

PD-AT-004

44147

Prepared for:

Office of Population
Bureau for Science and Technology
Agency for International Development
Washington, D.C.
Under Contract No. DPE-3024-C-00-4063-00
Project No. 936-3024

EVALUATION OF
DEMOGRAPHIC DATA FOR DEVELOPMENT
PROJECT

by

Michael Micklin, MA, PhD

Karen Foreit, MS, PhD

James McCarthy, MA, PhD

June 3 - 30, 1985

Edited and Produced by:

Population Technical Assistance Project
International Science and Technology Institute, Inc.
2033 M Street, NW, Suite 300
Washington, DC 20036
Phone: (202) 460-7290
Telex: 272765 ISTI UR

Report No: 85-44-022
Published March 11, 1986

TABLE OF CONTENTS

TABLES AND FIGURES INCLUDED IN REPORT.....iv

GLOSSARY.....v

ACKNOWLEDGEMENTS.....vii

EXECUTIVE SUMMARY.....viii

I. INTRODUCTION AND BACKGROUND.....1

 I.1 Purpose of Assignment/Scope of Work.....1

 I.1.2 Evaluation Team.....2

 I.1.3 Procedures.....3

 I.1.4 Evaluation Methodology.....4

 I.1.5 Limitations.....5

II. PROJECT BACKGROUND AND DESIGN.....6

 II.1 Evolution of the DDD Project.....6

 II.2 Project Objectives.....6

 II.3 Project Design.....7

III. MANAGEMENT AND FUNDING.....9

 III.1 Project Management.....9

 III.1.1 Scope of Work.....9

 III.1.2 Staff.....9

 III.1.3 Facilities and Services.....10

 III.1.4 Compliance with Project Schedules.....11

 III.1.5 Coordination with Related Programs.....12

 III.2 Project Funding.....13

 III.2.1 Scope of Work.....13

 III.2.2 Adequacy of Resources.....13

IV. PRINCIPAL PROJECT ACTIVITIES.....15

 IV.1 Technical Assistance and Microcomputer Transfer...15

IV.1.1	General Remarks.....	15
IV.1.2	Project Performance.....	15
IV.1.3	Impact.....	18
IV.1.4	Country Selection.....	19
IV.1.5	Country Strategies.....	20
IV.1.6	Quality and Duration of In-Country Assistance.....	21
IV.1.7	Future Level of Effort.....	22
IV.1.8	Follow-up of Assistance Provided by Other Contractors.....	22
IV.2	Microcomputer Applications - Technical Issues.....	22
IV.2.1	Types of Hardware.....	22
IV.2.2	Maintenance.....	24
IV.2.3	Software.....	25
IV.3	Population Data File.....	26
IV.3.1	Project Performance.....	26
IV.3.2	Organization and Use of Files.....	28
IV.3.3	Responsiveness of DDD to Requests for Information.....	29
IV.4	Population Reports and Policy Reviews.....	30
IV.4.1	Scope of Work.....	30
IV.4.2	Population Reports.....	30
IV.4.3	Policy Briefs/Reviews.....	31
IV.4.4	Other Dissemination Activities.....	32
V.	RECOMMENDATIONS.....	34
V.1	Management and Funding.....	34
V.1.1	Management.....	34
V.1.2	Funding.....	34
V.2	Principal Activities.....	34
V.2.1	Technical Assistance.....	34
V.2.2	Microcomputer Applications.....	34
V.2.3	Population Data Files.....	35
V.2.4	Population Reports and Policy Briefs.....	36
V.3	Follow-On Project.....	36

APPENDICES

Appendix A	List of Contacts
Appendix B	Materials Reviewed
Appendix C	Peru Case Study
Appendix D	Sahel Training: Case Study
Appendix E	Site Visits to Sahel Institute
Appendix F	Scope of Work
Appendix G	Contract Statement of Work--Demographic Data for Development
Appendix H	Tables and Figures included in Report

TABLES AND FIGURES INCLUDED IN REPORT
(All Tables and Figures Provided in Appendix H)

Report

Table III.1.4	Summary of Trip Reports and Dates
Table III.2.2	Projected Costs of Maintaining Current Rate of Activities and Spending
Table IV.1.1	Technical Assistance Provided by Westinghouse DDD Project
Table IV.2.1-A	Microcomputer Equipment Installed
Table IV.2.1-B	Microcomputer Equipment to be Installed

Appendix C

Figure C-1	Background of Trainees and Impact of Training: Peru
Figure C-2	Weekly use of Microcomputer--Peru

Appendix D

Figure D-1	Characteristics of Training: Comparison of Peru and Sahel
------------	---

GLOSSARY

AID	Agency for International Development
APROFAM	Private family planning association (Guatemala)
BuCen	Bureau of the Census
CNP	Consejo Nacional de Poblacion (National Population Office, Peru)
COBREH	Consultora Boliviana de Reproduccion Humana (Bolivian Consultancy for Human Reproduction)
CONAPOFA	Consejo Nacional de Poblacion y Familia (National Council of Population and Family, Dominican Republic)
DDD	Demographic Data for Development
FMCPDA	French Microcomputer Programs for Demographic Analysis
INE	Instituto Nacional de Estadisticas (National Statistics Office, Peru)
INPLAN	Integrated Population and Development Planning II (a Research Triangle Institute project)
IPPF	International Planned Parenthood Federation
LDC	Less developed country
MCPDA	Microcomputer Programs for Demographic Analysis
MB	Megabyte
MIS	Management information system
MOH	Ministry of Health
MOP	Ministry of Planning
PAHO	Pan American Health Organization
PEC	Post enumeration check
PFB	Population Reference Bureau
RAPID II	Resources for Awareness of Population Impact on

	Development
RFP	Request for proposal
RTI	Research Triangle Institute
S&T	Bureau of Science and Technology (AID)
TFG	The Futures Group
UNFPA	United Nations Fund for Population Activities
UPS	Uninterruptible Power Supply
USED	Socio-Economic and Demographic Unit (Institute of the Sahel)
WHS	Westinghouse Health Systems

ACKNOWLEDGMENTS

The members of the evaluation team wish to thank the management and staff of the Demographic Data for Development (DDD) project for the many courtesies extended to them during visits to the Westinghouse offices. In particular, we appreciate the willingness of DDD personnel to provide unlimited access to their files and to discuss in detail the many aspects of their work. We also thank the staff of the Policy Development Division, the AID Regional Bureaus, and the other AID contractors for their contributions to this evaluation. We are grateful to the staff of the Consejo Nacional de Poblacion, Lima, Peru, for hosting a field visit by one of the evaluators. Finally, we thank the staff of the International Science and Technology Institute for their efforts to coordinate the production of this report.

EXECUTIVE SUMMARY

1. The evaluation

This report is an evaluation of the Demographic Data for Development (DDD) project conducted by the Health Systems Division of the Westinghouse Electric Corporation under a contract with the Policy Development Division (PDD) in the Office of Population of the Agency for International Development (AID). The evaluation covers the first 31 months of activity of a five-year project.

The three-person evaluation team assessed progress on the project's four principal activities and its management and budget. Their methodology consisted of interviews, review of documents and one field trip. The major constraints in drawing conclusions were insufficient exposure to field operations and the intrinsic difficulty of assessing the long-term impact of a technical assistance project at mid-term.

