. Although the focus of the tabulation report--large-volume data--is correct, advanced statistical analysis is mentioned also, but only two packages, P-STAT and SPSS, which are capable of advanced statistical analysis, are highlighted. Other useful competing packages are ignored, including the biomedical statistical programs, BMSP, of the University of California, Los Angeles (UCLA), which are relatively advanced and will fit on small computers with a FORTRAN compiler, the extremely useful interactive system, MINITAB; and the powerful, increasingly used SAS system, which requires a large, mainframe PLI-equipped computer. Those census offices involved in the analysis of survey data or secondary analysis of samples of census data would require additional references before they could select advanced statistical packages. These criticisms aside, the current tabulation report is a competent, thorough document on tabulation packages specifically tailored to large-volume data.

The tabulation reports should include information on methods to procure the packages and proprietary costs. Except for this one specific limitation, the report is relatively complete.

The software report is valuable as a general reference document and as an in-house guide for technical assistance from Delta Systems. The report has proved to be useful to the contractor and to host countries that receive technical assistance from the contractor. The evaluators found no evidence that the software report is consulted often by either USAID missions or host-country institutions.

There is a need in foreign national statistical offices for specific assistance on software packages. There is certainly a need for technical assistance on software for the tabulation of census data. Requests for such assistance usually are specific enough and sufficiently technical that one or more consultants are needed. A software report may be useful for the work of the contractor, but it is unlikely to replace the need for a short-term specialist. A more valuable software report for consumers

would be a short, descriptive pamphlet that contains general tables comparing computer requirements, desirable features, availability, and procurement.

From another perspective, one considerable value of the software report is that it is a competent, informative inventory that suggests what enhancements and new packages are needed. It is worth emphasizing that the 1979 report has stimulated various enhancements (COBOL CONCOR), the tailoring of the packages to several new computers, and the development of a new census processing package, CONTROL. The production of the report was a worthwhile, one-time exercise, but, unfortunately, the document itself was disseminated inadequately.

Hardware Feasibility Report

To produce this report, the contractor was required to review manufacturers' hardware specifications in relation to the hardware needs of developing countries. This report was to contain an important component, country-specific reference of available hardware which could be used to gauge the limitations on requirements in census data processing.

Upon completion of this report, the contractor was to:

- update the information accumulated during the initial study on a flow basis;
- transmit the accumulated information through reports, or by other means, to developing countries, as appropriate; and
- provide to developing countries upon their request, and with the approval of the AID CTO and the USAID mission, advice on the availability of computer hardware.

The evaluators' in-depth review of the report on hardware revealed that the document is neither accurate nor up-to-date, in spite of the contract requirement. Consequently, it is of limited use. More important, however, in its initial form, it gives no evidence of having been adequately conceived and should have been revised.

The proposition to prepare the document is not in question, but it is clear that from the outset no adequate means was available to disseminate it, and, as a report, its use has been limited.

The following recommendations pertain to the revision and continued use of the document described above.

1. The contractor should be required to revise the document, seeking the advice and consideration of the U.S. Bureau of the Census, as well as other organizations that are participating in technical assistance efforts.
2. Revisions to the report should include, at a minimum:
 - a. Replacement of the manufacturer's hardware sheets with a summarized table of computer types, by processing ability, and other model-pertinent information. This should be done for data entry equipment as well as for mainframes.
 - b. The inclusion of a technical discussion, comprehensible to laymen, on the hardware requirements of census processing.
 - c. The inclusion of a state-of-the-art discussion on the use of mini- and microcomputers in survey and census processing administration.
 - d. An update and revision of the section that contains country references. The country reference form should itself be revised to be more expansive and meaningful in the presentation of information.
3. A mechanism should be put in place to make this report more or less central to the technical assistance umbrella of AID and other interested organizations.

CONTROL

CONTROL is an on-line management reporting system which provides information about the administrative progress of censuses and surveys. Developed in 1980, the system was successfully installed and field-tested at the National Institute of Statistics, in Lima, Peru. The source code of the CONTROL system is 1974 ANSI COBOL, which makes it relatively portable.

During the evaluation, the technical consultants had an opportunity to examine at first-hand the CONTROL system source code. Their inspection revealed that individual program modules were well-written, using structured coding techniques and global system variables. Operationally, the system is relatively complex, and considerable training seems to be needed to understand and take full advantage of its options. It should be noted that Delta Systems was able to successfully tailor its installation of CONTROL to the requirements of the INE.

A review of the control system documentation in both English and Spanish showed that many of the informational elements which should be required of this kind of system documentation are present. Little revision is required of, for example, Appendix B, "Error Messages by System Programs."

System documentation has been produced in English and Spanish versions and evidences good technical style. The Spanish version of the manual has been enhanced and is an improvement over the English-language version; however, both suffer from the same general problems--problems which usually are seen in the first versions of any technical documentation.

Revisions are recommended in the following areas:

1. The table of contents is not inclusive of all the sections in the manual.
2. The introduction to the CONTROL system is conceptually weak. The presentation here (and throughout the manual) could be strengthened with graphic presentations. Appendix A is inadequate in this respect. Particularly, naive readers must be given a better frame of reference to understand the Area Name File (ANF), the Phase Detail File (PDF), and the Census Master File (CMF) and how the files function in relation to census processing.
3. The presentation of the concepts in each processing stage should be reorganized. An introductory overview of the stages themselves is needed.
4. The description and use of each program in the system must be expanded. Either the discussion should be tied to the current Appendix A of the subject document, or Appendix A should be expanded to include narrative information.
5. There are no installation instructions in the manual.
6. There is no section in the manual which advises the user how to optimize use of the system using manual administrative procedures.

In general, these deficiencies can be corrected without restructuring the framework of the existing document.

The following recommendations pertain to future actions of the AID CTO with regard to the CONTROL system:

1. The contractor should be required to identify countries where it is felt that the CONTROL system can be implemented and properly used. An estimation of the costs of such installations should be required and included in documentation.
2. The AID CIO should formulate a coherent policy for the dissemination of the CONTROL package by other interested agencies. The contractor should be required to establish a liaison with these groups to ensure that CONTROL expertise and support does not evaporate upon termination of the contract.
3. An independent consultant should be retained to conduct an in-depth review of the CONTROL package. This consultant should be employed to establish efficiency paths for the use of the CONTROL package in census field operations.
4. The Office of Contracts, AID, should be consulted about the copyright statement which appears at the front of the CONTROL manual. The contractor should be required to justify in writing his intent and position on this statement.

IV. CENSUS DATA ON WOMEN

IV. CENSUS DATA ON WOMEN

State-of-the-Art Report: Comprehensiveness and Usefulness

The report cannot be considered a state-of-the-art report on census data on women. In its present form, it is neither comprehensive nor useful, for the reasons cited below.

Comprehensiveness. Major and important works on the key issues constraining women from becoming integrated in mainstream development, as well as work on the conceptualization and measurement of women's status, have been omitted from the report. Some of this work was published, and some was not, when this report was prepared, but the studies were available in mimeographed form and were known to persons active in the development community and specializing in the subject of women in development. For example, the following works were omitted:

Kathleen A. Staadt, Women and Participation in Rural Development: A Framework for Project Design and Policy-Oriented Research, Occasional Paper No. 4, Rural Development Committee, Cornell University, 1979.

Ingrid Palmer and Ulrike von Buchwald, Monitoring Changes in the Conditions of Women -- A Critical Review of Possible Approaches, United Nations Research Institute for Social Development, Geneva, 1980.

Constantina Safilios-Rothschild, "The Role of the Family: A Neglected Aspect of Poverty," Staff Working Paper No. 493, The World Bank, Washington, D.C., July 1980. This paper focuses on low-income urban and rural women and girls, the kinds of constraints and coping mechanisms used, and the rationale for needed indicators. It has been available since February 1980, from the World Bank and has been distributed to interested people.

Constantina Safilios-Rothschild, "Female Power, Autonomy and Demographic Change in the Third World," Women's Roles and Population Trends in the Third World, ed. K. Arber, et al., Billing and Sons, London, 1982. The paper includes theoretical conceptualizations and definitions of the status of women and lists of needed indicators. It has been available and widely circulated since the winter of 1979.

Martin King Whyte, The Status of Women in Preindustrial Societies, Princeton University Press, Princeton, New Jersey, 1978.

In general, the report suffers from lack of conceptualization of the status of women, which, in turn, accounts for naive discussions of the "status" of women and of indicators of this status (see, for example, the discussions on pages 12-13 and pages 40-41). The choice of indicators, therefore, tends to be arbitrary, inadequate, and difficult to defend. And the lack of a conceptual framework results in the omission of any discussion as to whether or not, under what conditions, and how and why the lives and behavior of women differ from those of men and require either different or additional development interventions. The complete lack of discussion about this fundamental issue leaves unanswered this question: why is disaggregation of data by sex necessary for development planning?

One would consider the report to be even less comprehensive today, given the definitive work on women's indicators that has been done recently by international experts and specialists in different countries. The following are examples of this work:

United Nations Education, Scientific, and Cultural Organization, Women and Development: Indicators of Their Changing Role, Socio-Economic Studies 3, Paris, 1981.

Cataline H. Wainerman and Tullina Pecchini de Lattes, El Trabajo Femenino en el Banquillo de los Acusados. La Medicion Censal en America Latina, Terra Nova, San Francisco, Mexico, 1981.

Constantina Safilios-Rothschild, Social Impact Analysis: A Model and Strategy for Implementation in Development Assistance, Food and Agricultural Organization of the United Nations, Rome, 1981. The study includes a comprehensive list of indicators for monitoring and evaluating the impact of development projects on men and women, with rationales based on existing evidence.

Constantina Safilios-Rothschild, "Comments on Pilot Reports on Socio-Economic Indicators for Monitoring and Evaluation of Agrarian Reform and Rural Development Regarding Adequacy of the Indicators for Monitoring and Evaluating the Role of Women, Small Farmers and Landless Laborers," FAO/UN, Rome, 1982. The document consists of four reports, one for each of the four regions, Asia, Africa, Latin America, and the Middle East.

Although the contract does not require the use of indicators per se, as opposed to data, an analysis of women's status necessarily involves indicators. The fact that the contractor did recognize the importance of indicators is evidenced by a chapter on this subject in the state-of-the-art report.

Usefulness. In its present form, it is difficult to see what audience would find the state-of-the-art report useful. Even though its primary audience is selectively the authors involved in the project, the report is not sufficient to guide even their efforts. The substance of the report is problematic principally for the following reasons:

- Lack of conceptualization of the status of women--a foundation on which to base a discussion of need for and kinds of indicators required.
- Failure to build into indicators women's problems in LDCs. Low-income urban and rural women in developing countries face many problems which must be built into the indicators, if their status is to be assessed. For example, emphasis must be placed on the need for information about women's ownership of and access to the means of production, namely, for rural women's ownership of and access to the means of production, or right to cultivate land; access to credit, which almost always is available only through cooperative channels; and access to agricultural information and training. There is no mention of the need to locate data on women's cooperative membership, usually available in ministries of cooperatives (or equivalent ministries), or data, disaggregated by sex, on agricultural extension workers, agronomists, veterinarians, and foresters.

Another example of the apparent lack of familiarity with the reality of women's lives in LDCs is the dismissal of an indicator used in the report, Women in Kenya. That indicator, the "proportion of male heads of household having more than one wife," is treated as idiosyncratic, appropriate for Kenya. It is a very important indicator for all the African region and pertains to the status of both men and women. Consideration of a monogamous, as opposed to polygamous marriage (i.e., first or second wife) and the number of wives are important indicators of the woman's status that need to be examined in relation to other indicators, including education, fertility, type and extent of economic activity, participation in cooperatives, and infant, child, and maternal mortality rates.

- The use of insightful pieces and bits of information and comments from some of the consultants' reports which are not always connected meaningfully to the rest of the text, and failure to make explicit the importance and policy implications of the quoted statements. For example, the meaning of the statement in the first sentence on page 39 is lost among many other statements--but it is one of the most important reasons for the underreporting of women's involvement in agriculture. The provision of examples of actual censuses which changed their definition and reported largely different numbers of women involved in agriculture

would have helped to underline the significance of the statement. Similarly, the citation of actual examples would have emphasized the significance of statements in the first paragraph on page 29.

Again, in explaining why women's involvement in agriculture is underreported, it must be recognized also that in some Latin American countries, because of a prevailing and powerful patriarchal ideology, espoused by both men and women, wives often are reluctant to say that they cultivate the fields. They will, however, respond positively to questions about their performance of particular agricultural tasks (see Constantina Safilios-Rothschild, "The Role of Women in Modernizing Agricultural Systems," AID Grant OTR-147-80-97, WID/AID, May 1981).

- Suggested dependency ratios (page 21) that tend to have limited usefulness, especially among low-income men and women who work from five years of age until death. Also, the emphasis on education as the key indicator of the status of women is exaggerated in the report. In LDCs, education is only one of several indicators; it cannot alone predict women's status.
- The discussion (pages 5-6) of the programs on women and development of the World Bank and other international organizations and the discussion of the "acceptance of the importance of women as a factor in national development" as treated in national development plans. These discussions seem to be based on official documents and descriptions and tend, therefore, to show--inaccurately--that women's issues often are addressed separately, isolated from main development concerns and issues, and not integrated throughout all development sectors. Also, it must be noted that little information is presented on the International Labor Organization's (ILO's) ongoing applied research programs on women and development, and nothing is reported about the relevant activities of the United Nations Children's Fund (UNICEF), UNESCO, the Food and Agricultural Organization (FAO), the World Health Organization (WHO), and other U.N. specialized agencies and centers that conduct work directly related to indicators of the status of women.

Unfortunately, even if the minimal substantive elements of the contract had been met, it is doubtful that the present version of the state-of-the-art report would have any general use.

It is not likely that scholars in any country or policymakers could use this report in its present form. For scholars in any country who are in some direct way involved in development, the report would be considered to be lacking. For statisticians, it would be unconvincing. And for policymakers, it would not be useful because, as Joy Dryfoos, one of the consultants, correctly pointed out, policymakers need to know what the interpretation and

meaning are of existing data on women (even if they are not complete or perfect) and what their policy implications are for programmatic development assistance. In this respect, AID should have enunciated these concerns more fully in the language of the contract. The report and, indeed, the entire project, place more emphasis on the formatting of tables and the graphic presentation of data than on the meaningfulness of the statistics. Perfect tables by themselves are not sufficient or useful, and in most cases they would not be feasible at this time. Concrete development projects in a number of countries often can provide powerful examples of the meaning and policy implications of existing realities to convey the status of women. These kinds of citations are probably more useful than perfect tables or illustrations.

DUALab's Reviews of the Report

The report was reviewed for DUALabs in December, 1979, by consultants Nadia Youssef and Joy Dryfoos. Although the two reviewers raised some important points, they would have been more helpful had they emphasized the importance of and need for a conceptual framework or an in-depth realistic developmental context--two critical weaknesses of the report. The shortcomings of the review are attributable in part to the brief time allotted to the reviewers and in part--and more important--to the fact that the reviewers lacked the expertise to provide all the necessary inputs. Dr. Youssef, for example, pinpointed the need to present, on the basis of field experience and findings, "areas in which conditions, life experiences, and behavior of women are different from those of men," and she expressed concern about the lack of a conceptual framework. She went no further, however, though she might have provided a helpful conceptual framework, or references to existing work. She did mention a number of important indicators, but these seem to have been selected arbitrarily, because they were not conceptually grounded, and it is not evident why they were more significant than alternative sets of indicators. Dr. Dryfoos professed to have little experience with indicators of women in LDCs (why, one may ask, was this particular consultant chosen?), but she suggested that "teaching" people how to use census data on women may be much more important than collecting more and better data and presenting them in the best tabular and illustrative formats.

Use and Potential Distribution

The report does not seem to have been widely distributed; the contract does not provide for wide dissemination and, under these circumstances, this may be fortunate, indeed. It is difficult to accurately assess the extent to which the report has been used, if at all, by the prospective authors of the country-specific reports.

In its present form, the report should not be made widely available. In view of the fact that another stage of review is anticipated in the contract, the key questions are whether or not the report can be salvaged, in what ways, and by whom.

Any revision must be quite extensive and must be undertaken by a consultant who is an expert on women's indicators. The purposes of the revision should be to enrich the report with a strong conceptual framework for discussions of the status of women (in clear language, and not jargon) and to derive the important indicators of the status of women from field-grounded experience. The revised report should contain illustrations and a discussion of the use and concrete policy implications of existing data on women's status in a number of LDCs for development planning and projects, as well as for the monitoring and evaluation of ongoing development projects. Reorientation of the report would greatly enhance its usefulness not only for the authors, but also for statisticians and policymakers in LDCs, and facilitate the integration of women's issues in mainstream development planning, programs, and projects.

Timing and Technical Quality of Narrative Framework

It is difficult to determine the timing of this framework with regard to authors' work on the report, because different drafts were made available at different times from 1979 on. Also, from the correspondence and documents made available during the evaluation, it does not seem that the majority of the authors have begun to prepare their reports.

With respect to the technical quality of the framework, it must be pointed out that the framework was reviewed more thoroughly than the state-of-the-art report, and it benefited from a wider range of comments and suggestions. Not all helpful comments and suggestions were followed, however, especially when they raised fundamental questions about the content of the framework.

The narrative framework suffers from several major problems and omissions. These weaknesses are identified below.