2. Project Goals and Design

The project's principal goal is to provide technical assistance to selected developing countries for the analysis and dissemination of population and family planning information. The provision of technical assistance is often accompanied by the provision of accompanying microcomputer technology to host country institutions. These two intertwined activities take place primarily outside the United States. The other two principal activities are (i) development and maintenance of computerized data files containing demographic, population policy and family planning variables and (ii) preparation and dissemination of population reports and policy briefs. These activities take place primarily in the U.S. and are directed primarily to AID.

The project is complex, calling for a wide variety of skills and experience ranging from microcomputer installation and training to data processing and report preparation. There is a question whether the interests of efficiency would be better served if PDD projects were more specialized either by skill or by geographic region. In the present instance, however, the Westinghouse staff represents an excellent combination of the skills required.

3. Summary of Project Progress

The relatively small DDD staff has done an excellent job in

responding to a volume of requests for technical assistance and microcomputers that was considerably greater than anticipated. The time of the contract has been cut by six months to permit completion within the original budget of \$2,975,289. Except for preparation of population reports, project activities are being completed well within the time frame of the contract.

Thirteen countries, plus the Sahel Institute, have received technical assistance visits, with a total of 33 trips through May 1985. Microcomputer systems have been installed in seven countries, and related training and software have been supplied. Comprehensive population and family planning data files have been developed; through March 1985 a total of 76 requests for special tabulations and basic information had been filled. Eighteen policy briefs have been prepared, and several technical reports have been either drafted or outlined. A more detailed summary follows.

4. Management and Funding

4.1 Management

- o Project management is functioning well. With the exception of the population reports, contract requirements are being met or exceeded. The relatively small staff understandably lessens management problems.
- o DDD management does not feel that excessive or complicated reporting requirements hinder the operation of the project. A satisfactory working relationship appears to have been established between the AID project monitor and the DDD project director.
- o Nonetheless, staff trip reports of overseas activities have been consistently late, the average delay beyond the time allowed being nearly 13 calendar days. Of the 32 trips for which data are available, 28 resulted in a late report.
- o Although the contract calls for monthly financial reports, this requirement has not been adhered to and financial reports have been submitted on an irregular basis. There appears to be little likelihood of a significant cost overrun, however, because AID and Westinghouse have together worked out a modification of the contract that will result in an early termination of the project within the budget, but without reducing the number of deliverables.
- o DDD staff seem to know what one other staff members are doing and to provide the necessary cooperation with one another. This situation reflects well on DDD management.

4.2 Funding

- o AID did not anticipate the popularity and demand for technical assistance by developing country institutions. To meet the demand, DDD has had to increase the pace of its activities.
- o In spite of its limited budget, DDD management and staff have been imaginative in stretching available funds as far as possible. (It should be recognized that current DDD staff were not responsible for the original budget proposal.)

5. Project Activities

5.1 Technical Assistance

- o The DDD project has already exceeded the minimum number of countries stipulated in the contract. Given the limited number of DDD staff available and the time required in preparation, travel, and actual provision of technical assistance, Westinghouse cannot be expected to meet the current, let alone expected, demand for additional assistance to developing country institutions.
- o Much of the technical assistance provided under this project has included microcomputer applications (see 5.2). Only in Honduras, Kenya, and Nigeria has technical assistance been provided without provision of microcomputers. This is to be expected, as a strength of the DDD staff lies in the installation and adaptation of microcomputer technology for data analysis and interpretation.
- o Uniformly, recipients of DDD technical assistance have been pleased with the results, as have the USAID missions. Westinghouse staff are viewed as competent, easy to work with, and capable of satisfying pressing technical assistance needs of the LDC institutions they work with.

5.2 Microcomputer Applications

- o The DDD staff has done an excellent job of transferring and installing microcomputer hardware and software. The systems installed are well-configured, carefully planned, adequately tested, and responsibly maintained to the extent allowed by the conditions of the AID contract. The Westinghouse staff has achieved the state of the art in this

business.

- o It is encouraging to note that DDD management has been very resourceful in stretching limited funds to provide the best and most useful equipment and services as possible.
- o The major problems encountered in the transfer of micro-computer technology have been in the area of responsibility for maintenance of hardware. However, it should be noted these problems are generic to all projects involved in microcomputer transfer. Furthermore, major efforts have been made to ensure that all systems that have been installed are kept running and that whenever there has been a hardware or maintenance problem it has been resolved.
- o Serious, though resolvable, problems have also been experienced with respect to the manual accompanying the software that has been produced by the DDD project. There is a need for a more user-friendly manual for the demographic analysis programs, and a need for Spanish-language documentation and training materials (e.g., lesson plans), as evidenced by the DDD experience in Peru.
- o Insufficient time has been spent on post-workshop training and evaluation. Refresher courses should be developed that include tests for retention of materials and skills learned during the DDD training sessions. This type of follow-up activity will increase the likelihood that learned skills will not be forgotten.

5.3 Population Data Files

- o The files that have been produced are useful for a variety of audiences requiring demographic information, and they are adequately maintained by DDD staff. The principal objectives of this task have been met.
- o Westinghouse staff do not have the resources to field all the requests they are likely to receive for information from the data files. In addition, there is some question as to the degree to which the staff should be involved in responding to requests that call for data analysis.
- o At present, there are four data files, which, while well organized and maintained and easily accessible to Westinghouse staff, would be difficult for an outsider to use.
- o There is a question as to whether requests for data from these files should be encouraged and responded to regardless of the source of the request, or discouraged, except when

the request comes from AID officials.

- o The generally inadequate facilities and lack of full-time personnel at the AID computer center are serious constraints to the efficient use of the data files. This problem is, of course, beyond the control of Westinghouse.
- o Although many AID personnel have made use of the data files, knowledge of their content and potential uses is far from universal among AID staff.

5.4 Population Reports and Policy Briefs

- o Westinghouse is far behind schedule in the preparation of the population reports called for in the contract. Of those planned, perhaps two are of central importance to this project.
- o The contract requirement for the policy briefs has been satisfied and the end products are in demand.
- o This task represents the principal weak point of the DDD project because this type of activity may be incompatible with the heavy demand for technical assistance and ad hoc requests. DDD should concentrate its efforts and resources on those activities in which it clearly excels.

6. Recommendations

6.1 Management and Funding

1. Trip reports should be submitted on time.
2. Financial reports should be submitted more regularly, particularly as the contract period nears its end.
3. Additional staff, carefully selected according to the tasks that remain to be completed, should be hired as allowed by the budget.
4. Remaining funds should be used judiciously. Highest priority should be given to technical assistance and microcomputer applications.

6.2 Principal Activities

6.2.1 Technical Assistance

5. DDD management should continue to assure adequate backstopping while key personnel are on travel status.
6. No activities should be initiated in additional countries unless work in current countries is completed and adequate time and funds are available.

6.2.2 Microcomputer Applications

7. the problem of maintenance should be resolved by
 - a. signing appropriate documentation at the time of equipment installation on who is responsible for maintenance. This should be done retroactively for the equipment already installed. (This practice is apparently already in place.)
 - b. provision of a professional electrician at the time of installation.
 - c. designation by the host institution of one person responsible for the computer system
8. Minimum documentation in the host country language should be provided at the outset of the training. It should include lesson plans, exercises, and an overview of each software package installed.
9. Standardized post-workshop evaluation procedures, retention tests and refresher courses should be instituted, e.g., self-study material.
10. The manual for the demographic analysis software should be made more user-friendly.
11. Country Strategy Papers should be reviewed for justification of activities, institutional collaboration and timetable, and updated periodically.

6.2.3 Population Data Files

11. This service should be maintained for AID/Washington. Any plan to promote use by USAID missions should be held in abeyance, perhaps awaiting a follow-on project.
12. Requests should continue to be channeled through the AID project monitor.
13. Project staff should continue to use the electronic

remote bulletin boards to transfer results of data file requests to AID personnel.

14. Communication regarding the data files should be improved, particularly between DDD and AID's regional bureaus.
15. If AID decides that it wants to generate greater use of the data files, it must provide increased financial support for this purpose to Westinghouse or to a subsequent contractor.
16. It should be recognized by all potential users that this is a data base, not a research service.

6.2.4 Population Reports and Policy Briefs

17. Only two reports, (on natural family planning and microcomputer applications), should be finished. This task should be redefined to incorporate the preparation of multi-language training materials and reports on surveys for which DDD provided assistance.
18. The policy briefs task should be considered completed.
19. The additional dissemination activities called for under the contract should be carried out. These include distribution of yet-to-be-completed reports as well as the required LDC and Washington, D.C. seminars.

7. Follow-on Project

20. In a follow-on project, expanded emphasis should be given to 1) technical assistance, 2) microcomputer applications, and 3) maintenance of the data files, while population reports and policy briefs should be eliminated (see Recommendations 4, 17 and 18).
21. Independent of this follow-on project, AID should establish a clearinghouse for microcomputer transfer and documentation containing information about where different types of systems have been installed, problems encountered, and their resolution. It could also provide documentation in various languages for the major software systems.
22. AID must develop an explicit policy regarding long- and short-run maintenance of the systems its contractors install (see Recommendation 7).

23. AID must define the use and limitations of the data base. If this system is to be expanded or made more user-friendly, the necessary financial support must be provided (see Recommendation 16).

I. INTRODUCTION AND BACKGROUND

I.1 Purpose of Assignment/Scope of Work

This report is an evaluation of the Demographic Data for Development (DDD) project conducted by the Health Systems Division of the Westinghouse Electric Corporation in Columbia, Maryland. The project is carried out through a contract with the Policy Development Division (PDD) of the Office of Population of the Agency for International Development (AID). The evaluation covers the first 31 months of activity, from November 1982 through June 1985. The principal goals of this effort are to evaluate progress of the DDD project and to suggest needed changes in procedure or emphasis for the remainder of the project. A secondary goal is to suggest to AID how a follow-on project might be organized.

The scope of work (see Appendix F) governed the organization and contents of this report. It covers seven specific areas, including the four principal project activities, funding and management and future directions. While addressing the specific questions in the scope, the team sought to keep in mind the broader questions posed below:

(i) Project Design and Planning: Does the design of the DDD project correspond to the objectives set forth in the contract with AID? Have the activities carried out to date (and projected for the remainder of the contract period) been adequately planned? Have appropriate and sufficient resources been allocated to the program?

(ii) Project Monitoring: How well has the DDD project been implemented? Is it providing the appropriate services to the target populations to which it was addressed? Is the DDD project producing the products called for in the contract on time and in the expected quantity and quality? Is it collaborating effectively with AID, with other AID contractors, and with less developed country (LDC) institutions?

(iii) Outcome Assessment: Is the DDD project achieving its intended goals? Do DDD activities clearly lead to improvements in the quality of LDC demographic information and its use by LDC institutions? Are the products of the DDD project being used effectively by the intended target audiences? Are there any unintended side-effects of the project?

(iv) Economic Efficiency: What are the costs of delivering DDD services to the user-groups? Is the project an efficient use of resources compared with alternative (present as well as

future) uses? Is the DDD staff being used as effectively as possible?

I.1.2. Evaluation Team

The evaluators included Michael Micklin, Karen Foreit, and James McCarthy. Each team member has had extensive experience with population assistance programs in developing countries.

Dr. Micklin, the team leader, is a sociologist/demographer who has conducted basic and applied research in a number of Latin American countries over the past 20 years. From 1977 through 1983 he was associated with the Population and Development Policy Program of the Battelle Memorial Institute, and served as Director of that program for the period 1981-1983. He is currently Director of the Institute for Social Science Research, and Associate Dean of the College of Social Sciences at Florida State University. Dr. Micklin's principal responsibilities in this evaluation, in addition to coordination of the overall effort, covered project management, resource use, and preparation of population reports and policy briefs.

Dr. Foreit is by training an experimental psychologist with 10 years of experience in basic and applied research in contraceptive behavior, family planning programs, and primary health care delivery in the United States and LDC settings. She has worked as a consultant overseas since 1978. During 1978-79 she served as advisor in data management to the Korean Institute for Family Planning, and during 1983-84 she was advisor in operations research to the Ministry of Health of Honduras. She is presently an independent consultant. Dr. Foreit's principal responsibilities in this evaluation covered technical assistance and micro-computer applications, including a site visit to the National Council on Population (Consejo Nacional de Poblacion, CNP) in Lima, Peru.

Dr. McCarthy is a sociologist/demographer with experience in demographic research and family planning program evaluation in the United States, Latin America, and Egypt. He is currently a faculty member of the Department of Population Dynamics at the Johns Hopkins University School of Hygiene and Public Health, and is the Director of the Hopkins Population Center. For this evaluation, Dr. McCarthy concentrated on computer programs and packages, technical assistance, and the population data files.

I.1.3 Procedures

This evaluation was conducted during the months of June, July, and August. A total of 60 person-days was expended by the

evaluation team, and several additional days of effort were supplied by Susan Enea, a PDD staff member.

The evaluation began with a series of meetings with staff of the PDD. The project monitor and other PDD staff reviewed the work scope and scheduling of the evaluation, and provided a summary of project experience to date, as well as an assessment of the success of the project from the point of view of the PDD. Meetings were also held with representatives of AID's regional bureaus (Near East, Africa, Latin America, Asia) to determine their awareness of the DDD program and reactions to services provided by DDD. A final AID perspective on DDD was obtained through discussions with the Deputy Director of the Office of Population, the two regional coordinators in that office, and with the Chief of PDD.

Since a portion of DDD activities requires collaboration with other PDD contractors, the team conducted interviews with representatives of several organizations, including the U.S. Bureau of the Census (BuCen), The Futures Group (TFG), the Population Reference Bureau (PRB), and the Research Triangle Institute (RTI). Questions were asked about the nature and outcomes of these collaborative efforts, and about the respondents' views of the DDD project as a whole.

The bulk of the information on which the evaluation is based was provided by Westinghouse. One full morning was devoted to presentations by DDD staff, providing an overview of the project as well as detailed summaries of progress to date, major accomplishments, and problems encountered with each of the tasks comprising the project's scope of work. Additionally, individual discussions with DDD staff were conducted periodically throughout the course of the evaluation.

This evaluation relies heavily on analysis of project-related documents provided by Westinghouse and by AID. Team members spent a significant portion of time available examining project plans, country strategies, a variety of reports, and computer-related documentation.

The evaluation also included site visits to two LDC organizations that have received technical assistance from DDD staff. Dr. Foreit spent five days in Lima, Peru observing microcomputer training sessions and interviewing staff at the CNP. She also discussed DDD activities in Peru with local AID representatives. Ms. Enea assisted the evaluators by visiting the Sahel Institute in Bamako, Mali to assess DDD technical assistance to the organization.