1. The importance of the policy implications of the indicator "sex of head of household" is not conveyed. (This indicator is especially powerful when it is disaggregated by rural/urban and district, and by type of female head of household--legal as opposed to de facto; and when used as a disaggregation for a variety of data collected from each household, even when the quality of the data is not perfect (see pages II-2, II-4, and II-3). Given the presentation on page II-3, statisticians,

policymakers, and practitioners would not be convinced of the policy and programmatic relevance for development assistance directed toward female heads, as opposed to male heads, of households. There is no discussion or illustration, with concrete examples, of the different problems, needs, and resources of male- and female-headed households. The sex of the head of household is a crucial indicator. In the comments on the FAO-sponsored pilot studies of socioeconomic indicators, it is highly recommended as a disaggregation.

2. In the discussion of the measurement of socioeconomic status, it is surprising that land ownership (or right to cultivate land [*usu fructu*]) and livestock ownership (or ownership of a boat in fishing villages) are not used as concrete and relatively easily obtainable indicators of socioeconomic status among rural people. (It is understood that such measures are generally not available in census data; however, some mention of their importance and availability would be helpful.) For urban dwellers, corresponding indicators of ownership of the means of production can be devised for men and women. The housing indicators might be interesting indicators of socioeconomic status, but because they would refer only to households, and not to individual men and women, they would indicate only some socioeconomic differences between male and female-headed households. In no other way would any of the alternatives presented be satisfactory in differentiating socioeconomic status, especially among low-income men and women.
3. In education, an important indicator is omitted; namely, the rate of men and women who graduate from primary school. This indicator is important, because graduation from primary school often is the prerequisite for even the lowest levels of available vocational and agricultural training in LDCs.
4. In economic productivity and rural development, rural women are conceptualized only as paid or unpaid farm labor, and not as small or medium-size farmers, and as raising--but not necessarily owning--livestock. Therefore, no models or tables are provided to use relevant information from agricultural surveys or censuses.
5. In health, maternal mortality, child mortality, and mortality rates for other age groups that have been disaggregated by sex are omitted. These data are available in many LDCs, and they are good indicators of the relative health status of men and women.

Overall, probably the most serious technical shortcoming of the framework is the lack, not of data, but of how data serve as indicators

of the status of women. This shortcoming is discussed in a report by consultant Nancy Baster. As Ms. Baster correctly points out, female and male disparities represent significant indicators of the status of women. Indeed, differences (or ratios) between, for example, female and male primary school enrollment rates, or primary school graduation rates, or rates of employees and wage earners, or unpaid family labor are even more important indicators than the percentage of primary school students or graduates, employees and wage earners, and unpaid family labor who are women, because they indicate not only the prevailing level of development in this area, but also existing sex inequalities. Similarly, other kinds of indicators which can be derived from different sets of data (e.g., fertility and marital data) on women, such as indicators of women's life cycle, or family formation (also suggested by Nancy Baster), are not included. Very little creativity is displayed in using available data on women to develop indicators for development planning.

Another serious shortcoming of the project as it was designed is that it asks for the preparation of simple tables for the presentation of data, and not with the more complex and important task of interpreting data and indicators of the status of women in terms of their policy implications for development programs and projects. Clearly, a much more desirable strategy would have been to have organized and interpreted data on women's status from earlier censuses and then to have repeated the process using the results of 1980 censuses. In this way, two important tasks would have been accomplished: One, the authors would have acquired experience in presenting and interpreting data on women; and, two, two sets of largely comparable data would have been obtained (despite the authors' claims that data from two different censuses are not comparable).

The draft of the Guidelines Manual is too elementary and overemphasizes kinds of formats for tables and illustrations rather than the innovativeness of the indicators. One cannot see why well-trained professionals would need this introductory material.

In the introduction to the Guidelines Manual, it is stated: "Any organization which sponsors or administers programs for women, including numerous women's groups, is [sic] likely to be interested in reading and using the report. Talking to representatives from these types of organizations and looking at programs for women should give one ideas for planning the contents of the report." The reality is, however, that to date, most women's projects have been small, poorly funded, often ill-designed, and always outside the mainstream of development. Authors could learn something about needed indicators from well-monitored and well-evaluated women's projects, but such projects are indeed rare. The purposes of all these indicator-related, AIB-sponsored activities are to increase women's visibility for development purposes; institutionalize appropriate indicators for men and women, especially low-income men and women, in mainstream data collection and dissemination instruments; and de-marginalize women in LDCs. The idea behind these indicators is to help women enter

the development mainstream by becoming well-integrated into large development projects. Hence, the authors, if they are to learn from projects, can learn much more than the contractor has stated from large development projects, monitoring and evaluation reports (which increasingly include women), and people who write and administer large development projects.

Use and Effectiveness of Census Data on Women

The materials developed by the contractor were used during the Belmont Conference. The authors gave their opinions of the materials, but only second- and third-hand comments were available to the evaluators.

Possible Revisions to Improve Usefulness

Assuming that the state-of-the-art paper is radically revised, as suggested in this report, the statement about the framework will have to be changed to reflect specific revisions of the kinds of data and indicators required. Most of the necessary revisions have already been discussed. A sex-based stratification of status specifies the need for female and male discrepancies as significant indicators, as well as for the other kinds of data and indicators discussed elsewhere in this chapter.

The decision about a revision of the framework will depend ultimately on a decision about the authorship for the individual country reports and the kind of strategy that will be employed to achieve the desired results. Strategies to revise the framework are, therefore, discussed in connection with the suggested strategies for authors and country reports.

Cost-Effectiveness of Conferences

The judgmental criteria used to determine the cost-effectiveness of the conferences were:

- the main products of the contract, namely, the preparation and completion of the country reports, and
- the availability to AID of women's data.

Although the contractor emphasizes the importance of the conferences in providing the authors "with a sense of community" through group-sharing of activities and experiences, the development of "a sense of community" by no means excludes production and delivery of products. Indeed, it is

supposed to enhance productivity and adherence to deadlines. In fact, the idea of a working workshop for authors is very good, but for this contract it should have been tied to a requirement that the authors submit a draft report on data on women in their countries for circulation among the writers and one or two experts on women's indicators. Under such circumstances, a working workshop might have been a cost-effective vehicle for the preparation of country reports. Cost-effective strategies were not employed, as the following information confirms:

1. *The focus of the project (as contracted) was exclusively censuses in the current decade (1980s), most of which were to be conducted in the future; therefore, the authors were not asked to use data from the earlier census to prepare the first part of the report without delay.* In part, this oversight can be attributed to the misguided belief that comparisons of women's indicators from two censuses are not possible because of dramatic differences in definitions. This may be true for a few indicators in a few countries, but by no means are time-series comparisons entirely invalidated, as one of the consultants advised. Work with 1970 census data on women would have provided tangible examples for the discussions and would have helped lay a solid foundation for the preparation of the report on the 1980 data. Furthermore, by preparing and making available that part of the report that was based on 1970 data, valuable missions on AID/WID or AID/PPC, in Washington, D.C., would have come to light. (It is interesting to note that the Costa Rican author took the initiative and prepared a draft report on selected women's indicators based on the 1973 census.)
2. Specific situations involving specific authors and countries were not documented adequately by the contractor. Because no field visits were made to the authors' countries, DUALabs had only a fragmented picture of how the authors fared in their respective countries, both in terms of the support they received from the national statistical office or a ministry and in terms of the significance and prestige attached to their work. The contractor felt that it was not possible to pay the authors honoraria (although this perception may have been a misunderstanding, and not based on fact; the initiative could have been taken to negotiate this item with AID). Rather, it was felt by the contractor that inviting the authors to international conferences and arranging for them to come to Washington for meetings constituted an appropriate strategy and sufficient incentive. It is correct that invitations to travel are quite attractive to professional people in LDCs, but they must be offered after wise and careful deliberation to ensure that they achieve their purpose: to motivate persons to complete their tasks. The 1979 conference in Chamrousse, France, was educational and pleasant, but it does not seem to have been a task-oriented conference

(see Conference Program) and it does not seem to have accomplished the goals of the project. Field visits and collaboration with the authors, followed up with working workshops to which authors brought drafts of prepared reports on census data from the 1970s, would probably have been more effective. The second Belmont workshop came closer to the idea of a working workshop for authors but, again, its task orientation seems to have been loose. No draft reports were required; issues were discussed theoretically; too many, often antithetical, desirable goals were debated in the abstract; and the emphasis seemed to shift uneasily from global and vague policy concerns to relatively less important issues about the particular format for a tabular or illustrative presentation of data.

It must be pointed out that the conferences probably were not cost-effective in comparison, for example, to field visits and collaboration with the authors in their local setting, because they did not provide crucial information about the appropriateness of the authors, the support (s)he had from the government and from the national statistical office, the seriousness with which the authors' work was treated by local, influential government and professional authorities, and the kinds of resources and assistance that would facilitate, improve, and enhance the report on women's data. It must be kept in mind that the issue of women's indicators is still sensitive and vulnerable to marginalization in most LDCs. Therefore, a report on women's census data that is of mediocre quality or by a marginal author could be cause for neglect of women's issues in development planning by local and international policymakers.

It may already be evident that at this time, another conference for the project authors would not be recommended. Before further work is undertaken, field visits should be made to determine whether or not any of the authors is committed to and able to prepare the specified report on census data on women and, if so, what kind of assistance is available that could facilitate and enhance the preparation and institutionalization of such a report. Collaboration with an expert on women's indicators and assistance (in the form of an assistant) to committed, individual authors might be much more appropriate and cost-effective at this time than another working workshop.

Progress in Preparing Country-Specific Reports

To date, 11 authors for country-specific reports have been located; however, of these, at least 3 are extremely doubtful: the author from Mauritania, who seems to be difficult to locate; the new junior author from the Philippines whom the contractor admits does not have the support of the national statistical office; and the author from Ghana, who did not attend the last conference and has not been seen by the contractor. Of the

other 9 authors, 6 have produced some tangible evidence of their interest, but not necessarily of their ability to produce a report. The authors from Kenya, Panama, and Indonesia have produced an outline of their reports, and the authors from Costa Rica, Bangladesh, and Panama have produced partial drafts of their reports. With regard to technical quality and usefulness, the Kenyan's outline is the most comprehensive but by no means the most original or creative; in fact, the report Women in Kenya, issued by the Central Statistical Office, is a much more creative report on women. The outlines from Panama and Indonesia seem to concentrate only on women, and not on comparisons between men and women.

There are indications that the authors might be able to prepare useful draft reports in collaboration with a consultant-expert in women's indicators in LDCs.

The authors from Peru, Togo, Nepal, and Ghana have not produced an outline, and the contractor has doubts about the author from Ghana because she did not attend the last conference.

Contractor's Technical Knowledge and Initiative

The contractor's apparent lack of expertise in women's issues and indicators of women's status in LDCs is a serious obstacle to the successful completion of the reports and the preparation of useful (and innovative) studies on women's census data. From the beginning, the process of selecting authors was inappropriate. If authors had been chosen by an expert on women's indicators who had visited the field, it is more likely that all the writers would have been of uniformly high caliber and the best qualified persons in the country for the task. It is also likely that all would have had the support of the national statistical offices. Questions would have been raised long ago about the kind and extent of technical assistance needed or desirable (including honoraria), and the authors probably would have already received assistance in preparing the reports. Also, initial field visits by an expert would have made clear the need to include in the report data from the 1970 census, and the first part of the report already would have been available to AID and local policy-makers. Furthermore, a field visit by an expert who is respected by other professionals would have made the entire project a more important and prestigious undertaking in the eyes of professionals and government officials.

The contractor did not adequately consider viable alternatives to locating authors in the third world. It is essential to employ an expert on women's indicators in LDCs to visit countries that have indicated an interest in the subject. Placing press releases and advertisements in newsletters, the Population Index, and the Census Forum does not seem to be the best approach to locating authors.

Because people in LDCs often do not respond promptly, or ever, to correspondence and because telephone connections are not good (also, people are not used to transacting such business over the phone), face-to-face contact is important; but DUALabs limited its contact with authors primarily to the two conferences and the brief visits to Washington by a few authors from Kenya and Costa Rica. Although a conference can be useful, DUALabs' brief meetings with the authors in Washington were of dubious value, because no experts on women's indicators were invited and the contractor could not see firsthand available data and resources. Expert consultants should have spent some weeks working with each author on the actual preparation of the reports. (It is worth noting that the contract specifies the preparation of "collaborative" papers.)

Also, there is no evidence that the authors were offered expert guidance and advice for the most policy-relevant and innovative indicators of women's status. It is important that authors from LDCs make their own decisions, but it is equally important that they receive the necessary conceptual and methodological inputs they need to make and implement their decisions. The contractor has reported that the authors objected to the presence of the only consultant who attended the Belmont conference (White), and became skeptical about the use of consultants. Different consultants have different styles, and some have the background, experience, and personality that make them both acceptable to and compatible with professionals and policymakers in LDCs.

In summary, the contractor does not seem to have taken the most appropriate steps to expedite and ensure the successful completion of the reports.

Information on and Provision of Technical Assistance

Information on available technical assistance was included on the front page of the newsletter on the Census Data on Women project. It is not known to what extent the authors responded to printed information or announcements at meetings. It is known that the advertised assistance was not always pertinent. For example, research assistants were employed to help prepare the bibliography, but not to tabulate data and prepare tables. Assistance with the latter might have been particularly beneficial to the authors. According to the contractor, no author asked for any technical assistance, although in most cases the authors needed some kind of aid. Again, the best way to inform authors of available technical assistance and to make helpful technical assistance available is to arrange a working field visit. During such a visit, the collaborators can discuss and make arrangements for the technical assistance that is needed to prepare the report.

Recommended Efforts to Complete the Report

The first step toward completing the study should be to determine which of the authors are able and committed to completing the country-specific reports and what kind of technical assistance is needed. A consultant who is an expert in women's indicators in LDCs should be recruited to visit the respective countries. USAID should recommend this consultant, receive his or her recommendations and field reports, and monitor the implementation of the recommendations. Where an author seems able and committed to prepare a useful, policy-relevant country report on women's census data, the consultant can decide, in consultation with the AID mission in the country, what kind of technical assistance is needed and appropriate to ensure the successful completion of the report. If necessary, the consultant should be prepared to stay on for two or three weeks to collaborate with the author and facilitate the preparation of the report, which should be based on data from the 1970 and 1980 censuses. These data will be useful in assessing continuing changes in the relative status of men and women.

In some cases, even when the relevant data are available, the consultant may find that an author is unable or unwilling to prepare a report on women's indicators which goes beyond the simple reports now available. In this circumstance, the consultant should exercise judgment in determining the importance of making elementary data on women available in published form, if the information is available in other, similar publications, or if similar efforts in the country are under way. (Among these efforts are the ongoing FAO-sponsored pilot studies on socioeconomic indicators for monitoring and evaluating agrarian and rural development in 20 countries in all regions. They include activities to disaggregate all key indicators by sex or sex and type of head of household, rural/urban, socioeconomic status, and district.) Furthermore, the USAID mission in the country should be consulted in formulating the most appropriate recommendations.

In some cases, an author may have little or no commitment, or be unable to complete a report. It may be relatively easy to encourage the person to withdraw from the assignment by establishing firm deadlines and requiring him or her to carry out specific tasks.

In view of the available information about the different authors, it is possible that, in some countries (e.g., Peru, Costa Rica, Panama, and Bangladesh) some kind of report could be prepared, even if a consultant does not make a field trip, and that some kind of collaboration or technical assistance could be arranged. The reports, however, might take a long time and probably would not include either data from the 1970 census (except for Costa Rica) or certain crucial policy-relevant indicators. Therefore, a field visit by a consultant would be cost-effective for the preparation of a more complete, creative, and policy-relevant report.

For a two-week stay in each country, the cost could vary from \$17,000, for the consultant fees, travel, and per diem, to \$25,000, including fees for research assistants. In Bangladesh, it must be remembered, there are a large number of publications that present different kinds of women's data and indicators, and a FAO-sponsored pilot study of socioeconomic indicators is under way. Thus, a decision could be made to not send a consultant to Bangladesh, but to wait for and accept the report which the author from that country might produce (a draft with tables is available at this time).

There are other countries where a report could be produced only if a consultant spends some time collaborating with the authors and ensuring that they receive whatever technical assistance they need. Among these countries are Indonesia, Kenya, and Togo. It is clear that the author from Indonesia would benefit from collaboration with an expert (the contractor also admitted this in a memorandum, dated December 31, 1981, to John Chao) for a period of at least three or four weeks. Although the author from Togo has not produced an outline, it would be worthwhile to undertake the effort because there is a lack of adequate data on women in Togolese publications. Togo is the only French-speaking country from which a report is likely to be forthcoming. (Mauritania is highly doubtful.) A consultant on his or her way to Togo could spend several days in Ghana to determine whether or not a report could be obtained from that country, either from the contacted author or from another person, if the former were unable to prepare the document. For four weeks of consulting time in Indonesia, three weeks in Togo, three weeks in Kenya, and three or four days in Ghana, the costs, including travel, per diem, and research assistance and other technical assistance (estimated to be considerable in both Indonesia and Togo), could vary from approximately \$25,000 to approximately \$40,000.

Commitments have been made to the authors; thus, it is important to determine carefully these persons' ability and willingness to complete the reports. Their needs should be identified by an expert who can visit each author in his own setting. It is also important to set clear deadlines for the completion of parts of the reports, as well as the entire study, and to offer honoraria commensurate with honoraria received by other professionals at the authors' level.

There is no evidence that specific plans have been prepared to make census data on women available to AID (either PPC/WID or DIU/ESDS). The contractor, however, contacted AID and obtained specifications on the kinds of tapes and cards that can be used in the computers.

General Comments

The principal problem with this contract is that the contractor does not have the necessary background and expertise in women's issues or

women's indicators in LDCs. Because of this, the contractor is not aware of existing important unpublished literature, informal and confidential reports, and ongoing relevant projects (e.g., the FAO-sponsored study in Togo, Kenya, Bangladesh, Philippines, Peru, and Indonesia). Moreover, the contractor has limited exposure to subject-matter expertise by, for example, completely closing conferences with the authors to interested and knowledgeable persons (see discussion of incident at Chamrousse meeting). For example, instead of inviting a few selected key experts, the contractor tied the meeting in France to a larger conference of a small group of mostly European census and computer experts. This group, known as Data for Development, exposed the authors to general discussions on development rather than focusing on specific tasks.

The limitations described above are serious, because they constitute important obstacles to the successful completion of useful and policy-relevant country-specific reports on census data on women and impair the contractor's ability to organize a conference on the use and policy implications of census data on women. These limitations are clearly reflected in the contractor's roster of consultant-experts in women's issues, census data, and women's indicators. The contractor's lack of acquaintance with top professionals in this field led to an open invitation to consultants and to the collection of names of willing, but not necessarily highly competent, persons. A few respected consultants are cited in the roster, but many key names are absent from the list that includes entirely unknown and not particularly expert people. The current roster of consultants is of no use, and money was wasted in preparing it.

According to consultants and authors, because of the contractor's lack of substantive expertise and central conceptualization, the goals of the project have shifted as different, and often contradictory, orientations have been assumed. There has been a shift from the presentation of cross-cultural, comparative sets of data on women to country-specific sets of data on women that reflect the specific development needs and situations of individual countries. These data have been treated as though the two orientations were necessarily mutually exclusive. Also, the contractor's guidelines are not clear; at times, the emphasis seems to be on a clear presentation of data; at other times, the use of data is emphasized--a concept which tends to be delineated with considerable ambiguity, for the contractor does not make clear whether he is referring to policy-relevant interpretations or, more simply, to the availability of data in a "usable" (meaning, easily readable) form.

It must be concluded that, because the contractor lacks the necessary expertise and experience with women's issues in LDCs, the strategies used to carry out the contract tasks have not always been the most appropriate and have not produced desirable results.

Recommendations for Future Orientations and Activities*

The contract that was evaluated has had a problematical history. In assessing the contract, it is important to separate the significance of the subject matter from the unfortunate choice of an inappropriate contractor to perform the necessary tasks. The availability of data about women and the construction of indicators of sex disparities in different sectors and of other policy-relevant indicators of the status of men and women (especially low-income men and women) are crucial to an understanding of population issues (e.g., fertility; infant, child, adolescent, and maternal mortality; migration; age at marriage; and nuptiality) and related development assistance in LDCs. Population issues have considerable implications for the monitoring and evaluation of the impact of all kinds of development projects on men and women. Therefore, it is essential that the Population Division of AID continue to support projects that include a component on women's census data and indicators.

The focus of future activities should be shifted from the collection and publication of census data on women to the use of the data for the integration of women in development planning for all sectors and all kinds of development projects. This shift in focus is becoming increasingly necessary, because more and more data about women are becoming available in most LDCs and international organizations, donor countries, and local women's organizations are increasing the pressure to collect better and more data on women. Until the usefulness of the new sets of data, which are disaggregated by sex or by sex and type of head of household (as well as other policy-relevant variables), is made explicit with concrete examples and applications in development planning and projects, it will be difficult to justify and sustain the institutionalization of efforts to obtain adequate and policy-relevant data on women.

In shifting the emphasis, the aim should be to develop a capability among social scientists, planners, and policymakers at different levels in LDCs to interpret and use existing data on women (even when they are not perfect) to prepare development plans and to negotiate large development projects with donors. The process by which local social scientists, planners, and policymakers become sensitized to key, policy-relevant indicators of women's status and to the significance of these indicators for concrete development programs and project activities is complex. No models that point to the most appropriate ways to proceed are available at this time.#

* This section was prepared specifically at the request of the AID CTO by the WID consultant. It contains guidance on the focus of future WID activities.

A model of policy-relevant women's indicators is currently being designed for the Population Council's Women in Development program.

V. CONCLUSIONS AND RECOMMENDATIONS

V. CONCLUSIONS AND RECOMMENDATIONS

Technical Assistance Contracts*

The provision of technical assistance to LDCs is an important component under the general AID services umbrella. However, it is often difficult to coordinate, monitor, and evaluate the provision of technical assistance because of local, country-specific conditions and the specialized technologies involved in census processing.

There are specific technical assistance needs, particularly in census data processing, that are unmet now and will persist in the face of a constrained foreign assistance base within the agencies of the U.S. Government. Such constraints demand that the private sector participate in well-coordinated, subordinate roles to accomplish the tangible objectives of assistance initiatives.

For various reasons of administrative simplicity and synergy, it would be well to locate the major tasks of technical assistance in specific governmental organizations. For example, assistance to foreign statistical offices is usually best coordinated through U.S. Government organizations (e.g., the U.S. Bureau of the Census). Such organizations generally have credibility with foreign government agencies, have a wide range of expertise, and are experienced in providing both technical assistance and training. Currently, there is a great need for training for NSO demographers in the new tools of demographic estimation from indirect techniques. The funding of ongoing training programs under a single contract is probably the most effective way to provide this kind of technical assistance.

Some kinds of technical assistance can be provided in large, single programs (e.g., contracts with the U.S. Bureau of the Census), particularly when other governmental organizations are unwilling or unable to retain in-house the specific expertise required to ensure continuity of approach. A separate and organizationally more challenging task is to respond to special, often ad hoc, requests from NSOs or local missions. These requests (usually short-term) are often crucial but fall within the organizational boundaries of the agencies working with less developed countries. It is here that private sector technical assistance contracting can prove to be most useful. Indeed, this philosophy is to some degree manifest in the current contract under evaluation.

It is incumbent upon the contracting agency of government to monitor, with diligence, the activities of subcontractors who may be unaware of or not sensitive to the long-term impact of their efforts. Such monitoring demands not only increased effort by program monitors but also the retention of specific technical expertise to gauge the successes of projects and follow-up activities.

* This section was prepared specifically at the request of the AID CTO. It contains guidance on technical assistance contracts.

At this time, the frequency of reporting required of the contractor is appropriate, but the format for the presentation of information is not adequate. In general, the information that the contractors have been submitting is neither sufficiently summarized nor sufficiently detailed in the corresponding sections of the reports to highlight areas which should receive further attention. Although any reporting mechanism can be circumvented or made less effective, the current contractor's reporting standard is inadequate. Private sector contractors to the United States Government should expect and accept the costs associated with producing detailed, in-depth progress reports that express visually and textually the activities of the reporting period.

The following recommendations are offered to improve contract monitoring:

1. The contractor, in consultation with the project monitor, should develop a high-level reporting format which summarizes critical cost information on performance activity, making the data an integral part of a contractor's reports. In general, such a format will reduce up front the amount of text and detailed line item information in the executive presentation. The contractor should be required to summarize expenditures graphically by major type of activity. Reports which are inadequate in this regard should be rejected, and further contract work should be suspended accordingly.
2. The contractor should be required to establish a follow-up reporting mechanism to alert the AID CTO at an appropriate time to evaluate the need for additional or remedial assistance in connection with work completed earlier in-country.
3. The AID contracting organization may wish to examine the idea of "incentive contracting." The purpose of using such an instrument would be to ensure that, given passive efforts by a contractor to complete contractual tasks, the scope of work is self-limiting.
4. The contractor, in consultation with the AID CTO, should be required to assess the long-term, probable impact of contract tasks as they are completed. This activity should be evaluated with respect to Recommendations 2 and 3 above.
5. The contractor, with the assistance of the project monitor, should be prepared to take a more active role in publishing and disseminating the tangible products developed under private sector technical assistance contracts. The contractor's activities need to be better integrated under the AID technical assistance umbrella.
6. The Office of Population, AID should be prepared to retain either in-house or on call consultants with the specific technical or subject-matter expertise needed to prioritize technical activities.

Current Contract Action-Items

The following tactical action-items are offered with the objective of reestablishing the direction and priorities of the contract:

A. Technical Areas

1. Conduct immediately a survey of AID missions to identify those that are most likely to require assistance in conducting the 1990 round of census activities. This survey should include countries earlier assisted by the contractor. The responses to this survey should be prioritized by the project monitor according to the following criteria:

- absolute need of assistance;
- ability of AID CTO to monitor technical assistance effort;
- ability of AID CTO and contractor to follow up the effort; and
- probable long-term impact of the assistance effort.

Current technical work in progress should be evaluated and prioritized in that same way. Special consideration might be given to Jamaica (see Appendix E).

2. Complete the CONTROL package, and make arrangements to complete and document the CONTROL package in accordance with the recommendations contained in Chapter III.
 - a. Formulate a coherent policy statement for the maintenance and dissemination of the CONTROL package. These policy discussions should include a consideration of update and dissemination mechanisms, workshop activities, and future system modifications.
 - b. Publicize the existence of the CONTROL software under the AID assistance umbrella so that the efforts of the contractor and the various other assistance organizations are coordinated.

3. Reexamine the content and philosophy of the hardware report. Require the contractor to revise and update the hardware report in accordance with the recommendations in Chapter III.
4. Require the contractor to summarize the following information on contract activities:
 - software modifications completed to date, by machine type (e.g., COCENTS versions by hardware, CONCOR versions by hardware, etc.); and
 - activity costs to date, by major area, on annual basis (e.g., technical assistance broken down by hardware, software, travel, salaries, etc.).

B. Census Data on Women

1. Reevaluate the role of the principal contractor, DUALabs.
2. Extensively revise the current state-of-the-art report on census data on women, as recommended in Chapter IV.
3. Determine which of the contacted authors are able and committed to completing the country-specific reports and identify what kind of technical assistance is needed. Set clear deadlines for the completion of parts of these reports. Use field visits to accomplish these objectives, if possible.
4. Retain a subject-matter consultant to implement the specific recommendations in Chapter IV.

Conclusions: DUALabs, Inc.

The evaluators offer the following conclusions about the work of DUALabs, Inc.:

1. DUALabs' work on census data on women should be discontinued. The services of a census data on women expert are recommended to salvage the current work in this area.

2. The current products produced in connection with the Census Data on Women project lack conceptualization and are not comprehensive statements of the topical issues.
3. The contractor lacks expertise in census data on women and did not take appropriate and cost-effective steps to expedite and ensure the successful completion of the country-specific reports.
4. Conferences held by the contractor were not effective in producing results.

Conclusions: Delta Systems Consultants, Inc.

The evaluators offer the following conclusions about the subcontractor, Delta Systems Consultants, Inc.

1. Delta Systems has demonstrated technical competence in its major activities, especially in software enhancements for the adaption of computer packages. It is apparent from field visits to Jamaica and Peru that there is a need for these kinds of software enhancements. When requested, Delta Systems has competently filled the needs of these countries.
2. The financial expenditures of Delta Systems, both for software development and overseas consulting, appear to be reasonable. The firm's financial records and personnel allocation match closely the evaluators' independent judgments about time requirements and suitable costs.
3. Delta Systems' work with NSOs, as evidenced by Jamaica and Peru, indicates satisfactory performance by the contractor. Field reports from the AID mission, from the NSO director, and from the immediate NSO staff were uniformly positive. The software enhancements were developed rapidly and with a high degree of competence. Workshops were clearly presented and included interesting local tabulations. For these reasons, the evaluators rate foreign consulting as highly acceptable.

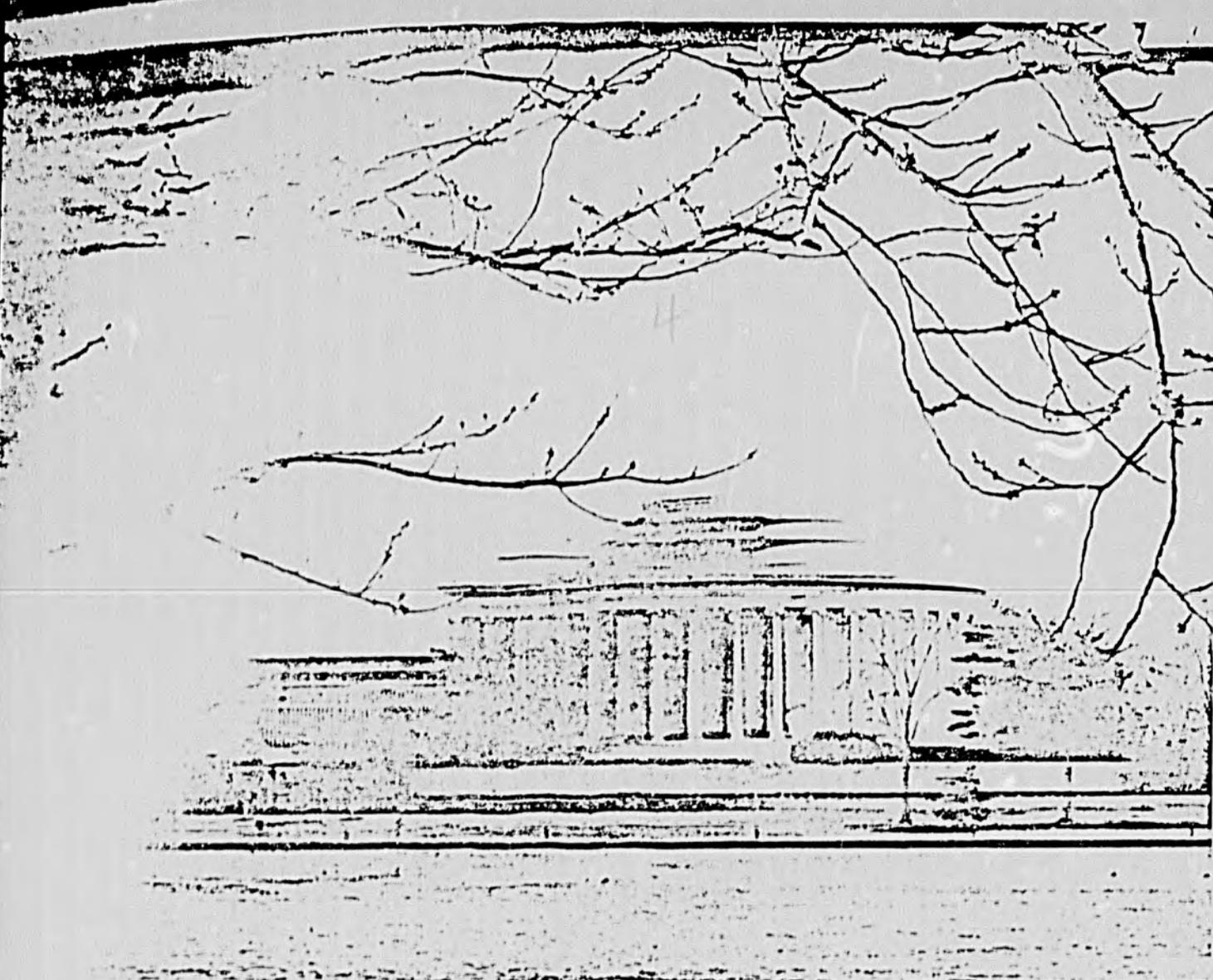
4. Follow-up monitoring of software and hardware consulting has been weak. A more aggressive system to monitor consultation visits would help to detect the need for additional visits. Given the constant staff turnovers and low levels of staff experience, follow-up to NSO activities is particularly important.

5. Delta Systems is a small, reliable, competent firm to assist foreign NSOs in census data processing. It has displayed a somewhat passive attitude toward following up consultation visits, but it has been energetic in specific consulting tasks.

APPENDICES

Appendix A

EXCERPTS FROM BROCHURE ON DUALABS



History and Purpose

Data Use and Access Laboratories (DUALabs) is a nonprofit tax-exempt corporation chartered under the Laws of the District of Columbia. Our offices are located in Arlington, Virginia just across the Potomac River from downtown Washington, D.C. DUALabs was established in 1969. Our purpose is to provide technical support and training to help people understand and use statistical data and information. We seek to serve the public by sharing the knowledge and tools developed in our work and by encouraging public data producers to design their data products to better fit user needs.

Major research, development, and consulting activities are financed through grants and contracts. Our project sponsors include agencies of national, state, or local governments, associations, universities, nonprofit research centers, foundations, as well as commercial organizations designated by such sponsors.

DUALabs' staff members bridge the gap between the researcher and the technician. They have unique capabilities in statistical data use and access derived from solving the most difficult problems of public data users. Staff members have a wide range of social science backgrounds and extensive experience in data handling.

DUALabs' close relationships with other nonprofit organizations, professional associations, and consultants enable us to tap expert resources when new ground is being broken or when the welfare of a broad user community would be enhanced.

DUALabs is probably best known for its work to aid users of census data. However, many data resources are distributed by DUALabs and supported by specialized training programs, software, and documentation.

Data Access Services

Public statistical data files are often large, complex, and difficult to process. Data Access Services provide users with precisely the data they need, in the media they prefer, with all necessary instructions and documentation to facilitate use. The Data Access Services staff maintains a library of over 3,000 reels of public data resources. They have quick access to other federally distributed public data files not in the DUALabs library. Our data analysts and user services representatives know the contents of commonly used data resources and have experience in their application to the needs of researchers, planners, and administrators.