The evaluators met frequently to outline an operational strategy for the evaluation, assign the division of labor among

themselves, discuss results of the personal interviews and document analyses, and formulate conclusions and recommendations. Sections of this report were drafted by individual team members and reviewed by others. The final report is a collective effort and represents a consensus of team members. It was reviewed by the project monitor prior to final editing and publication. A debriefing for AID was held August 23.

I.1.4 Evaluation Methodology

I.1.4.1 Sources and Types of Information. A portion of the information upon which this evaluation is based consists of subjective judgements about whether and how well the Westinghouse staff has completed the tasks called for in the contract. This information was provided by a number of people who have worked with DDD personnel, including AID officials, other PDD contractors, and representatives of LDC institutions. (A complete list of interviewees is contained in Appendix A.)

The majority of the evaluation derives from direct analysis of materials provided by the DDD staff (Appendix B). These include:

- a. country strategy statements
- b. the MCPDA package (Microcomputer Programs for Demographic Analysis) including diskettes and documentation
- c. the Data Bank Index and materials prepared by request from the Data Bank
- d. policy reviews developed by the project staff
- e. semiannual reports
- f. microcomputer technology transfer information
- g. analytic reports
- h. mailing lists
- i. information about other project activities
- j. country files
- k. trip reports
- l. descriptions of software prepared for the project.

I.1.4.2 Analytic Procedures. Interviews were conducted and materials were reviewed by one or more members of the evaluation team. Once all the relevant information was compiled, team members began lengthy discussions designed to identify strengths and weaknesses of project activities, and to provide answers to the questions elaborated in the evaluation scope of work. For each question, the team considered the quality of performance to date, whether the work had been carried out in a timely fashion, and what might be done to improve DDD performance in the future. Ultimately, conclusions and recommendations were arrived at.

I.1.5 Limitations

This evaluation suffers from two principal limitations. First, it was possible for the evaluation team to visit only one field site, Peru (see Appendix C) and only one team member made the trip. Given the critical importance of the work of DDD staff in the field, it would have been preferable for the team to have visited several field sites. The team did have access to additional information on field activities from Ms. Enea (see section I.1.3 and Appendices D and E); nonetheless, greater opportunity for the evaluators to observe the results of DDD activities in situ would probably have contributed to a more useful evaluation.

The other limitation, unavoidable in technical assistance projects, is that consequences may not be realized for several years after the activities which generated them. Accordingly, the assessment of the success of the project may be understated in this evaluation.

II. PROJECT BACKGROUND AND DESIGN

II.1 Evolution of the DDD Project

In September 1982 the Health Systems Division of the Westinghouse Electric Corporation signed a five-year contract (DPE-3000-C-002017-00) with AID to provide technical assistance to selected developing countries and to AID for " ..the analysis and dissemination of population and family planning information as well as related social and economic data...for use in AID-supported population activities." The DDD project is one component of an umbrella project which also involves activities carried out by the International Division of the U.S. Bureau of the Census and by the East-West Population Institute.

While the project began in November 1982, activities were minimal during the first year of operation. This delay was due primarily to problems encountered with the acquisition of staff. The Project Director and Deputy Director were not hired and in place until July 1983, and the project was not fully staffed (six professionals now reduced to five) until September of that year. The first technical assistance trip was not taken until mid-1983, and it was not until late 1983 that contacts with developing country institutions became a routine project activity.

In spite of this slow beginning, the DDD project has recorded an impressive number of accomplishments to date. Thirteen countries, plus the Sahel Institute, received technical assistance visits, with a total of 33 trips through May 1985. Comprehensive population and family planning data files have been developed; through March 1985 a total of 76 requests for special tabulations and basic information had been filled. Microcomputer systems have been installed in nine countries, and related training and software have been supplied. Finally, 18 policy briefs have been prepared, and several technical reports have been either drafted or outlined.

II.2 Project Objectives

The specific objectives of the Westinghouse contract are fourfold:

- 1) To provide technical support to population and statistics institutions in 10-15 LDCs for the analysis and dissemination of demographic and family planning data;
- 2) To transfer microcomputer technology to LDC institutions to improve their capability in processing and analyzing demographic and family planning data.

- 3) To develop and maintain computerized files on demographic, population policy, and family planning variables;
- 4) To prepare and disseminate population reports, policy briefs, and special tabulations and to respond to ad hoc requests from AID and LDC institutions.

The first two objectives are directed primarily to enabling host country personnel to produce the data on population they need to make informed policy decisions on family planning programs and a host of other social and economic issues. Microcomputers have become an important tool in improving the availability of data in numerous countries, including Burma, Honduras, Malawi, Nigeria, Somalia and Sudan.

The second two objectives are designed primarily to make population data available to AID, though data and briefs are also available to LDC personnel. (Appendix G provides details on the tasks to be performed under the contract.)

II.3 Project Design

This is a complex project, involving provision of technical assistance to institutions in 10-15 developing countries, creation and maintenance of several types of data files, response to ad hoc requests for raw data and analyses, preparation and dissemination of a variety of reports, installation of microcomputer systems and associated software, and all necessary follow-up work associated with these activities. Obviously, the project calls for a wide variety of skills and experience. Generally, Westinghouse has done an admirable job of satisfying these objectives (see Chapters III and IV). Nonetheless, questions can be raised regarding the advisability of incorporating such a diverse set of tasks and areas of expertise into a single project. These questions, of course, are directed to PDD rather than Westinghouse. The relevant considerations are the following:

o Is it efficient to have several contractors responsible for carrying out multipurpose projects in a variety of geographic regions, e.g., those which involve some microcomputer assistance, some policy analysis, some data collection and/or analysis, some dissemination of results other than internal reports, and so on?

o If greater specialization of projects is judged to produce better technical results, to be more costs efficient, or to be preferable from the point of view of management, is it feasible to expect contracting organizations to be able to put together the required specialized staffs? In other words, can single

projects be effectively devoted uniquely to policy analysis, information dissemination, microcomputer applications, training LDC professionals, data collection and analysis, or any of the other activities of concern to PDD?

o Alternatively, would it be preferable to design multipurpose projects that are focused on particular geographic areas, e.g., sub-Saharan Africa, Latin America, South Asia, or even smaller geopolitical units?

Such questions may be rhetorical given that PDD is already moving in the direction of greater substantive specialization of projects, e.g., the dissemination work to be conducted by PRB and the Demographic and Health Surveys being initiated by Westinghouse. While issues of project design clearly require further thought by PDD, specialization of one kind or another is probably preferable to multipurpose projects if adequate mechanisms for coordination among contractors are provided.

III. MANAGEMENT AND FUNDING

III.1 Project Management

III.1.1 Scope of Work

The scope of work included the following questions about the management of the DDD project.

o Are the number and qualifications of the staff adequate for the type of assistance being provided?

o Is sufficient staff time (professional and clerical) devoted to each component to enable the project to meet the terms of the contract? Is the allocation of staff resources consistent with the demand for technical assistance and micro-computer technology?

o Is the DDD/Westinghouse project coordinated with other PDD and Office of Population activities? How can coordination be improved?

o What are the implications for staff resources of the increased demand for technical assistance?

o Does Westinghouse meet its requirements for timely submission of trip reports, semi-annual reports, substantive correspondence, and other project documents?

III.1.2 Staff

The success of any technical assistance project depends largely on the skills offered by its staff and the way in which this expertise is allocated through managerial decisions. The Westinghouse project staff now consists of but five professional positions, which can be viewed as both a weakness and a strength. The relative smallness of this staff could be a problematic given the high demand for in-country technical assistance and the variety of tasks conducted in the home office. On the other hand, smallness can be beneficial in that it does not require a complex management structure and facilitates coordination of staff activities.

The Westinghouse staff is composed of the following personnel:

a. Dr. Richard B. Sturgis, Project Director (July 1983 - present). Dr. Sturgis is a sociologist/demographer with many years of experience in the field of population assistance.

- b. Dr. Alene H. Gelbard, Deputy Director (April 1983 - present) and Policy Analyst (January 1983 - March 1985). Dr. Gelbard has held population-related positions in the Philippines and in Brazil.
- c. Dr. Jorge del Pinal, demographer/systems analyst (April 1983 - present). Dr. del Pinal worked previously with the International Statistical Programs Center at the BuCen and with the Instituto de Nutricion de Centroamerica y Panama in Guatemala.
- d. Dr. Shea Rutstein, consultant demographer/systems analyst (February 1985 - present). Dr. Rutstein worked for several years with the World Fertility Survey in London, and also has considerable experience in developing countries.
- e. Mr. David Cantor, programmer/analyst (November 1982 - present). Mr. Cantor is a specialist in microcomputer applications and has worked previously as a population analyst for the Office of Technology Assessment, U.S. Congress.

Two previous staff members resigned in March 1985 to accept positions with a new Westinghouse project, the Demographic and Health Surveys. They are Dr. Jeremiah M. Sullivan, who served as Deputy Director from July 1983, and Ms. Anne R. Cross, a demographer with the project since September 1983.

Albeit assembled somewhat more slowly than anticipated, the staff is highly competent and effective. It offers a wide range of skills and training, including demographic data manipulation and analysis, microcomputer applications (hardware installation, software development and modification), and familiarity with the content of population and development policies. Comments from AID, other AID contractors, and the limited LDC contacts made by the evaluation team have been universally favorable.

Staff competence has been translated into an excellent record of project management. Staff have been used to their fullest advantage, meeting the differing linguistic and technical requirements of working in a variety of regions and countries. Moreover, the Project Director has shown ability to deal effectively with the coordination of a variety of technical tasks. DDD staff seem to know what one another are doing and to cooperate fully. With few exceptions, project activities are on schedule, and ahead of schedule in some instances.

III.1.3 Facilities and Services

The facilities available at the Westinghouse home office are more than adequate for conduct of the project. Office space is

sufficient and the computer facilities are excellent. Communication technology meets the needs of the project. In the area of services, secretarial and other support staff appear to be, while effective, not excessive.

There may be room for improvement with regard to two types of services that are supplied by other components of Westinghouse. First, there is evidence that DDD may have experienced problems in the expeditious procurement and shipping of micro-computer hardware. This problem is now being eliminated. Second, although the Westinghouse contract calls for monthly expenditure reports, they have not been submitted regularly to AID. These reports would be of considerable use to DDD management as well as to the AID project monitor.

III.1.4 Compliance with Project Schedules

III.1.4.1 Deadlines for Management Reports. AID requires the following reports to assist in charting project progress:

1. semi-annual progress reports
2. monthly expenditure reports
3. trip reports for all overseas travel (within 15 days of completion)

DDD management does not feel these reporting requirements are excessive and has established a satisfactory relationship with the AID project monitor in regards to their submission.

The assurance that various deadlines are met is a key responsibility of the Project Director. In general, the problem of tardiness is minimal. Progress reports have also been submitted on schedule. Two issues regarding timeliness can be raised. First, as seen in Table III.1.4 (Appendix H), of 32 trip reports for which data are available, 27 resulted in a late report. Trip reports are, on the average, almost two weeks late. (The mean elapsed time between end of trip and submission of report is 28 calendar days, or over twice as long as the contract requires.) Second, the late submission of financial reports should be rectified.

III.1.4.2 Project Activity Scheduling. Responses to ad hoc requests appear to be prepared without undue delay, and field activities seem to be on schedule. Only analytic reports called for in the contract are far behind schedule, though not without good reason given the heavy demand on staff time for other activities (see Chapter IV).

III.1.5 Coordination with Related Programs

III.1.5.1 AID's Expectations. According to an unwritten norm of PDD, its contractors ought to collaborate and communicate with one another as fully as possible. The DDD project shares a number of common interests and broad objectives with several other PDD contractors, principally TFG (Resources for Awareness of Population Impact or Development [RAPID II]), Integrated Population and Development Planning II (INPLAN) at RTI, and Columbia University's Development Law and Population Policy. In addition to sharing data, reports, and ideas, these contractors sometimes can be useful to one another by passing on information about conditions and opportunities in those countries in which they are pursuing complementary activities.

In addition to its responsibilities to the PDD, the DDD project is expected to work closely with the regional bureaus based in Washington, DC and with the AID missions overseas. Obviously, DDD must maintain a good relationship with both the regional bureaus and the missions if they are to work successfully in the field. Moreover, the Westinghouse contract calls specifically for DDD staff to provide these AID units with raw data, analyses and reports, upon request, based on the population and family planning information files and the population policy file.

III.1.5.2 Implementation. The degree of coordination with other institutions and programs is somewhat variable. Collaboration with other PDD contractors appears to be excellent, based on reports of the directors of those projects. Written materials - reports, analyses - are routinely exchanged. Similarly, there appear to be excellent relationships between DDD staff and mission officials. The one area of coordination that seems to be in need of improvement is with representatives of the AID Regional Bureaus in Washington, DC. Of the four officials the evaluation team spoke with, only two really understood what the DDD project was trying to accomplish. In particular, there was a lack of appreciation of the utility of the various data files maintained by DDD staff, and a general misunderstanding of the procedure for initiating ad hoc requests. This situation may result from the relatively frequent staff changes in the Regional Bureaus.

III.2 Project Funding

III.2.1 Scope of Work

The scope of work requested the following information on project funding:

o Is the current distribution of financial and staff resources among the project components adequate to meet the project and contract objectives?

o With the current financial constraints - due to increased demand for technical support - how should the workscope be modified and the resources be distributed during the remainder of the contract in order to meet the project and contract objectives?

III.2.2 Adequacy of Resources

Total direct costs under the project budget were estimated at \$2,381,275, with an additional \$594,014 designated for general and administrative expenses and fees for a total of \$2,975,289. No add-on funds are permitted although some line item flexibility within the budget is allowed with prior approval from AID.

Table III.2.2 (see Appendix H), provided to AID in January 1985, indicates that if the current rate of activities and spending is maintained, the project will have sustained a cost-overrun of \$418,984 by the end of the project. Total estimated expenditures will have been \$2,800,259 against a budgeted figure for direct costs of \$2,381,275. ^{1/} Given the contract stipulation that add-on funds are prohibited, these excess costs would have to be absorbed by Westinghouse.

The Project Director has proposed - and AID has concurred - that the project be shortened by up to six months to avoid excess spending. The Project Director has assured AID that all contract requirements will be satisfied during the four and a half year time span.

In light of developments since the project's inception, it is fair to say that the budget was inadequate from the start. Without knowing how widespread the demand would be, AID personnel

^{1/} General and administrative expenses and the fee are omitted from this calculation.

publicized the project widely. AID's promotion, plus a wide spontaneous interest in the services offered through the project, resulted in requests for assistance under the project far greater than expected at the outset.