Data File Distribution

DUALabs' data library includes most widely used public data files. Any nonprofit organization may purchase machine-readable data files for the cost of distribution (usually \$100 per reel). Purchasers receive complete documentation of the file contents and structure. The cost of a tape copy includes only minimal consultation from DUALabs' staff, but additional consultation on the use of the data may be arranged for a fee. DUALabs' holdings include the 1970 Census of Population and Housing, 1976 Survey of Income and Education, National Crime Survey Files, and others.

Software Distribution

DUALabs has developed a variety of computer programs that are especially suited to processing census and survey data. Each program or system of programs serves to manipulate, tabulate, and display data tables; create machine-readable extract files containing subsets of larger files or combinations of data from different files; and generate

standardized documentation for any type of data file.

The programs can be purchased and DUALabs' staff will provide consultation on installation and the basic features of the program. Consultation or training in the use of the program is acquired separately.

Data Products

Our data file and software distribution services are oriented towards organizations that have computer facilities and expertise. Many organizations without computers need access to public data that are not available in printed form. For these users we offer special data preparation services. Data from files in DUALabs' tape library can be retrieved and presented in a hard-copy form to suit a particular need. An example of this type of service is the Statistical Data Tabulation Service (SDTS) which DUALabs offers in cooperation with the National Technical Information Service, U.S. Department of Commerce (NTIS). The SDTS enables researchers to quickly specify their data requirements using a simple data tabulation form and to receive a printed report at a comparatively low cost.

Special Projects

Organizations that request data access services for data files not in DUALabs' tape library receive assistance through special projects. Usually the sponsoring organization provides the data and receives consultation and processing services. In some cases, the data are public and become part of our library. In other cases, the data are confidential and returned to the sponsoring organization upon completion of the project.



Data File Preparation Service

Since the nation's first public use sample (microdata) was released at the Census Bureau in 1963 (the 1960 Census One-in-a-Thousand Sample), many federal agencies have become interested in expanding the value of their public statistical data files by permitting researchers in the public and private sectors to acquire these files for tabulation and analysis. To release public use sample files, an agency first must insure that confidentiality protection can be maintained; this is accomplished by eliminating names and addresses or any other information on records which would identify individuals.

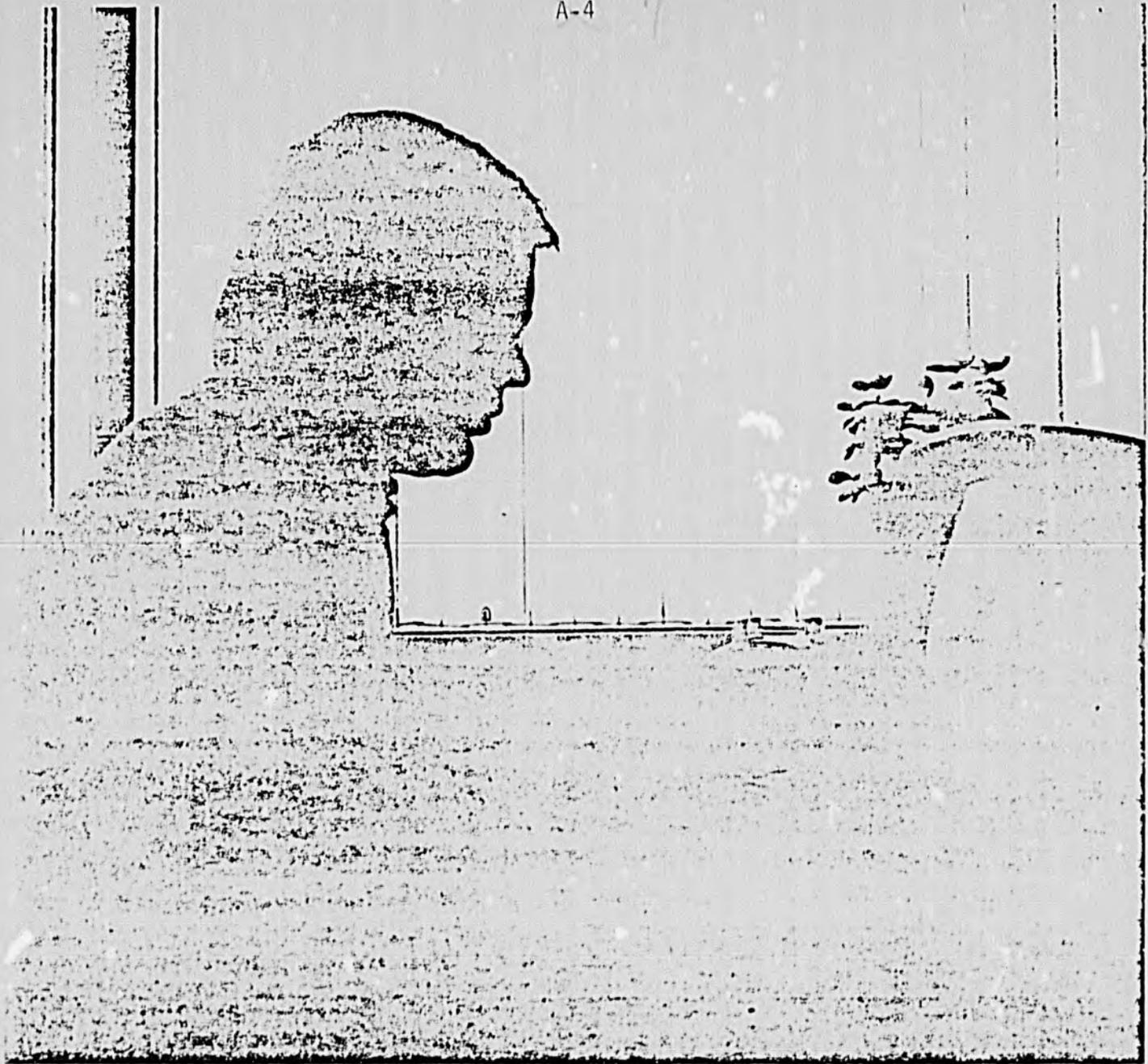
Interest in making public use sample files available has also increased since the Freedom of Information Act has gone into effect. Currently, public use samples based on several important surveys and administrative record data collections are available.

DUALabs has provided file cleaning, editing, distribution, and documentation for major survey and census files. As a result, file users have been saved millions of dollars in data acquisition and

use costs and federal agency producers have been saved countless hours in contact with users. DUALabs' service consists of six main components:

- analysis of data file content to determine suitability for public use.
- estimation of needed file editing to insure data file compatibility with user software and equipment.
- evaluation of accuracy and completeness of data file technical documentation.
- identification of data file structure problems which prevent use with common software and computer systems.
- development of procedures for providing information and training on data file contents and applications to users.
- preparation of data files, user-tested documentation, and user distribution procedures.

DUALabs can guide an agency to its own completion of such work or can provide detailed specifications for the performance of the work.



Software System Development

DUALabs has created software systems for use with the U.S. Census summary data files and adapted systems for use with hierarchical unit record files. DUALabs' program designs have been used by the Bureau of the Census and have been installed at hundreds of government, academic, and private institutions.

User oriented systems exist for

- using census and other summary tapes to create new tabulations and data reports.
- creating low-cost tabulations from very large files of unit records.
- preparing machine-readable file documentation.
- extracting subfiles and merging files.

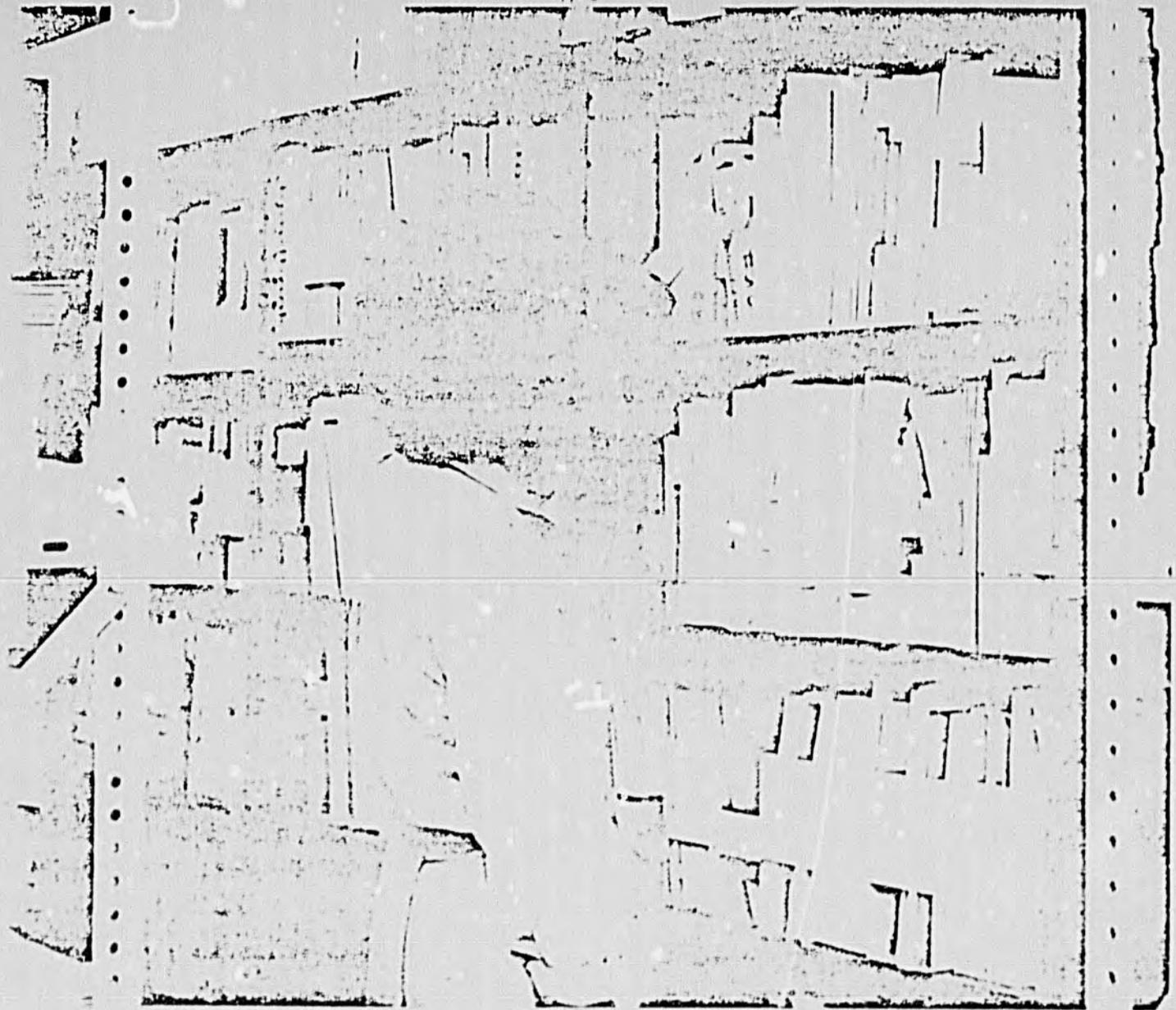
These systems are made available to the public

under various low-cost distribution agreements. Names of some of the better known systems are the MOD-Series, CENTS-AID, and LEXICOGRAPHER.

System development capabilities exist for:

- survey editing,
- generalized programs with generative techniques for tabulation, editing, and updating.
- information management,
- geographic coordinate manipulation, graphic display, and geodetic computation.

These capabilities have been developed to assist data users with special applications or problems in data retrieval, routing, networking, modeling, and other applications of public data files.



Reference Services

DUALabs offers a variety of services to help organizations identify and locate needed statistical information. Individual requests for assistance are handled by DUALabs through an NTIS-sponsored service. For a small fee, DUALabs will translate your information need into a data request, conduct a search of federal data resources, and prepare an informative reference report, all within a few days.

Large scale data searches in a particular subject area are also undertaken. Projects of this type are usually conducted in support of a research program where it is important to know what data exist. For example, DUALabs received a grant from the U.S. Office of Education to develop and offer an Ethnic Data Curriculum Materials Guidance Service. The project included the preparation of two reference publications: *Ethnic Statistics: Using National Data Resources*

for Ethnic Studies and Ethnic Statistics: A Compendium of Reference Sources.

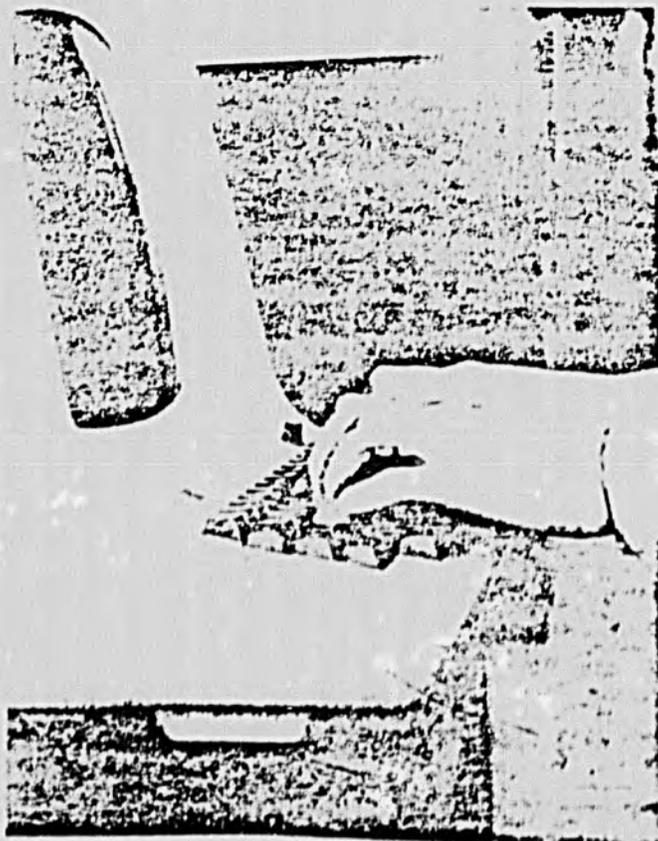
DUALabs' Reference staff prepares compilations of statistical data resources, provides statistical data cataloging and indexing services, develops and supports special reference or clearinghouse functions and conducts DUALabs' publications program.

DUALabs' publications program makes available research reports, file documentation, software user manuals, and other information to keep data users informed about new data resources and developments in data access techniques. The *Review of Public Data Use* is one such publication. DUALabs, in partnership with Elsevier North Holland, Inc., publishes this interdisciplinary journal devoted to public data access and use.

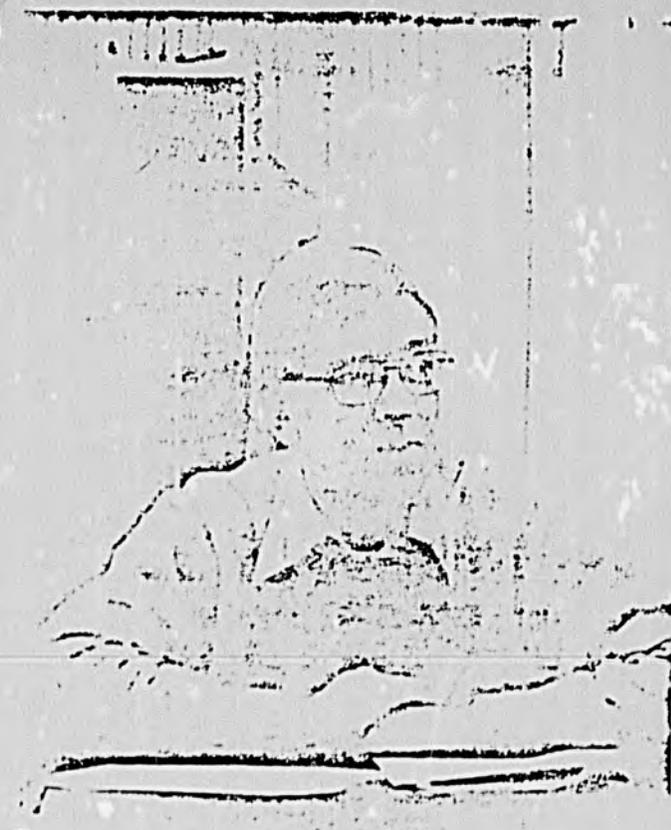
Information Science Research and Development

At DUALabs, we often identify needs or services which cut across all aspects of public statistical data use and access. For example, there has been a distinct need for standard bibliographic control procedures for machine-readable data files. By trying to develop solutions to a common problem of this type, DUALabs can make contributions that serve our goals to help people use public data and help society receive a better return on its investment in public data.

DUALabs is concerned with administrative and technical innovations that contribute to solving information science problems. Such problems have been addressed in research aimed at understanding how a user of statistical data operates. What kinds of software are needed for processing data files? What kinds of technical documentation best meet user needs? What advantages are there to organizing communities of users? What is the most cost-effective way of improving data use and access?