If Westinghouse is able to produce all deliverables and activities called for in the contract - assuming that further contract amendments are not forthcoming - then one might conclude that the budget was indeed sufficient. However, the question of which additional activities might have been possible, given a more realistic budget, should not be ignored. Moreover, there is currently no certainty that the DDD staff will be able to provide adequate follow-up assistance to the countries and institutions with which they are now working. In short, though it appears that the budget allocated will be sufficient to satisfy the project scope of work, hindsight indicates that scope may have been unduly conservative.

In spite of its limited budget, DDD management and staff have been imaginative in stretching available funds as far as possible.

IV. PRINCIPAL PROJECT ACTIVITIES

IV.1 Technical Assistance and Microcomputer Transfer

IV.1.1 General Remarks

Most technical assistance supplied under this project has been designed to increase the availability of demographic and family planning data. This has frequently involved the transfer of microcomputer technology to strengthen the capability of LDC institutions to process and analyze data. In the scope of work, several issues were raised in regards to technical assistance which would apply equally to microcomputers and vice versa. Thus, except for technical questions related to maintenance of hardware and software packages, the remarks below apply equally to both and where appropriate, questions from the scope of work will be combined.

IV.1.2 Project Performance

How well is Westinghouse meeting the technical support components of the contract? Is Westinghouse adequately meeting this portion (microcomputers) of the contract?

IV.1.2.1 General Compliance. The contract had called for technical assistance to be provided to between 10 and 15 countries. To date, Westinghouse staff have explored the possibility of providing technical assistance to 13 countries directly and, through the Sahel Institute, indirectly to six additional countries. In all but one of these countries (Guatemala), significant technical assistance has been provided. Table IV.1.1 provides a summary of activities by country (see Appendix H).

In conjunction with technical assistance, the contract asked for DDD to explore the possibility of installing microcomputers in 10-15 countries. To date, the project has installed seven microcomputer systems in as many countries. Another eight installations are planned. Of all the microcomputer systems being transferred through the project to LDC institutions, Westinghouse has financed only seven. The remaining systems have been purchased through a variety of other sources (e.g., USAID missions, other PDD cooperating agencies and the World Bank).

IV.1.2.2 Country-Specific Activities

Latin America and Asia

Bolivia. Assistance has been provided to COBREH (Consultora Boliviana de Reproduccion Humana), a private family planning agency, to improve the organization's ability to analyze demographic and family planning data. To assist in this effort, a microcomputer system was provided to COBREH, along with training in the use of several computer packages (Survey Mate, SPSS, Personal Editor, and a word-processing package). A total of 11 people received training. (Technical details on Bolivia and the other countries where microcomputers have been installed to date are provided in Section IV.2).

Burma. DDD has collaborated closely with the Immigration and Manpower Department of the Census Office, providing assistance in processing and analyzing data from the 1984 Post Enumeration Check (PEC) of the 1983 Census. A microcomputer system has been installed and is now being used an average of 10 hours per day for entry of the PEC data. Preliminary work is under way on a report on the quality of the data, and additional reports on fertility and mortality estimates are planned. Several visits have been made by DDD staff and a member of the Census staff had also visited DDD offices for consultation.

Dominican Republic. DDD has been providing assistance to the Population Unit of the Ministry of Health and the Consejo Nacional de Poblacion y Familia (CONAPOFA), with the goal of strengthening their data processing and analysis capabilities. DDD has provided training in the use of microcomputers, using a computer provided by TFG. DDD will, in cooperation with INPLAN, supply an IBM AT microcomputer and conduct further training.

Guatemala. DDD has had discussions with APROFAM, a private family planning association, about the possibility of providing assistance with analysis of sub-national census data from 1981. Discussions included the possibility of installing software and providing training. However, the project stalled because Congress had cut off AID funding for Guatemala. [Since the evaluation was completed, the Congressional restrictions have been lifted and it is still possible that DDD's original strategy can be carried out.]

Honduras. DDD has participated in a consortium of organizations (including Family Health International and Management Services for Health) to assist the Ministry of Health to conduct and analyze a contraceptive prevalence survey. Westinghouse provided assistance on questionnaire design, data entry and processing, and also provided an evaluation of recent estimates

of infant mortality in Honduras. A draft report of the survey findings has been prepared.

Indonesia. The DDD Project Director made one trip to Indonesia to explore possible DDD activities. No concrete plans emerged, however, and it appears that there will be no further DDD involvement.

Peru. DDD has provided extensive assistance to the CNP of Peru. A microcomputer was installed at CNP and three workshops have been held to train CNP staff in demographic applications of microcomputers. The microcomputer installed was purchased with funds provided by the USAID Mission in Peru. Subsequent trips revealed extensive use by the staff, some of whom had, on their own, gone beyond the materials covered in the training session conducted by Westinghouse. One staff member has prepared a Spanish-language manual for Lotus 1-2-3. (Appendix D includes additional details.)

Turkey. DDD has provided assistance to the Institute of Population Studies at Hacettepe University in processing and analyzing a contraceptive prevalence survey conducted in 1983. A microcomputer was installed and training provided in both data entry and analysis. There was an immediate and large demand for the machine and subsequent visits revealed extensive use, even on nights and weekends. During a second visit DDD staff also provided assistance in developing a code book for the survey results and in writing a report of these results.

Africa

Cameroon. DDD, in collaboration with RAPID II and a computer consultant, is providing assistance to the Ministry of Planning (MOP) to develop baseline demographic information to be included in the next five-year development plan. As part of this effort, a microcomputer has been supplied and training provided. In addition, two MOP staff members have been trained at DDD headquarters in using the microcomputer to generate information on Cameroon's demographic characteristics and growth.

Malawi. DDD is providing assistance to the Ministry of Health in the processing and analysis of data from the 1984 Family Formation Survey, which includes information on contraceptive knowledge, attitudes and practice. This activity also involves collaboration with the National Statistics Office. Data from this survey will be processed and analyzed and a microcomputer system installed by DDD. The equipment to be shipped to Malawi is currently being tested in DDD's headquarters.

Nigeria. DDD is providing assistance to the Nigerian National Population Bureau for its 1980 National Demographic Survey. The survey, which gathered data from over 100,000 households, was never processed or analyzed. Its analysis will make possible the production of state level demographic estimates. Data tapes are now with DDD; National Population Bureau staff are expected to spend time at DDD headquarters to help with data analysis and preparation of reports.

Sahel Institute. Through the Sahel Institute, DDD is collaborating with officials from the eight Sahel countries (Burkina Faso, Cape Verde, Chad, The Gambia, Mali, Mauritania, Niger, and Senegal). DDD assistance is channeled through the demographic unit of the Sahel Institute and is aimed at strengthening the demographic and microcomputer capabilities of these eight countries. To date, two regional workshops have been held to train Sahelian demographers in demographic analysis using microcomputers, and several programmers have received further training at DDD's U.S. offices. Plans have been made to provide microcomputers to the six countries in the regions which do not have them.

Somalia. DDD has provided assistance in the analysis of the 1980 survey of population, working with the Central Statistical Department of the Ministry of National Planning. This survey has gathered information on the entire Somali population, including nomads. Again, a microcomputer and related training have been provided to the planning staff as part of the assistance package. DDD staff also assisted in the preparation of a USAID project paper for a Family Health Services Project for Somalia.

Sudan. DDD has provided a microcomputer and training to staff members both from the Statistics Office and from the Demographic and Social Research Center of the University of Khartoum. The microcomputer will be used to assist in the analysis of data from the 1983 census. These data, however, are not yet available. DDD plans several additional trips to provide further training and technical assistance.

IV.1.3 Impact

The scope of work asked: **What impact had this support in terms of strengthening institutional capabilities?**

In part, DDD's success results from its ability to cooperate well with local USAID missions and with other centrally funded projects, which in some cases have provided equipment or other assistance. The observation of one of the team members in Peru, corroborated by an interview with the USAID Population Officer from the Sudan and cables from population officers in Malawi,

Burma, and Somalia, was that it has made an important contribution to the data gathering and analysis abilities of host country institutions.

Specific examples of project success are as follows:

In Burma, the availability of DDD technical assistance has been largely responsible for the success to date of the Burmese effort to conduct and analyze the results of a post-census enumeration check.

In Peru, the NPC staff has made extensive use of both the equipment and training provided by DDD. Several publications have been produced as a direct result of the availability of the microcomputer, and these publications involved the use of a variety of computer programs provided by DDD.

In Nigeria, the 1980 National Demographic Survey represents the largest survey ever conducted in Nigeria - a survey which has gone unanalyzed for five years. Its analysis will provide the first state level estimate of demographic variables in Nigeria. The mere acquisition of these data, enabling their detailed analysis, was a remarkable achievement and should lead to a much improved understanding of Nigerian population structure and dynamics.

In the Sudan, DDD's plan to assist in the analysis of the 1983 census represents a major step forward in data availability for that country. A report from the USAID population officer in the Sudan indicated that in a recent conference crude birth and death rates from 1956 were still being used to estimate the Sudan's current rate of natural increase. At present, more recent data are not available for this country.

Each of these examples indicates that DDD assistance is responding to high priority needs, and that the assistance is succeeding in strengthening institutional capabilities in LDCs.

IV.1.4 Country Selection

While not addressed in the scope of work, the issue of selection of countries merits discussion. The request for proposal (RFP) contains an illustrative list of countries where the project could operate. In principle, the selection is then based on a set of criteria, including whether or not the country is an AID/POP priority country and whether it has a bilateral population program. These criteria are coupled with expressions of interest in the project from population officers or their proxies and requests from regional bureaus. Countries that request assistance and that satisfy to some degree the other

criteria constitute the pool from which sites for initial project visits are selected.

Overreliance on field interest can present problems. First, the population officer may be so overwhelmed with other, more pressing, responsibilities that he/she may not pay sufficient attention to the cable request. Second, many population officers do not have a clear understanding of the differences among and unique purposes of the variety of projects supported by PDD. They sometimes confuse one with another and simply lump them together in the category of "problems to be avoided." Third, a compelling reason for a much more analytic approach to country selection is that LLCs vary considerably in regard to the type of population assistance projects which would be of greatest use at a particular time. The specific intervention should be based on where a country is situated in the policy development process, the kinds of human and institutional resources available for collaborative work, the extent to which institutions can productively absorb additional population assistance funds, and the variety and quality of data available.

IV.1.5 Country Strategies

o Is there a coherent strategy for each country for assistance? Is the assistance provided by Westinghouse providing a priority demographic data need?

Country Strategy Papers have been prepared for each of the countries ^{2/} in which DDD has had any extensive involvement. They are short, typically one or two pages, the longest being four pages (Sahel Institute and Somalia). Only one strategy is in its second update (Sudan), six in their first update, and six are in their original version. It is only fair to note that three of the strategies that have not been updated were prepared in May 1985. On the other hand, this date suggests that activities were going on in these countries (and perhaps others) without any written strategy. The length of the strategy papers is consistent with AID directives. AID is not interested in wasting valuable staff time in preparing lengthy documents which cannot be easily updated and revised. It is probably fair to say that Westinghouse, like other cooperating agencies, views strategy statements as low priorities.

In addition to their uniform brevity, the DDD country strategies are organized into similar topics, typically including discussion of priority needs, planned activities, institutional

^{2/} Except Honduras, where DDD was part of a consortium carrying out a limited project.

affiliation, DDD staff and consultants, project timetable, and sources of funding. In a few cases, objectives are also identified.

In some cases, it is clear that the brief treatment provided in the DDD strategies cannot answer certain fundamental questions. For example:

o Why were some activities selected for support in lieu of others?

o Why was one or another institutional collaborator selected? If there were no other possibilities, that fact should be stated.

o What is the logic underlying the specified timetable of events?

In the end, though, there is something to be said for brevity, and the ultimate judge of the adequacy of these strategy statements is the AID project monitor. Furthermore, a direct review of the situation in Peru and the reactions of the USAID population officers from other countries all point to the conclusion that DDD is serving priority demographic needs in the various countries. In several countries, especially in Africa, DDD assistance will result in making available the only reliable and valid estimates of basic demographic variables.

IV.1.6 Quality and Duration of In-Country Assistance

Is the quality and duration of in-country assistance sufficient to meet the host country's needs?

The demand for in-country technical assistance is great and continues to increase. Most of it comes in the guise of training in the use of microcomputers. While this training is considered quite satisfactory by participants, the long-term impact and retention of data may be an issue in some cases. (See Appendices C, D, and E for specific data on training in Peru and through the Sahel Institute.)

As Table III.1.4 shows, DDD staff have traveled extensively in the past two-and-one-half years. Reports from USAID missions and other observations indicate that the quality of assistance is high. These missions, however, have made it clear that they want longer visits. Given the number of staff available to DDD and the number of countries in which they are operating, it is hard to imagine how the present DDD staff could travel more or for longer periods than they do now.

Another important aspect of follow-up activities is the capability of DDD staff to backstop the technical assistance field activities. One USAID mission expressed some concern about this matter. The mission reported trouble with the microcomputer provided by DDD, but felt that DDD was not able to respond for several weeks, apparently because those staff who could help were traveling elsewhere and thus unavailable when needed. The DDD staff is extremely small, considering the number of countries in which they are working. Given this fact, it is quite likely that similar situations will continue to arise.

IV.1.7 Future Level of Effort

Should the assistance activities be expanded, curtailed, or remain at the current level during the remainder of the contract?

Given the limited size of the DDD staff, it would not be possible for Westinghouse to expand its activities during the remainder of the present contract. DDD has already provided technical assistance to more than the minimum number of countries called for in the contract. Predictably, however, demand for increased technical assistance will continue. AID should consider, either in the remaining time of this contract or for a follow-on project, a substantial increase in the capacity of Westinghouse or another contractor to provide more extensive technical assistance. It would require a commitment of considerably greater funding to assemble a larger staff.

IV.1.8 Follow-up of Assistance Provided by Other Contractors

Is there adequate follow-up of additional assistance from other PDD projects?

The Westinghouse staff appears to have done well. DDD has worked effectively with RAPID II and with INPLAN in several countries. Activities of DDD and the other contractors have been coordinated, and the groups appear to work very well together, in spite of the built-in possibility of competition among the contractors. This has not become a problem because it is clear that there is more than enough work for everyone (see Section III.1.5).

IV.2 Microcomputer Applications - Technical Issues

IV.2.1 Types of Hardware

Are the microcomputer hardware and software packages being

transferred to LDC institutions appropriate for their intended task? What other packages might be more appropriate?

The DDD staff has done an excellent job of transferring and installing computer hardware. The systems installed are well-configured, carefully planned and adequately tested. The Westinghouse staff has achieved the state of the art in this business.

A variety of configurations have been installed, depending on local needs and budget constraints. All have been IBM PCs or XT's. As prices continue to drop, the trend has been to buy higher-capacity machines with more memory. Only one of the first groups machines had a 20 megabyte (MB) disk. In the second group of machines, there will be two IBM-AT's; all hard disks will have 20 MB capacity, and two systems will include Bernoulli Boxes (see Tables IV.2.1-A and IV.2.1-B in Appendix H).