A-6

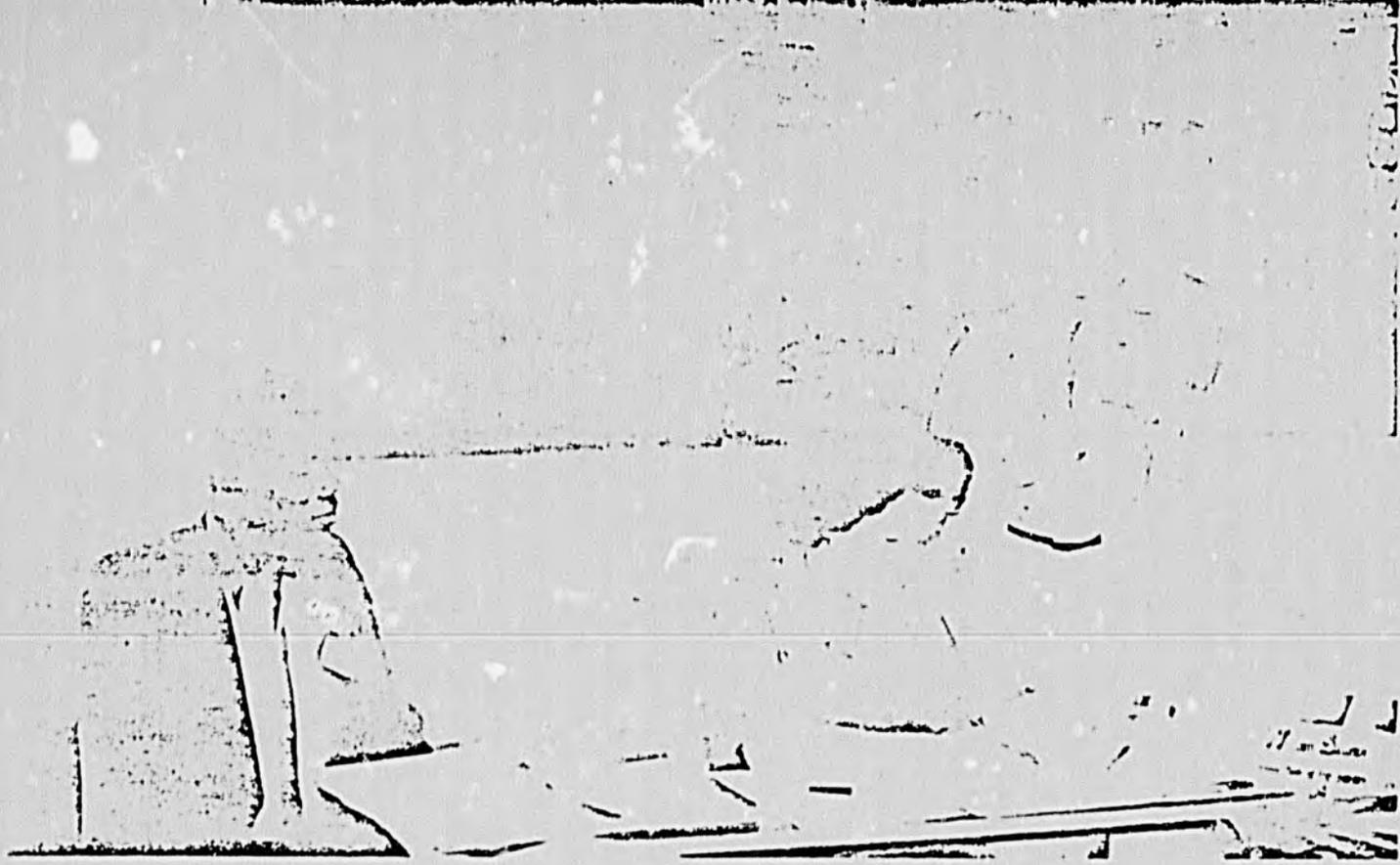


Research Applications

When a research project requires demographic or statistical information, DUALabs can tell you whether a data source already exists to meet research needs. Sometimes the expensive and time-consuming collection of new data can be avoided. DUALabs can recommend possible data sources, extract or recast data from a file to better suit user needs, and assist in data tabulation and analysis.

For example, we have contributed to the development of special geographic data files for the analysis of U.S. fertility data. We have assisted in the development of data bases and basic tabulations for research aimed at the analysis of the impact of federal revenue sharing programs. We developed the analytic plan and prepared policy oriented studies for support of the arts, based on an artists data extract file from the 1970 Census.

By being involved in a sponsor's research applications, DUALabs' staff contributes to efficient, timely, and low cost completion of basic analytic work.



International Programs

DUALabs' data use and access programs extend beyond the boundaries of the United States. International programs are usually concerned with making demographic, economic, and other types of data more readily accessible to government officials with decision-making responsibilities. DUALabs has engaged in work in nations outside the U.S. on a large and small scale. Some of these activities have been supported by the U.S. Agency for International Development (USAID). Some programs have been directly supported by other nations. Projects supported by USAID include "African Data for Decision Making," and a "Support Program for the 1980 Round of Censuses."

The 1980 Round of Censuses project offers, through a roster of expert consultants, short-term assistance to developing countries in overcoming any problems in census production. The project includes the evaluation and enhancement of software for census work and the analysis of hardware for census data processing. An important aspect of the project is the use of census data to accomplish development goals. A special working group, consisting of persons from at least eight countries, is focusing on the role of women in development. Individual country reports on women will be prepared using census data. DUALabs is supporting this work with tabulation

suggestions and help, software assistance, bibliographic and analytic references, and other activities to insure census data are available for use by the report authors.

DUALabs has long had close association with Data for Development, an international voluntary association consisting of experts from over 50 different countries who are engaged in the use of statistical data within the government data network. Data for Development, a United Nations recognized nongovernmental organization, is unusual in that its members contribute their time, where possible, to the initiation and review of special projects in developing nations. Presently pilot projects are underway in Kenya, Tunisia, and Senegal. DUALabs has participated in these projects and has also contributed to Data for Development by reporting on new technological developments for statistical activities.

When requested, DUALabs works directly with various governments. For example, extensive data use and access services were provided to the government of Nigeria to assist in the planning and development of its new capital city. DUALabs will review specific national data use and access problems to suggest possible technical and funding solutions.

Illustrative List of Sponsors

Federal Government

National Institute for Child Health and Human Development
 National Center for Health Statistics
 Social Security Administration
 Office of Human Development, Department of Health, Education and Welfare
 Economic Research Service, Department of Agriculture
 Bureau of Labor Statistics
 Agency for International Development
 National Endowment for the Arts
 National Technical Information Service, Department of Commerce
 National Science Foundation
 Law Enforcement Assistance Administration
 The Federal Judicial Center
 National Archives and Records Service
 Office of Education, Department of Health, Education and Welfare
 Department of Housing and Urban Development

State and Local Governments

State of Maryland Environmental Service
 State of California, Department of Youth Authority
 New York State, Office of General Services
 Governor's Crime Commission (Minneapolis)

City of Chicago, Department of Development and Planning
 Houston-Galveston Area Council
 Province of Ontario, Ministry of Transportation and Communication

Nonprofit Organizations

American Council on Education
 Data for Development
 Ford Foundation/Center for Research Libraries
 Association of Public Data Users
 The Urban Institute
 Brookings Institution
 The Population Council
 Oak Ridge National Laboratory

Universities and Colleges

California Border Area Resource Center, San Diego State University
 University of Florida
 Johns Hopkins University
 Massachusetts Institute of Technology
 New York State University
 University of Pennsylvania
 Rutgers University
 Wayne State University
 University of Michigan
 University of Massachusetts
 University of Mississippi

Please send me the information requested below:

Public Data Files Available from DUALabs

DUALabs' Software

Data File Preparation Service

Data Reference and Tabulation Services

Special Data Access Services. Please specify area of interest: _____

Description of Census Service Activities

Review of Public Data Use (Quarterly Journal)

Annual Report

Other: _____

Add my name to your mailing list to receive information about other products and services.

Name _____

Title _____

Address _____

City _____

State _____ ZIP _____

Phone Number _____

detach and mail to contact

Data Use and Access Laboratories
Suite 930, 1601 North Kent Street
Arlington, Virginia 22209
(703) 525-1480

Appendix B

INFORMATION ON DELTA SYSTEMS CONSULTANTS, INC.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

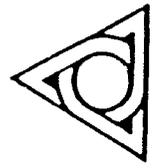


1-8

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 18906 MIAMI, FLORIDA

POSTAGE WILL BE PAID BY ADDRESSEE

**DELTA SYSTEMS
CONSULTANTS, INC.**
264 ALHAMBRA CIRCLE
CORAL GABLES, FL. 33134



FACILITIES AND LOCATION

Delta Systems Consultants, Inc., maintains its corporate headquarters in a modern two-story office building in the heart of Coral Gables, Florida. Meeting rooms, training rooms and computer terminal facilities are available 24 hours a day. The office is within 15 minutes of Miami International Airport and less than 10 minutes from the main campus of the University of Miami.

Because of the proximity to Latin America, Delta staff members are within easy reach of virtually every country in the Caribbean and Central and South America. Several staff members possess native Spanish language fluency and almost all have the ability to communicate in Spanish, French or Portuguese.

Delta Systems Consultants, Inc



264 Alhambra Circle, Coral Gables, Florida 33134
Telephone (305) 446-3538

ORGANIZATION AND BACKGROUND

Delta Systems Consultants, Inc., has assembled a highly qualified staff of computer specialists, survey and census researchers, and sampling statisticians who can be responsive to commercial clients and applications as well as to governmental institutions.

The key employees and stockholders of the company have attained international reputations as innovators of widely used techniques and methodologies. Major computer software packages such as CENTS, COCENTS and CONCOR were developed and supported by computer units that were headed by the officers of the company. Other major computer software such as SPSS, SAS, BMDP, TPL and TOTAL have been implemented and supported by Delta employees.

Staff members have undertaken numerous assignments in all parts of the world, with recent and successful experience in East and West Africa; in more than 12 countries in Asia and some limited experience in the Middle East. In all, Delta Systems employees have provided technical services or assistance on more than 100 projects around the world.

SERVICES OFFERED

The principal objective of Delta Systems is to provide and maintain the highest quality data processing and statistical services available. The employees of Delta Systems have provided consultation and programming services in over 40 countries on five continents and to various agencies of the U.S. Government. Services available include:

- Systems Analysis
- Software Design
- Software Conversion
- Application Programming
- Research and Development
- Training Programs
- Statistical Analysis
- Survey Design and Processing
- Data Base Design

A number of proprietary statistical software packages are also available from Delta Systems. Many of these have been converted to a wide range of computer systems and can be installed immediately. The major packages are:

- DeltaTab
- FASTAT
- DeltaSort
- SuperCONCOR

Information about these and other computer software packages and about other services can be obtained by telephone or mail. Please use the attached inquiry card or call Delta Systems at (305) 446-3638.

FOR MORE INFORMATION

YES - I want to know more.

Please send information on (check all applicable boxes):

- DeltaTab (Tabulation and data display package)
- SuperCONCOR (Data editing package)
- DeltaSort
- FASTAT
- Other
- I would also like for your representative to call

NAME

TITLE

SPECIFIC APPLICATION

Person Requesting Information

Name of Company or Organization

Address

City

State

Zip

Phone Number

Appendix C

SCOPE OF WORK OF EVALUATION OF 1980 ROUND OF
CENSUSES CONTRACT WITH DUALABS

Appendix C

SCOPE OF WORK OF EVALUATION OF 1980 ROUND OF CENSUSES CONTRACT WITH DUALABS*

I. BACKGROUND

The purpose of this project is to provide support for the 1980 Worldwide Round of Censuses in order to facilitate the collection, processing, and analysis of accurate and timely data.

Major Project Tasks

1. Software Evaluation and Enhancement (performed by Delta Systems)

- a. Preparation of two reports outlining the appropriateness of various existing computer software packages for the analysis of census data.
 - i. Basic Requirements Report based on an evaluation of existing computer software which identifies software enhancements to make existing software systems more widely usable.
 - ii. Options Report to be used as a planning document, identifying needed software enhancements, estimating costs of achieving them, and illustrating the benefits to countries of the enhancements.
- b. Programming of selected enhancements and user-oriented features based on Options Report for both tabulation and editing packages.
 - i. Preparation of a version of the Cobol/CONCOR edit package which permits use by junior-level programmers or non-programmers (CONCOR A).
 - ii. Development of a CONTROL-type software program.

* This appendix has been edited for clarity and consistency.

iii. Field-testing of enhancements and installation of software programs in LDCs.

2. Hardware Feasibility Studies (performed by Delta Systems)

- a. Preparation and distribution of a report, updated as needed, on computer hardware which serves as a summary and review of appropriate hardware for the analysis of census data and other large data files in LDCs.
- b. Provision of advisory services related to computer hardware.

3. Census Data on Women (performed by DUALabs)

- a. Design and implementation of a plan for the special tabulation of census data on women in 10 LDCs.
- b. Preparation of a state-of-the-art report which examines the needs for data on women by international organizations and host countries, previous literature and status of measurement on women, and results of international donor efforts, as well as the JID Office.
- c. Creation of "census data on women" package consisting of 1) illustrative tables and their rationale; 2) a narrative framework presenting key topics to be covered in the country reports; and 3) a manual of guidelines for implementing the country reports.
- d. Provision of as many as 10 special country reports using available census data on women, consisting of tables of relevant data, a discussion of data quality, and any other special considerations necessary to interpret data for specific countries.
- e. With the permission of the cooperating country, provision of census data on women to PPC/PIDA (now PPC/WID or DIU/ESDS) in a form compatible with AID's computer-based data system.

4. Consultation (performed by Delta Systems)
 - a. Provision of short-term consultations to assist in census operations as needed.
 - b. Development of a roster of consultants with expertise in computer operations.

Contract and Funding History

The original five-year contract for \$2,004,244 was signed with DUALabs in September 1978. A total of \$1,476,425 has been obligated through April 30, 1982. The contract specifies the subcontractor personnel (from Delta Systems). Any additional obligation for this contract is contingent upon the outcome of this evaluation.

Contract Evaluation and Assessment

An interim evaluation was conducted in May 1980, by Dr. Sara Seims of S&T/POP/PDD (then project monitor) and Dr. Jane Jaquette of PPC/WID, and Ms. Cathy Gleason and Mr. John Marshall of SER/DM. The objectives of the evaluation were to 1) assess advisory services provided to LDCs; 2) assess the reports on software, enhancements options, and hardware; 3) assess the software enhancements made by the subcontractor (Delta Systems); and 4) assess the status and plans for the census reports on women.

II. PROPOSED EVALUATION

The proposed evaluation will assess progress to date in carrying out the major project tasks. In addition to the general questions of how appropriate this project has been in addressing LDC needs in processing large data files, the team will specifically be asked to examine:

1. Software Evaluation and Enhancement
 - a. How comprehensive and useful are the software evaluation reports (Basic Requirements and Options reports)? How were the reports used by AID/W, the USAID mission, host-country statistical and census institutions, and the

contractor? Has the Basic Requirements Report been given credibility by census and statistical institutions such as the U.S. Bureau of the Census, the U.N. Statistical Office, and those institutions in developing countries? Is software evaluation an activity which should continue to be supported, and is the contractor the most appropriate institution to do so?

- b. What were the scope and character of the software enhancements that were carried out? Did the contractor demonstrate sufficient initiative in identifying and making software modifications, given the level of effort specified by the budget? How adequate were the technical skills and timeliness of implementation of the enhancements--in terms of programming, technical assistance, and training for in-country applications? How effective were the software enhancements in improving utilization of the software packages? Was any follow-up assistance provided, as had been recommended in the Interim Evaluation Report?
- c. Is the CONTROL software program of sufficient technical merit to reduce coverage errors related to completeness of enumeration areas? How complete and useful is the software documentation? How adequate and effective was the operational testing of the program? Was CONTROL developed in a timely fashion to be useful during the 1986 Round of Censuses in developing countries? What impact has the availability of the program had on data processing?

2. Hardware Feasibility Studies

- a. How comprehensive, accurate, up-to-date, and useful is the hardware report? Was dissemination of the report adequate? Has the report been given credibility by census and statistical institutions? Is this an activity which should continue to be supported, and is the contractor the most appropriate institution to do so?
- b. Were the advisory services on computer hardware appropriate to the needs of developing countries? Were the services provided of sufficient technical quality and timely? What impact did they have on the work of the recipient institutions?

3. Census Data on Women

- a. How comprehensive and useful is the State-of-the-Art Report on census data on women? Was the report adequately reviewed by outside experts as recommended in the interim evaluation? How has the report been utilized? Should it be made available more widely, and if so to whom should it be distributed?
- b. Has the package of census data on women been prepared in a timely fashion to facilitate preparation of the country reports? Is the technical quality of the narrative framework adequate? How has the package been used, and how effective are the materials, given the overall project task? How might the package be revised to improve its usefulness?
- c. How cost-effective were the conferences in facilitating implementation of the project task? Should the contractor convene another conference during the life of the contract for the project authors? What might be accomplished by such a conference?
- d. What is the progress to date on the preparation of the 10 country-specific reports? Has the contractor demonstrated adequate technical knowledge and initiative in implementing this task to ensure successful completion of the reports, given the level of effort specified in the budget? How did the contractor respond to the recommendation in the Interim Evaluation Report to inform current and potential authors about technical assistance available through the contract which could facilitate preparation of country reports? What kinds of technical assistance have been provided and how effective have they been? Have sufficient efforts been made to ensure completion of the country reports? What other efforts are recommended to this end?
- e. What plans or progress has been made for making census data on women available to AID (PPC/WID or DIU/ESDS)?

4. Consultation

- a. What was the technical quality and effectiveness of the short-term consultations provided to developing-country officials on census operations?

- b. What is the caliber of the consultants' roster? How useful has the roster been in implementing the various project tasks? How could or should the roster have been used more effectively?

5. Management, Administrative, and Staffing Issues

- a. Have the contractor and subcontractor responded promptly to AID/W and mission requests for assistance?
- b. Has the contractor submitted reports (quarterly, annual, and trip reports, as well as reports related to major project tasks) promptly and according to the schedule outlined in the contract?
- c. Does the contractor have adequate procedures to track project costs?
- d. Are the number and technical expertise of the staff adequate to carry out the project tasks?

Appendix D

1980 ROUND OF CENSUSES (932-0622):
AID INTERIM CONTRACT EVALUATION

Appendix D

1980 ROUND OF CENSUSES (932-0622): AID INTERIM CONTRACT EVALUATION*

This evaluation report is divided into two main sections. The first section concerns the Census Reports on Women project undertaken by DUALabs, and the second section concerns the ad hoc computer-related technical assistance provided by Delta Systems, the DUALabs subcontractor.

Section I: Census Reports on Women (DUALabs)

The goal of this subproject is to produce, by FY 1983, 10 high-quality country reports on the status of women, with the material for the reports coming primarily from census data. Specifically, the reports should not merely describe the general demographic and socioeconomic status of women, but should provide the information in such a way that planners involved in women's programs will find the reports useful and interesting for their programmatic purposes.

To assess the likelihood of this goal being achieved, the evaluation team focused on the following issues:

- a. Current status of the reports;
- b. How DUALabs identifies, motivates, and provides technical assistance to the authors;
- c. The quality of the state-of-the-art report produced by DUALabs; and
- d. Future plans for this project.

In this regard, Jane Jaquette of AID/WID and Sara Seims visited DUALabs' offices to meet with all the staff involved in this project, including Jack Beresford, president of DUALabs, Deborah Pomerance, and Diane Ellis.

The overall impression of the evaluation team is that DUALabs has a good and dedicated staff which is working hard to ensure the successful completion of this project. DUALabs views the purpose of this project,

* This appendix has been edited for consistency and clarity.

and rightly so in the team's opinion, as going beyond the preparation of these reports. Rather, the staff hope that the mechanism of writing these reports will form the basis of future plans for women's programs in the project countries.

A. Current Status of Reports

To date, authors from Bangladesh, Costa Rica, Indonesia, Kenya, Mauritania, Nepal, Panama, Peru, and the Philippines have been identified. The status of these country reports is as follows:

1. Costa Rica will not have a census until 1983. As a result, the author from this country is using 1973 census data for the first part of the report and plans to use 1983 census data for a second volume (which she plans to produce even though she will not be supported by this project). This author is extremely committed and has already produced a lengthy document of a very high technical quality.
2. Indonesia will have a census in the fall of this year, and the author has been in contact with DUALabs to discuss the variables to be analyzed for this report.
3. Kenya took a census in 1979 and the author has already produced a report outline.
4. Panama had a census last month, and the author has been in contact with DUALabs and has begun the preliminary planning for the report.
5. Bangladesh, Nepal, and Peru will not have a census until 1981. As a result, the authors, while apparently still committed, have not had the opportunity to produce any tables or perform any analyses.
6. Previously identified authors from Mauritania and the Philippines may no longer be involved in this project. The author from the Philippines does not appear to have the cooperation of the head of the Department of Statistics, while the author from Mauritania has not responded to DUALabs' enquiries for almost one year. At the request of APOW, the mission in Mauritania contacted the author, who gave verbal confirmation of his continued interest. This mission has again been requested to get more specific information from this author.

B. Identifying, Motivating, and Providing Technical Assistance to Report Authors

1. Identifying Authors

DUALabs has relied primarily on its personal contacts in its quests for report authors. Several members of DUALabs staff have attended the last two annual meetings of the PAA specifically to spread the word about this project. This has proven to be quite an effective means of communication and has accounted for several of the country authors listed above. In addition, Liliane Flöge sent a descriptive air cable to all missions.

Several leads have been obtained from these attempts. Additional inquiries have been received from such places as Brazil, Colombia, Ghana, Senegal, and other countries. It is hoped that authors will be nominated from these countries.

The evaluation team felt that DUALabs was doing a satisfactory job locating and responding to initial inquiries from prospective authors.

2. Motivating and Providing Technical Assistance to Authors

The main mechanism used by DUALabs to motivate authors is to create a feeling of group cohesion and to offer technical assistance. The conference at Chamrousse and letter and phone contact with authors have been among the methods that DUALabs has used to date to nurture commitment to the project.

To date, the technical assistance offered has varied according to the status of each individual's report. Those authors who have made a lot of progress, such as the researcher from Costa Rica, have received a lot of individualized assistance from the DUALabs staff. In addition, the state-of-the-art report (discussed below) provides guidelines for the utilization of census data for a project of this kind. Although the evaluation team felt that these efforts have been very productive, there was serious concern about whether there would be a sufficient diversity of assistance offered by DUALabs to the reports' authors at later stages of the project. The evaluation team felt that it was possible that current and prospective authors were not fully aware of the range of assistance offered by DUALabs and, indeed, that DUALabs had not yet decided on exactly what it could and should offer. Because report authors receive no salary for their work, it is imperative that they be fully informed of the ways in which DUALabs can facilitate the preparation of the reports.

Given the timing of censuses and the hiatus until data get processed, it is the opinion of the evaluation team that DUALabs has done much to facilitate the production of the reports up to this point. However, the

time is fast approaching when census data will be available and the possibilities of DUALabs assistance will increase. Examples of the types of possible assistance, in addition to the annually scheduled group conferences, include:

- working with the individual authors to suggest tailored tabulations which can be produced from their country's census;
- developing and installing special software packages to produce these tabulations;
- paying for research assistants to help the authors with the necessary bibliographic research;
- paying for graphics, typing, editing, duplication, and dissemination of the reports;
- using outside consultants with expertise in women's issues and in the socio-demographic situation of each individual report country (a consultant team for each country could then be formed);
- bringing together the individual authors and their country consultant teams for intensive consultation at key stages of the report preparation (i.e., immediately prior to the census, immediately after the census, and periodically thereafter); and
- forming a consultant panel to review the draft of each report and to work with the authors should modifications be necessary.

No doubt, DUALabs does plan to offer many of the above types of assistance. If so, the evaluation team recommends strongly that this be clearly specified in DUALabs' descriptive material about the project and communicated to current and prospective authors.

According to the budget of this contract, approximately one-half of the funds from the 1980 Round of Censuses project allotted to DUALabs support the activities of its subcontractor, Delta Systems. The evaluation team believes it is imperative for DUALabs staff to keep their AID project manager informed, if the proportion of project funds allotted to Delta is threatening the technical assistance possibilities for the Census Report on Women project. If approximately one-half of DUALabs' project funds remain with the Census Report on Women project, just over \$250,000 annually for five years will be available. Even with annual conference costs, DUALabs salaries, and overhead, the evaluation team believes that there are sufficient funds available to provide some, if not all, of the assistance described above to the authors.

If DUALabs concurs, the evaluation team recommends that country consultant teams be formed within the next few months.

C. State-of-the-Art Report

The evaluation team felt that the state-of-the-art report produced by DUALabs represents a good first effort to present the general application of census data to women's issues. The team recommends that, as DUALabs staff become more experienced with the actual ways that census data can be applied to the women's report, they produce a second draft of their state-of-the-art report. The team further recommends that after the second draft is prepared, DUALabs maintain the practice of having this report reviewed by outside experts in the field.

D. Future Plans

Given the variable nature of this project, DUALabs' future plans rely heavily on tailored technical assistance to the individual authors. The evaluation team was impressed by the commitment DUALabs has shown to offer this kind of assistance and recommends that future technical assistance plans be developed and promulgated as specified in Section A above.

DUALabs staff also discussed their belief that annual conferences may sometimes not be as productive as individual meetings with the authors, especially because many of them do not yet have any data. DUALabs staff suggested that new authors identified in the next year or so and current authors at critical stages of their analysis should be provided with individualized technical assistance. It has been suggested that, during 1980, individualized technical assistance take the place of the annual conference. The evaluation team concurs and supports this kind of approach by DUALabs.

The evaluation team also recommends that DUALabs become more aware of and involved in other activities related to women's data activities. Jane Jaquette has offered DUALabs her assistance in this endeavor.

E. Conclusion

The evaluation team was satisfied with the way DUALabs has managed the Census Report on Women project. The evaluation team was impressed with the care and concern DUALabs staff have shown to this project. DUALabs appears to respond quickly and responsively to authors' requests for technical assistance. The main recommendation of the evaluation team is that the full range of possible kinds of technical assistance be determined by DUALabs and communicated to current and prospective authors. If this is not done, the evaluation team feels it is highly possible that the goal of producing 10 high-quality, pertinent reports on women may not be reached.

Section II: Ad Hoc Computer-Related Technical Assistance
(Delta Systems)

The evaluation of the performance of Delta Systems was undertaken by the AID/W Office of Data Management. The evaluation scope covered the following areas:

- Cost and effectiveness of Delta's ad hoc technical assistance;
- Hardware and software reports prepared by Delta; and
- Delta's ADP facilities in Miami.

A. Cost and Effectiveness of Delta's Ad Hoc
Technical Assistance

To date, Delta has provided computer-related technical assistance in 16 countries. Types of assistance provided by Delta include installing and modifying the census tabulation packages, COCENTS and CENTSaid; training LDC computer personnel in the use of these packages; and reviewing and evaluating census computer facilities.

It had been hoped that while on TDY in Africa, a representative of the AID/W Data Management office could review the quality of advisory services Delta offered in Mali and Tanzania. Unfortunately, this was not possible. However, cables requesting information about Delta's services were sent to Jamaica and Tanzania--two places where Delta had installed COCENTS and trained programmers to use it. Both missions contacted appropriate government statistical offices, which stated that COCENTS was working but not used because of insufficient experience among the personnel. Both missions indicated satisfaction with Delta's training program. (See Attachments I and II.)

Delta cannot be held responsible for the general lack of experience of computer personnel in government statistical offices, but if the utilization of COCENTS in Jamaica and Tanzania is typical, it may behoove AID to adapt the computer assistance package. For example, some kind of follow-up COCENTS, or CENTSaid, training might be useful to reinforce earlier installations.

Attachment III, provided by Delta, gives the costs for each of the TDYs. The AID/W Office of Data Management has found the staff, travel, and computer costs to be realistic and appropriate.

B. Hardware and Software Reports Prepared by Delta

Based on these reviews, SER/DM determined that Delta Systems has met the terms of the contract pertaining to the specific reports mentioned above. Although Delta met the terms of its contract, SER/DM had the following comments pertaining to the reports:

1. The Software Report

- a. The narrative describing the function of an editing and correction process could have been written more clearly.
- b. The outline for the "Ideal" editing system is well-developed.
- c. Although the contractor developed an outline structure of evaluating edit and correction packages, he should have developed a matrix that would have shown at a glance the positive or negative attributes of each package.
- d. The narrative description describing each package evaluated could have been written more clearly.
- e. The contractor does not follow consistently the outline developed for evaluating all editing packages.
- f. The contractor is inconsistent in his review of the packages evaluated. In the review of CONCOR-C, he went into an in-depth analysis of problems remaining in the software; in contrast, other packages were brushed over lightly. This attention to CONCOR-C may be due to the fact that the contractor has evaluated CONCOR-C several times while attending workshops at the request of the Office of Population.

2. The Options Report

The only comment pertaining to the Options Report is directed to the section entitled "Strategy for the Enhancement of COBOL CONCOR EDITING SYSTEM." Although the contractor estimated time and cost, it would have been beneficial to indicate staffing requirements, level of expertise, person-months based on staffing, and cost estimates for each.

3. The Hardware Report

a. Service ranking on the computer fact sheet is not clear in meaning; in some cases, it is blank, and the numbers range from 1 to 4, with no definition of what the numbers mean.

b. The speed for cycle-time and add-time on the computer fact sheet does not indicate if the timing is in microseconds, nanoseconds, or another measurement of time.

c. The country reference file, although useful, should elaborate more on hardware code and software experience categories. The definition for the categories is not clear.

d. Similar country computer references prepared by other organizations appear to show more up-to-date information about LDC computer facilities. It is recommended that when Delta updates the report that every effort be expended to ensure that the very latest available information is included in the country reference section.

C. Delta's ADP Facilities in Miami

Delta's ADP facilities were reviewed and found satisfactory. The trip report of SER/DM's representative, Ms. Catherine Gleason (see Attachment IV), gives full details of Delta's facilities.

memorandum

DATE: June 16, 1980

TO: SBA/DM/PSE, Catherine B. Gleason

SUBJECT: Trip Report - Part 4 for the Interim Evaluation of Dual Labs
Contract - Delta Systems Facility Inspection in Miami

TO: DS/POP, Sara Seims

At the request of DS/POP, I conducted a 2 day review of Delta Systems' facilities, as well as a tour of their ADP service bureau at Eastern Airlines. Monday was spent talking to Mr. Joe Willard about Delta in general and his impressions of each task to date. Tuesday I talked with Mr. Larry Shiller and Mr. Richard Bunman specifically about their workshops. A discussion of my findings follows:

Delta Systems is comfortably situated in a two-story building in Coral Gables, Florida. (Figure 1). Currently, the second floor is available for expanded office space; while the first floor has a foyer-waiting room, terminal room, library, kitchen, barroom, storage room and four offices. The terminal room has sufficient space for the computer terminal-printer and a worktable. I was very impressed that the library contained reference manuals for most of the statistical software packages. Additionally, there were reference manuals for several models of computers.

Delta Systems uses the Eastern Airline service bureau for their ADP applications. The shift supervisor provided me with a tour of the computer room. There were two IBM-3830 computers, a large mass-storage device, many tape drives and a high speed laser printer. When asked about charges, the supervisor responded that Eastern was "half" as expensive as other service bureaus. (Joe Willard was asked to provide a matrix of computer charges for each Delta task to date). Observations at Delta and Eastern revealed computer turn-around-time to be unbelievably good. After the tour was completed, a tape copy was submitted to demonstrate response time. The blank tape submitted to control, a short walk to a user-terminal room, job submission to copy 20 files, and reacquisition of the tape at control required approximately twenty minutes - without any priority request! Delta staff indicated that they were very satisfied with both customer service and computer accessibility from Eastern. Several compiled and test runs were completed from Delta via the terminal and the results were almost instantaneous.

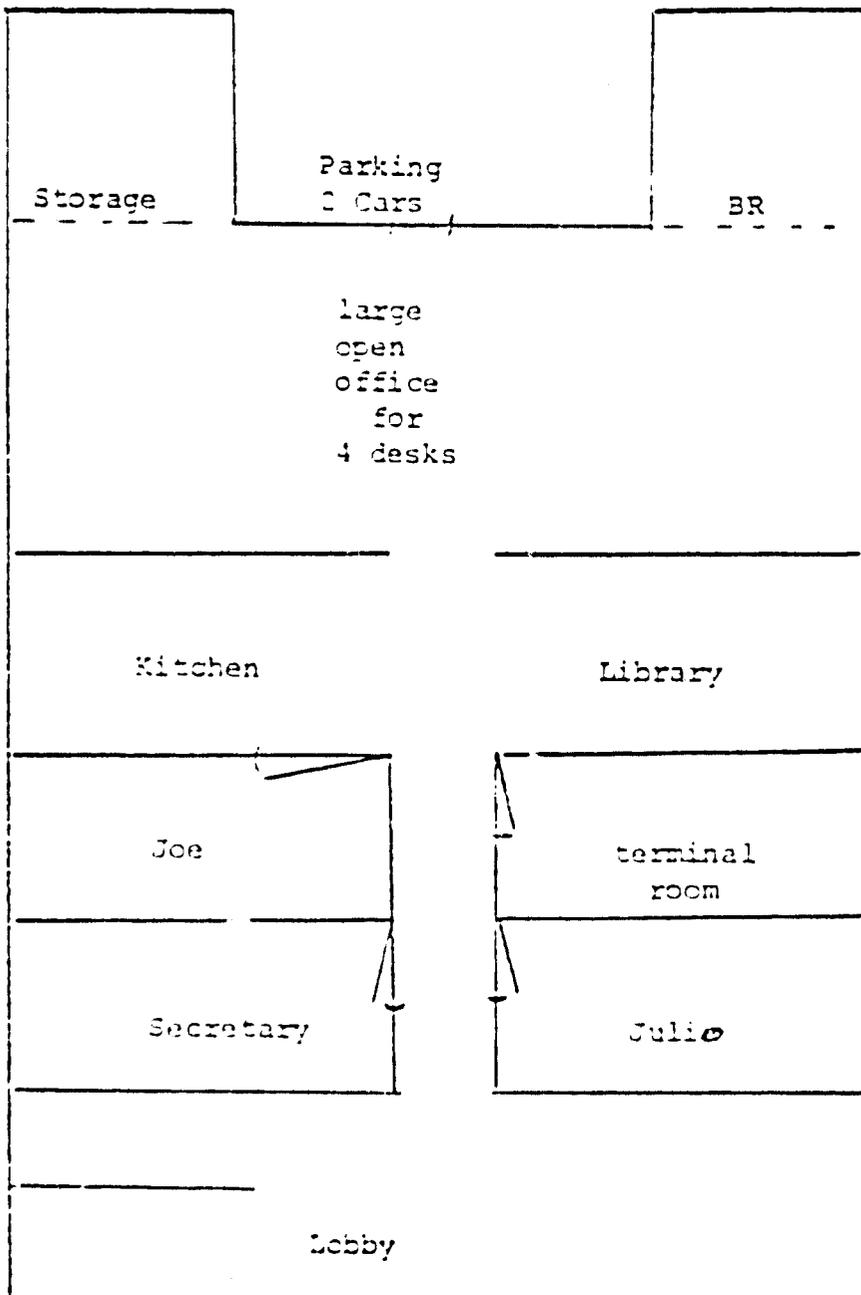
Attached is an outline for the CC-EINTE workshop. From the Delta point of view, all of the workshops had been a success. It would be beneficial to collect post-workshop evaluation data about three months after the workshop to indicate whether or not CC-EINTE was actually being used by the attendees after an initial trial.

-2-

The only minor situation was the completion of the assembly language CONCOR for WFS. It appears that there are some minor problems with the new consistency module. CELADE now has the responsibility for the completion of the assembler version. I intend to correspond with WFS to gather further comments, and any documentation.

In summary, Delta Systems facilities are better than average. Their computer service bureau provides them excellent support.

Delta Systems
264 Alhambia Circle
Coral Gables, FL. 33134
305-446-3638



2nd
story ends here

Delta Staff

	<u>Spanish</u>	<u>French</u>	<u>Portuguese</u>
Mr. Joe Willard, President	2		
Mr. Julio Ortuzar, Vice President	Native	Fluent	Fluent
Mr. Richard Buhman, Analyst	2		
Mr. Larry Shiller, Analyst	1	2	
Ms. Leanne Schelberg, Tech. Writer			
Ms. Ethel Ziegenhert, Secretary	Native		

DELTA SYSTEMS CONSULTANTS, INC.

TRIP No.	COUNTRY	DELTA STAFF	DATES	PERSON DAYS	TRIP PREPARATION COSTS			COST OF TRIP MISSION			GRAND TOTAL	
					STAFF COSTS	COMPUTER COSTS	TRAVEL COSTS	TOTAL	STAFF COSTS	TRAVEL COSTS		TOTAL
3	El Salvador	Ortizar	1/28/79-2/10/79	22					\$ 6,095	\$ 1,954	\$ 8,049	\$ 8,049
4	Senegal, Mali, Niger and Upper Volta	Willard	2/11/79-3/02/79	12.5	\$ 145			\$ 145	4,933	2,462	7,395	7,540
11	Jamaica	Willard	1/17/79-2/21/79	4.1	36			36	1,161	407	1,568	1,604
12	El Salvador	Ortizar	11/20/79-01/09/79	9					2,493	887	3,380	3,380
14	Tanzania & Senalia (including flight to Washington, D.C.)	Dobson	10/21/79-11/08/79	25	597	422	268	1,287	4,377	3,275	7,652	8,939
16	El Salvador	Ortizar	10/15/79-10/17/79	5					1,513	500	2,013	2,013
17	Jamaica	Dobson/Shiller	10/21/79-11/08/79	34	1,968	590		2,558	4,723	2,292	7,015	9,573
18	London, England	Ortizar	11/11/79-11/21/79	7.5					2,314	1,500	3,814	3,904
22 & 23	Tanzania, Kenya, and Uganda (includes trip to Atlanta, Ga.)	Shiller	3/05/80-4/11/80	27	723	1,472	201	2,479	4,157	4,096	8,253	10,732
TOTALS					\$3,469	\$2,401	\$552	\$6,505	\$31,796	\$17,553	\$49,349	\$55,054

Attachment 1

D-13

Appendix E

MEMORANDA AND NOTES ON POPULATION CENSUS



UNITED STATES DEPARTMENT OF COMMERCE
Bureau of the Census
Washington, D.C. 20233

January 22, 1982

Terry Tiffany
Health Nutrition & Family Planning
USAID/Jamaica

Dear Terry:

A Population Census not only provides benchmark data on a wide variety of subjects, it also provides a sampling frame for the numerous intercensal surveys that will meet many of the nation's data needs for the next decade or longer. As such, a census represents an indispensable tool for development planning.

In spite of budget constraints which have delayed the census for two years, the Department of Statistics (DOS) has supported a small but qualified professional staff which has been working diligently to maintain ongoing operations, while preparing for the dramatically increased workload a full census entails. Much of the task of preparing for a census has been shared with other CARICOM countries. Forms design, field manuals, office manuals and general methodology are collectively prepared and essentially the same for most of the English speaking Caribbean. This is not to say that all these forms and procedures are flawless and cannot and should not be improved by Jamaican Census personnel, but the basic procedures are sound and will provide a data set which is comparable with earlier data for Jamaica as well as other CARICOM countries.

— Based on observations of Census operations in Guyana by BUCEN staff where we assisted in the development of an agricultural supplement to the census, and on discussions with DOS staff, there are several areas of mutual concern where immediate technical assistance seems indicated. These are training, operational control and data processing.

Regarding training, BUCEN generally recommends developing verbatim training guides, especially when training is to be conducted for a great number of trainees by a large number of trainers. The verbatim guide provides for a clear, accurate, standardized, and uniform training session for all trainees by providing a script for the trainer. The lack of precise, standardized training was a source of problems in Guyana.

Operational control includes control of the distribution and flow of all forms and material to the field, in the field, to the office, and among various office operations. One of the difficulties experienced in Guyana was the lack of a master control list of Enumeration Districts to control the flow of forms among some office operations. Reportedly, this led to confusion as to which Enumeration Districts were through the check-in and edit operations and may have led to the loss of some forms.

Since the Caribbean Census methods call for a separate form for each individual, I would expect that approximately 2.0 million forms will need to flow smoothly and quickly through the system. The control of such a vast amount of material must be thought out carefully and thoroughly. Of necessity, there must be a means of monitoring and controlling each operation and each transmission of materials.

In the data processing area, there are a number of concerns. First, all participating Caribbean countries are using a mark sense form. Simply stated this is a form which can be read directly by machine usually using a type of optical scanner, and therefore not requiring keypunching. Since it is designed to be read by machine, the format of the form does not lend itself to keypunching. However, the mark sense reader that Jamaica plans to use is presently in Barbados. It is the same one that Guyana and other Caribbean countries also intend to use. The machine was not operating last year. Since, I have heard numerous conflicting reports ranging from 'it has been repaired' to 'there are no funds to repair it.' Since keypunching is not a likely option this could be a very serious obstacle.

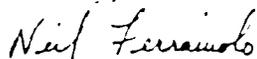
Another processing issue involves the availability of data processing staff to write programs to process the Census data. Programs for editing and tabulating the data should be prepared and tested well in advance of the expected date that data will be available for processing. However, I understand that this has not been done. Given the demands placed on a relatively small processing staff, it will probably be some time before such programs can be prepared and tested. According to Grace Robinson in the data processing section of DOS, BUCEN's software developed by BUCEN is on their present system and may be used on the new IBM system 38 computer to process the tabulations for the census. Programming for the edit would be facilitated greatly if a package such as our CONCOR were also to be used. Use of appropriate software will maximize the scarce resource of data processing staff. However, whatever software is utilized, one issue remains, i.e. who is able and available to write the necessary programs for the various edit and tabulations programs. All of these concerns have been discussed with Mr. Roland Booth and Mr. Vernon-James as well as other Statistics staff.

If USAID/Jamaica is concerned about these matters and can find a ready source of funding, BUCEN has available staff to look into these issues further and to provide technical assistance as needed and requested by the Department of Statistics.

Since the Census is to take place in less than 5 months, I must stress that time is very, very short for positive action.

If you have any questions, please do not hesitate to contact me.

Sincerely,



NEIL FERRAIUOLO
General Surveys Branch
Bureau of the Census

February 10, 1982

Mr. Terrence Tiffany
Chief, Health/Nutrition/
Population Division
US Agency for International
Development
U. S. Embassy
2 Oxford Road
Kingston 5

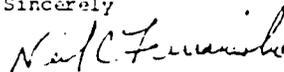
Dear Terry:

Attached is a copy of my personal notes from the meeting I had with Carmen McFarlane and staff on February 2nd, regarding The Population Census. I asked Nicky to type them up because, despite the stream of consciousness style, I thought they might clarify and document some of the concerns and problems that have been expressed about the census.

I feel that further work is needed to quickly assess the situation and provide immediate follow-up action.

Your thoughts and comments would be appreciated.

Sincerely



Neil C. Ferraiuolo

Enc.

PERSONAL NOTES ON MEETING OF FEBRUARY 2, 1982*
(DRAFT)

A meeting was held with Carmen McFarlane, Grace Robinson, Valerie Van Nam, Vernon James, and Roland Booth at the Department of Statistics (DOS) on February 2, 1982.

Carmen and the staff reviewed the letter to Terry [Tiffany]. Carmen reviewed her main concerns in the order outlined below.

A. Data Processing

1. Document Reading

Jamaica initially expected to utilize the IBM document reader at the Ministry of Education. However, there have been lots of problems with the machine, perhaps because of the poor treatment, environment, and service it was exposed to early on. Because of the frequent breakdowns, there is now a backlog of work for the machine, where it was thought that there would be considerable excess capacity. Because of backlog and operational difficulties, Carmen believes it is not feasible to use this machine. She has investigated the possibility of renting another machine from IBM, but IBM is not really interested because [it] does not think it is profitable, given the short duration [the Department of] Statistics would need it. Even when the possibility was raised that the Ministry of Education might later purchase or rent it to replace [its] current machine, IBM still was not very supportive. One reason seems to be that the type of reader needed is out of production and IBM "cannot find any available." Reportedly, the machine must be an IBM to do the job properly. Carmen said that this leaves her the following alternatives:

- Change the method of processing. This is not likely, because it would mean redesigning and reprinting forms at considerable loss of foreign exchange expenditures. Also, this would definitely postpone the census.
- Waiting for the CARICOM machine to become available and renting, buying, or borrowing it from Barbados. This assumes that the machine will be repaired and that document reading for all other Eastern Caribbean islands (except Antigua which, with Jamaica, is the only other Commonwealth Caribbean island which has not

* These notes have been edited for clarity and consistency.

conducted its census) will be completed so that Jamaica can obtain, ship, install, and begin using the reader by July 1982. Although the machine is not yet operating, the problem has, apparently, been traced to a "small valve-like part" which is being shipped express from Canada (an earlier shipment was lost in mail). Another concern is that Jamaica wants an independent machine, i.e., one that does not need to be connected to a computer. The Barbados machine will require computer hook-up and, because the Statistics [Department's] computer is not compatible, arrangements will need to be made with [the Central Data Processing Unit] CDPU to use [its] equipment. Finally, the machine is 50 cycles, which may also present a problem. However, Rick Holder, in Barbados, has told Carmen that he believes everything will be straightened out and that Jamaica will have the machine by August of this year.

- Census forms can be sent to Barbados to be read. This may be possible, but is doubtful because of space and staff constraints in Barbados. Jamaica's 2.2 million or so forms might overwhelm them. Also, computer edit and correction is an interactive process which requires access to the forms and, after corrections are made, reentry through the document reader, so this would likely entail more than simply having Barbados read the documents.
- Finally, the possibility exists to contract the job out to a service bureau and have a small Jamaican staff assist in the interactive edit process. Some precedent exists for this approach in Bermuda (which may have used a Pennsylvania firm) and Belize (which is now using a firm from Canada).

The problems of document reading are recognized as real and serious, and Carmen is actively seeking a reasonable solution among limited alternatives.

2. Editing and Tabulating the Data

To date, Jamaica does not have any census forms in hand. Although the forms for 1980 were printed in Canada by IBM, they have not been delivered, because they have not been paid for yet. Payment was put off when the census was delayed because of foreign exchange problems. Ms. Robinson reported that some edit programs for range and consistency check have been written and tested on the System 3; however, update and reformat programs have not been written, because the staff reportedly need to see the forms and the mark sense reader to know how to proceed. Another problem is that Statistics is planning a system conversion from IBM System 3 to System 38. The System 38 will be the first one in Jamaica, and there is currently no one on the island who has experience

with this system. The machine was to be installed at IBM headquarters in Kingston in December 1981, so IBM personnel can work with the machine and convert the major programs that Statistics uses from System 3 to System 38. The plan was then to install the machine in March 1982, at Statistics. However, as of this meeting, the machine [had been] on the wharf in Kingston for some time.

When the machine is installed, those edit programs that already have been written will need to be converted and tested on this new system, and additional edits will also need to be written, as noted earlier. The current plan for writing the tabulation program is to use the BUCEN COCENTS software, which is now on the System 3. However, none of the current staff has used or has been trained in COCENTS, and its installation on the System 38, as well as training and assistance, will likely be required before the package can be used.

B. Training

Both Carmen and Valerie Van Nam, who is responsible for training, are concerned about the effectiveness of the currently planned training program and were very interested in developing verbatim training guides. However, Valerie is responsible for writing all training manuals and procedures as well as preparing the overall census plan and scheduling and writing all field and office operations and procedures manuals by herself. Given the enormous scope of this task, the timing involved, and the likelihood of other duties and responsibilities to other programs not discussed, I cannot see how an adequate job can be done.

Carmen said that Jamaica has always considered the regional procedural manuals and training guides to be weak. For this reason, Jamaica developed its own procedures in 1970 and is planning to do so again for this census.

Census day is scheduled for June 7 and, although no formal written schedule was available, we did compute the following estimated training dates during the meeting:

April 1	45 Commissioners
May 5	965 Supervisors
May 18-26	5,700 Enumerators
May 26-31	2 Sessions

In connection with training, we discussed another process just as important and sometimes even more difficult; that is, recruiting, testing, and hiring. Carmen described the system they use here in Jamaica, and it sounded essentially identical to the one used in the U.S. Although there may be a large labor pool available here on which to draw, the process of selection is critical to the success of the field operation and the quality

of the data. Educated supervisory staff with some managerial skills are one of the most important advantages a good recruiting campaign can help to provide. Design of a recruitment plan; preparation of recruitment materials; printing of sufficient testing forms; a system for grading that provides for rapid results and adequate security, confidentiality and fair hiring practices; arrangements for testing sites; staff to carry out testing and grading; and proper areas to store applications of qualified candidates are some of the things that must be considered. These were briefly discussed, as were the logistics involved in the training operation. Also, although paper for printing all the manuals, guides, tests, etc., has been ordered and is expected to be available, there is concern that additional, specialized printing equipment may be required. From our conversation, I concluded that little had been done to date in the way of preparing for any of these activities.

C. Operational Control

Carmen expressed concern for distribution of supplies to the field (everything from rubber bands, pencils, and envelopes, to forms and plastic bags to protect the forms). It always seems that items are overstocked in one area and nonexistent in another. Carmen was also concerned with what she and a former consultant, Mr. Ernie Moore, both perceived as a potential problem in the "decentralization" of the places where the forms will have to be sent. She would like assistance in designing forms and procedures for tracking forms from the field to the rural headquarters, to central headquarters, to the document reader (which, at best, will be as close as the CDPH), and to the Statistics Bureau, where the forms for records that fail computer edit will be reviewed and resubmitted through the document reader.

Carmen also mentioned that, despite numerous promises of a headquarters building for the census, a suitable one has yet to be obtained. So, at this late date, there is no building for the census. However, furniture has been ordered and is beginning to arrive.

D. Quality Control

Carmen is interested in receiving assistance in developing a quality control program. In 1970, sizable under-enumeration problems were discovered after the census was completed. In some areas, the Post Enumeration Survey (PES) uncovered such serious under-counts that the areas were censused again. Carmen would like to avoid problems of this magnitude and is interested in exploring methods to uncover severe under-counting before an enumeration district is closed out. We discussed recheck and reinterview plans and the appropriate staff to carry out such

a program. Other methods of improving quality control were discussed, including reducing enumerator work loads and increasing supervision in difficult-to-enumerate areas.

E. Post Enumeration Survey

The DOS conducted a Post Enumeration Survey in 1970 and would like assistance in developing a similar program for the coming census. BUCEN has many PES experts, but I am not one of them. However, it is my understanding that a PES should serve primarily as an evaluation tool after the census is completed. By design, it has all the advantages of a sample survey, and, as such, it is easier to control for all kinds of non-sampling error, which is the principal source of bias on the census. The PES would serve to estimate the size and nature of the under-count and also could provide data on the response-bias of specific census items. It is generally accepted as an essential part of any census program.

F. Foreign Assistance

Carmen related that in the last month or so the Prime Minister met with the American Ambassador and the Deputy Chief of Mission. During that meeting, Mr. Seaga asked the U.S. representatives to, as Carmen put it, "see what you can do for Statistics." The next day Carmen met the Deputy Chief of Mission, and he told her they would be getting together very soon. However, to date, there has been no follow-up from either side of which I am aware.

Carmen mentioned that in 1978 or 1979, USAID had asked if assistance was needed on the census. There was both interest and need, but the UNFPA initiated a regional assistance package and USAID stepped out of the picture. The UNFPA apparently did some work but shortly withdrew the bulk of anticipated assistance, as one report has it, to lend assistance to China, which has not conducted a population census since 1953.

COMMONWEALTH CARIBBEAN POPULATION CENSUS - JAMAICA

HOUSEHOLD NUMBER: 5

NAME OF INDIVIDUAL: [Blank]

Sex: [Blank] Age: [Blank] Marital Status: [Blank]

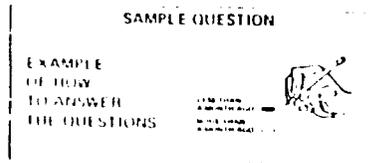
SEC 1 ALL PERSONS 1-6	3	RESIDING UNIT NUMBER	0 1 2 3 4 5 6 7 8 9	25	SEX	MALE FEMALE	
	4	DWELLING NUMBER	0 1 2 3 4 5 6 7 8 9	26	AGE	0 1 2 3 4 5 6 7 8 9	
	5	HOUSEHOLD NUMBER	0 1 2 3 4 5 6 7 8 9	27	MARRIED	NEVER MARRIED MARRIED DIVORCED SEPARATED	
	6	INDIVIDUAL NUMBER WITHIN HOUSEHOLD	0 1 2 3 4 5 6 7 8 9	28	RESIDENCE	LOCAL OR FOREIGN PARISH IN JAMAICA	
	SEC 2 ALL PERSONS 7-14	7	RELATIONSHIP TO HEAD OF HOUSEHOLD	HEAD PARTNER CHILD GRAND CHILD OTHER	29	BIRTH PLACE	PARISH IN JAMAICA FOREIGN COUNTRY
		8	SEX	MALE FEMALE	30	RACE	BLACK OTHER
9		AGE	0 1 2 3 4 5 6 7 8 9	31	RELIGION	ROMAN CATHOLIC OTHER	
10		MARRIAGE STATUS	NEVER MARRIED MARRIED DIVORCED SEPARATED	32	NUMBER OF YEARS LIVED IN THIS PARISH	0 1 2 3 4 5 6 7 8 9	
11		RESIDENCE	LOCAL OR FOREIGN PARISH IN JAMAICA	33	PARISH LAST LIVED IN	0 1 2 3 4 5 6 7 8 9	
12		BIRTH PLACE	PARISH IN JAMAICA FOREIGN COUNTRY	34	NUMBER OF PARISHES EVER LIVED IN	0 1 2 3 4 5 6 7 8 9	
13		RACE	BLACK OTHER	35	YEAR OF IMMIGRATION	1900 1910 1920 1930 1940 1950 1960 1970 1980 1990	
14		RELIGION	ROMAN CATHOLIC OTHER	36	TYPE OF SCHOOL OR UNIVERSITY NOW BEING ATTENDED	None Primary Secondary Other	
SEC 3 FOREIGN BORN ONLY 15-18		15	NUMBER OF YEARS LIVED IN THIS PARISH	0 1 2 3 4 5 6 7 8 9	37	ATTENDANCE AT SCHOOL OR UNIVERSITY/SPECIAL SCHOOL	None Part-time Full-time
		16	PARISH LAST LIVED IN	0 1 2 3 4 5 6 7 8 9	38	HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT	None Primary Secondary Other
	17	NUMBER OF PARISHES EVER LIVED IN	0 1 2 3 4 5 6 7 8 9	39	EXAM PASSED	None Other	
	18	YEAR OF IMMIGRATION	1900 1910 1920 1930 1940 1950 1960 1970 1980 1990	SEC 4 ALL AGES 19-24	20	TYPE OF SCHOOL OR UNIVERSITY NOW BEING ATTENDED	None Primary Secondary Other
SEC 4 ALL AGES 21-24	21	ATTENDANCE AT SCHOOL OR UNIVERSITY/SPECIAL SCHOOL	None Part-time Full-time		21	HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT	None Primary Secondary Other
	22	HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT	None Primary Secondary Other		22	EXAM PASSED	None Other
	23	EXAM PASSED	None Other		23	OPERATION FOR WHICH TRAINED OR BEING TRAINED	[Blank]
	24	OPERATION FOR WHICH TRAINED OR BEING TRAINED	[Blank]	24	PERIOD BY WHICH VOCATIONAL TRAINING COMPLETED	None Other	
SEC 5 ALL PERSONS 15 YEARS AND OVER 25-28	25	OPERATION FOR WHICH TRAINED OR BEING TRAINED	[Blank]	25	PERIOD OF TRAINING	None Other	
	26	PERIOD BY WHICH VOCATIONAL TRAINING COMPLETED	None Other	26	PERIOD OF TRAINING	None Other	
	27	PERIOD OF TRAINING	None Other	27	PERIOD OF TRAINING	None Other	
	28	PERIOD OF TRAINING	None Other	28	PERIOD OF TRAINING	None Other	

97

COMMONWEALTH CARIBBEAN POPULATION CENSUS

INSTRUCTIONS

- 1 Please use the #2 black lead pencil supplied when marking your answers to the questions on this form. DO NOT USE INK, BALLPOINT PEN OR COLORED PENCIL. If you make a mistake, erase cleanly and then fill in the answer space you want. Be sure to fill a response position (1-4) for each question where the question applies to the individual. Each answer space you mark should be filled in completely with a black mark, the same as shown in the SAMPLE QUESTION.



MAKE NO EXTRANEOUS MARKS OF ANY KIND ON THE FORM

- 2 Do not mark or write in the shaded areas. The areas will be marked in the central office.
- 3 When you have finished questions 1 through 24, carefully fold at perforation and continue with questions 25 through 46.
- 4 Try to make your marks as shown here:
 - An ideal mark
 - A readable mark

Do not make them:

- too light → Too light or poorly erased
- too short → Mark too short
- too long → Mark too long
- or too thin → Too thin to read

SECTION 6 HOUSEHOLD (FOR OFFICE USE ONLY)	25	TYPE OF HOUSING (HOUSE OR FLAT)
	26	NUMBER OF ROOMS (HOUSE OR FLAT)
	27	WATER SUPPLY (HOUSE OR FLAT)
	28	TOILET FACILITY (HOUSE OR FLAT)
	29	TYPE OF ENERGY USED FOR COOKING (HOUSE OR FLAT)
	30	NUMBER OF MONTHS WORKED DURING PAST 12 MONTHS (FOR OFFICE USE ONLY)
SECTION 7 FEMALE, 14 YEARS AND OVER AND EVER NOT ATTENDED SCHOOL FULL TIME	31	MAINTAINED EMPLOYMENT (LAST 12 MONTHS)
	32	NUMBER OF CHILDREN (5 YEARS AND UNDER)
	33	AGE OF MOTHER AT BIRTH OF FIRST CHILD BORN (CHILD)
	34	AGE OF MOTHER AT BIRTH OF LAST CHILD BORN (CHILD)
	35	NUMBER OF LIVE BIRTHS (CHILDREN) BORN (CHILDREN)
	36	UNEMPLOYED AT AGE 45 (DURATION OF UNEMPLOYMENT (YEARS))
SECTION 8 TYPE OF ROOM OR WATER SUPPLY TOILET FACILITY TYPE OF ENERGY USED FOR COOKING	37	TYPE OF ROOM
	38	NUMBER OF ROOMS
	39	WATER SUPPLY
	40	TOILET FACILITY
	41	TYPE OF ENERGY USED FOR COOKING
SECTION 9 TYPE OF ENERGY USED FOR COOKING	42	TYPE OF ENERGY USED FOR COOKING
	43	TYPE OF ENERGY USED FOR COOKING
SECTION 10 FEMALE, 14 YEARS AND OVER	44	TYPE OF ENERGY USED FOR COOKING
	45	TYPE OF ENERGY USED FOR COOKING

Appendix F

MEMORANDUM OF EXPENDITURES,
AID CONTRACT DSPE-C-0027
(May 5, 1982)

Appendix F

MEMORANDUM ON EXPENDITURES
AID CONTRACT DSPE-C-0027
(May 5, 1982)

The attachments contained herein summarize the expenditures of DUALabs, Inc., and Delta Systems, Inc., in connection with AID Contract DSPE-C-0027, which supports census technical assistance activities. These are rough estimates, limited by the lack of specific data supplied by the contractors.

The breakdowns of expenditures are by major functional areas and are intended to supplement the recent consulting report on the evaluation of the contractors' activities.

Although considerable funds have already been expended (50 percent of the contract), sufficient monies remain to perform further census data processing assistance and remedial work in the census data on women task areas. The expenditure of these funds, however, should be strictly prioritized.

Of the remaining \$842,282, it is estimated that 70 percent (or \$589,597) would be required to retain a consultant, travel to the countries affected, and produce tangible state-of-the-art products, as set forth in the original contract's scope of work. A census data on women expert should be asked to prepare a pro forma budget in this area.

With regard to data processing technical assistance activities, 30 percent (\$262,684) of the remaining funds, when judiciously applied, could support direct assistance in the form of the installation of tabulation packages, for example, to approximately as many countries as have been assisted to date. This estimate depends, of course, on the application of overhead rates, and the amount of pre-trip preparations required. In this instance, it is believed that Delta Systems should be required to submit an expenditure plan of activities as prioritized by the AID CTC.

CONTRACT TO DATE ACTUAL EXPENDITURES BY COMPANY

Actuals				By company total
DUALabs	207,086	193,726	196,112	596,924
Delta Systems	<u>206,387</u>	<u>195,372</u>	<u>202,777</u>	<u>604,536</u>
Total by year	413,473	389,098	398,889	1,201,460

Total contract monies (years 1-5) = \$2,043,742

Total expenditures to date (years 1-3) = 1,201,460

Total contract funds remaining = \$ 842,282

Summary: 59% of contract funds have been to date expended.
 Of the total to date expenditures, 49.6% has been by DUALabs, 50.3% by Delta Systems.

ANALYSIS OF TRIP EXPENSES
DELTA SYSTEMS CONSULTANTS, INC.

TRIP NO.	COUNTRY	DELTA STAFF	DATES	PERSON DAYS	TRIP PREPARATION COSTS			TOTAL	COST OF TDY MISSION			GRAND TOTAL	
					STAFF COSTS	COMPUTER COSTS	TRAVEL COSTS		STAFF COSTS	TRAVEL COSTS	TOTAL		
3	El Salvador	Ortuzar	1/24/79-2/10/79	22					\$ 6,095	\$ 1,954	\$ 8,049	\$ 8,049	
4	Senegal, Mali, Niger, and Upper Volta	Willard	2/13/79-3/02/79	17.5	\$ 145			\$ 145	4,933	2,462	7,395	7,540	
11	Jamaica	Willard	7/17/79-7/21/79	4.1	36			36	1,161	407	1,568	1,604	
12	El Salvador	Ortuzar	7/30/79-8/09/79	9					2,493	887	3,380	3,380	
14	Tanzania & Somalia (including #14 to Washington, D.C.)	Buhrman	10/24/79-11/08/79	25	597	\$ 422	\$268	1,287	4,377	3,275	7,652	8,939	
16	El Salvador	Ortuzar	10/15/79-10/19/79	5					1,543	590	2,133	2,133	
17	Jamaica	Buhrman/Shiller	10/24/79-11/08/79	34	1,968	590		2,558	4,723	2,292	7,015	9,573	
18	London, England	Ortuzar	11/14/79-11/23/79	7.5					2,314	1,590	3,904	3,904	
22 & 23	Rwanda, Kenya, and Uganda (includes trip to Atlanta, Ga.)	Shiller	3/05/80-4/11/80	27	723	1,472	284	2,479	4,157	4,096	8,253	10,732	
TOTALS -----						\$3,469	\$2,484	\$552	\$6,505	\$31,796	\$17,553	\$49,349	\$55,854

E-3

DELTA SYSTEMS STAFF TRAVEL SINCE APRIL 1980

TRIP NO.	COUNTRY	DELTA STAFF	DATES	PERSON DAYS	TRIP PREPARATION COSTS	COST OF TDY MISSION			GRAND TOTAL
						STAFF COSTS	TRAVEL COSTS	TRAVEL TOTAL	
26	Dominican Republic	Willard/ Buhrman	6/15/80- 6/25/80	8 8	\$ 250	\$ 5,146	\$ 890 857	\$ 6,893	\$ 7,143
27	Philippines	Shiller/ Ferri	8/13/80- 9/01/80	28 28	\$ 500 2,140	5,990	2,662 2,628	11,280	13,920
29	Washington, D.C.	Ortuzar	10/14/80- 10/16/80	3	-0-	1,173	388	1,561	1,561
31	Peru	Ortuzar/ Buhrman	1/31/81- 2/27/81	32 32	6,000	5,414	1,463 2,387	9,264	15,264
32	Baltimore	Ortuzar	5/12/81- 5/15/81	3	1,167	482	365	847	2,014
35	Zimbabwe & Zambia	Willard	5/25/81- 6/13/81	15	-0-	5,891	3,855	9,746	
36	Peru	Ortuzar	7/16/81- 8/17/81	12	2,000	4,693	2,090	6,783	8,783
37	Honduras	Ortuzar	9/16/81- 9/19/81	3		782	638	1,420	1,420
38	Chile & Argentina	Ortuzar	11/23/81- 12/11/81	11	1,956	4,304	3,326	7,630	9,586
39	Haiti	Buhrman	12/07/81- 12/09/81	3	824	824	468	1,292	2,116
40	Haiti	Buhrman/ Shiller	2/28/82- 3/06/82	10 10	85	2,539	1,400	3,939	4,024
41	Honduras	Ortuzar	3/14/82- 3/20/82	5		1,956	815	2,771	2,771
TOTALS					\$1,752	\$13,170		\$63,922	\$ 78,348
						1,752			55,854
						\$14,922			\$134,202
						GRAND TOTAL 1979-82			

DJALABS TOTAL EXPENDITURES TO DATE BY TASK AREA

<u>Activity</u>	<u>Dollars</u>	<u>%</u>
Census Data on Women (task 3)	\$338,251	56%
Other task areas	<u>258,673</u>	<u>44%</u>
	\$596,924	100%

DELTA SYSTEMS CONSULTANTS
TOTAL EXPENDITURES TO DATE BY TASK AREA

	<u>Dollars Spent</u>	<u>%</u>
Travel/technical assistance	\$134,202	22%
CONTROL	100,000*	17%
Census Data on Women	68,197	11%
Other task areas	<u>302,137</u>	<u>50%</u>
	\$604,536	100%

Estimated approximated by total manhours expended

DELTA SYSTEMS STAFF TRAVEL SINCE APRIL 1980

TRIP NO.	COUNTRY	DELTA STAFF	DATES	PERSON DAYS	TRIP PREPARATION COSTS		COST OF THIS MISSION			GRAND TOTAL	
							STAFF COSTS	TRAVEL COSTS	TRAVEL TOTAL		
26	Dominican Republic	Willard/ Buhrman	6/15/80- 6/25/80	8 8	\$ 250		\$ 5,146	\$ 890 857	\$ 6,893	\$ 7,143	
27	Philippines	Shiller/ Fenni	8/13/80- 9/01/80	28 28	\$ 500	2,140	5,990	2,662 2,628	11,280	13,920	
29	Washington, D.C.	Ortuzar	10/14/80- 10/16/80	3	-0-		1,173	388	1,561	1,561	
31	Peru	Ortuzar/ Buhrman	1/31/81- 2/27/81	32 32	6,000		5,414	1,463 2,387	9,264	15,264	
32	Baltimore	Ortuzar	5/12/81- 5/15/81	3	1,167		482	365	847	2,014	
35	Zimbabwe & Zambia	Willard	5/25/81- 6/13/81	15	-0-		5,891	3,855	9,746		
36	Peru	Ortuzar	7/16/81- 8/17/81	12	2,000		4,693	2,090	6,783	8,783	
37	Honduras	Ortuzar	9/16/81- 9/19/81	3			782	638	1,420	1,420	
38	Chile & Argentina	Ortuzar	11/23/81- 12/11/81	11	1,956		4,304	3,326	7,630	9,586	
39	Haiti	Buhrman	12/07/81- 12/09/81	3	824		824	468	1,292	2,116	
40	Haiti	Buhrman/ Shiller	2/28/82- 3/06/82	10 10	85		2,539	1,400	3,939	4,024	
41	Honduras	Ortuzar	3/14/82- 3/20/82	5			1,956	815	2,771	2,771	
TOTALS					\$1,752	\$13,170				\$63,922	\$ 78,348
						1,752					55,854
						\$14,922					\$134,202
									GRAND TOTAL 1979-82		

ANALYSIS OF TRIP EXPENSES
DELTA SYSTEMS CONSULTANTS, INC.

TRIP NO.	COUNTRY	DELTA STAFF	DATES	PERSON DAYS	TRIP PREPARATION COSTS			TOTAL	COST OF TDY MISSION			GRAND TOTAL
					STAFF COSTS	COMPUTER COSTS	TRAVEL COSTS		STAFF COSTS	TRAVEL COSTS	TOTAL	
3	El Salvador	Ortuzar	1/24/79- 2/10/79	22				\$ 6,095	\$ 1,954	\$ 8,049	\$ 8,049	
4	Senegal, Mali, Niger, and Upper Volta	Willard	2/13/79- 3/02/79	17.5	\$ 145			\$ 145	4,933	2,462	7,395	7,540
11	Jamaica	Willard	7/17/79- 7/21/79	4.1	36			36	1,161	407	1,568	1,604
12	El Salvador	Ortuzar	7/30/79- 8/09/79	9					2,493	887	3,380	3,380
14	Tanzania & Somalia (including #14 to Washington, D.C.)	Buhrman	10/24/79- 11/08/79	25	597	\$ 422	\$268	1,287	4,377	3,275	7,652	8,939
16	El Salvador	Ortuzar	10/15/79- 10/19/79	5					1,543	590	2,133	2,133
17	Jamaica	Buhrman/ Shiller	10/24/79- 11/08/79	34	1,968	590		2,558	4,723	2,292	7,015	9,573
18	London, England	Ortuzar	11/14/79- 11/23/79	7.5					2,314	1,590	3,904	3,904
22 & 23	Rwanda, Kenya, and Uganda (includes trip to Atlanta, Ga.)	Shiller	3/05/80- 4/11/80	27	723	1,472	284	2,479	4,157	4,096	8,253	10,732
TOTALS -----					\$3,469	\$2,484	\$552	\$6,505	\$31,796	\$17,553	\$49,349	\$55,854