DDD staff have been directly involved in all aspects of computer installation, and considerable effort has been devoted to keeping costs down. After identifying the major appropriate configuration, the staff person puts together the purchase order, which often includes components from several manufacturers and more than one vendor. The system is assembled at Westinghouse; board and disk drives are installed, and switches and communications ports reset. If the system includes a hard disk, it is formatted and partitioned. Software is installed on the hard disk along with an autoexec file to bring up menus of available programs. The system is tested for up to several months before it is shipped. Export licenses are obtained for all computer systems sent out of the country; the normal process requires four to five weeks, although emergency requests are honored. At the beginning, DDD staff even repacked the machines for shipping; now the work is turned over to the shipping company. Similarly, Westinghouse's accounting department has assumed some of the paperwork, although much of the work is still handled by DDD staff.

The costs of the system and its shipping represents less than 10 percent of the \$75,000 estimated to be the average direct costs per country of providing technical assistance (a cost which includes the microcomputer). The microcomputer costs include several person-weeks needed to prepare a system including configuration, ordering, assembly, burn-in, and paperwork.

DDD has assumed responsibility for underwriting repairs and/or replacement in two of the three equipment failures and will continue to try to do so for the remainder of the project. The extent to which this will be possible will depend on budget constraints. A larger question still remains: What will happen after project termination? Given the rapid pace of technological

advances and price reductions, it may be more cost-efficient to replace machines when they break down than to try to repair them.

IV.2.2 Maintenance

Is there sufficient training on and support of the equipment transferred to LDC institutions to ensure that the technology will continue to be used?

There is a major problem with regard to maintenance of equipment that is largely beyond the control of Westinghouse staff. Theoretically, maintenance should be undertaken by the host country institution which accepts the computer. To date, however, these institutions have not formally acknowledged that maintenance is their responsibility. None of the systems is covered by either a maintenance contract or by a statement of agreement regarding maintenance. Transfer of ownership was effected by letters of donation and receipt in one case (Peru: USAID funding); receipts were signed by the host institutions in two other cases (Cameroon, Bolivia). An individual export license was obtained for each system installed; it lists the host institution as the "Consignee in country of ultimate destination." That the transfer was made by donation is not stated explicitly, but must be inferred from the response, "No purchaser," to the item, "Purchaser in foreign country."

A general statement of agreement for installation and maintenance has been prepared in draft form and has undergone at least three revisions. DDD is awaiting AID feedback before implementing it. Thus, receipt has been formally acknowledged in writing by only three of the seven host institutions where systems have been installed, legal ownership formally transferred of only one system, and responsibility for maintenance negotiated in none of the transfers.

The Westinghouse accounting department has designed a standard receipt form to be signed by the host institution when the machine arrives. Although the primary intent of the receipt is for auditing purposes, it does establish transfer of the system and as such should be kept in the DDD files as well. Statements of agreement will be implemented in future installations. In the case of the Sahel countries, the Sahel Institute circulated a questionnaire to the countries due to receive microcomputers and announced that each country must meet at least the minimum requirements before it can receive a system.

Equipment failure has thus far been fairly rare and usually relatively minor, but three of the seven systems installed thus

far have required some repair. Most problems were encountered and corrected prior to installation.

o Somalia. One floppy disk drive was replaced. The original UPS appears to have a problem and has been sent to Kenya for repairs. INPLAN will upgrade the system and provide a new uninterruptible power supply (UPS). If possible, the old UPS will be retrieved and returned to Westinghouse.

o Turkey. The hard disk purchased by Rapid II has failed. It will be replaced by DDD. Rapid II will repair the original hard disk if possible and lend it to DDD for the life of the project.

o Bolivia. The power supply failed at time of installation, and a new power supply was subsequently installed at DDD expense.

o Peru. There may be a problem with the keyboard, which requires further testing.

IV.2.3 Software

Are the most appropriate demographic programs being downloaded to the computer? What can be done to maximize the user-friendliness of these programs, and can it be done without extensive programming?

The total software package available through Westinghouse DDD is quite impressive. Westinghouse DDD has transferred several software packages along with the microcomputers they have installed in various countries, as follows.

Data Entry. Survey Mate, by Henry Elkins, allows for easy data entry.

Statistical Analysis. SPSS/PC provides a variety of routines that can be used for data editing, preliminary descriptive results, and more elaborate multivariate socio-economic and demographic analysis.

Demographic Analysis. BuGen's Computer Programs for Demographic Analysis (MCPDA) contains an extensive collection of sophisticated programs for more elaborate demographic analyses.

Spreadsheets. Lotus 1-2-3 allows some interesting demographic applications such as the calculations of rates and life tables.

Wordprocessing. Volkswriter and WordStar.

Editor. Personal Editor allow investigators to assemble their findings into reports in an efficient manner.

With the exception of the demographic analysis package, these packages all came ready to use on microcomputers. For the demographic analysis programs, DDD staff downloaded BuCen's mainframe version of MCPDA, copying all the BuCen's routines, with two exceptions. Routines in the original BuCen's package designed to produce indirect estimates of fertility and mortality using Brass techniques have been replaced with programs incorporating recent modifications to these techniques suggested by Feeney, Sullivan, and Trussell. At the present time, MCPDA operating under the DOS operating system is provided on six diskettes, along with an additional diskette containing test data. The test data are identical to those presented in the original BuCen manual.

DDD staff also prepared a manual which explains how the programs can be loaded onto a microcomputer and how they can be run. The manual also contains a description of the input data required for each program. These descriptions are taken from the comment statements included in the original FORTRAN programs prepared by the BuCen. An appendix to the manual provides instructions on how program results can be printed using a variety of printers.

All the software designed explicitly for use on microcomputers is relatively easy to use, and is quite appropriate for demographic analysis on microcomputers in LDC settings.

The BuCen program, however, is not user-friendly and understanding its manual may present real problems for persons without extensive experience with computers. One problem is that the manual for the BuCen program on demographic analysis, although accurate and complete, is far from user-friendly. While adequate for persons with computer experience, it may be more difficult for LDC personnel with less familiarity with computer techniques. 3/

IV.3 Population Data Files

IV.3.1 Project Performance

3/ Team member McCarthy was able to run these programs without excessive difficulty, but he believes that inexperienced persons might find them very complicated.

DDD has assembled a series of data files containing family planning, demographic and socioeconomic data, as well as data on population policy. These data have been assembled from a number of sources, including the United Nations, the BuCen, IPPF, PRB, and The Population Council.

The data have been organized into four files: family planning data; demographic data bases (United Nations and BuCen); and a population policy data base compiled by the DDD staff. Each of these is described in more detail below.

IV.3.1.1 Family Planning Data File. This file contains recent contraceptive information for 60 countries, including prevalence rates by method. Also included are projected numbers of contraceptive users to the year 2000 for selected countries, and World Fertility Survey tables, when available, on contraceptive use specified by demographic and social variables.

Data in this file have been assembled from a variety of sources, including Contraceptive Prevalence Surveys, World Fertility Surveys, International Planned Parenthood Federation (IPPF), The Population Council, PRB, and AID.

IV.3.1.2 Demographic Data Bases - United Nations. This file contains three sub-files, each containing a data base maintained by the United Nations Department of International Economic and Social Affairs. The first is a file of demographic indicators for approximately 200 countries. These indicators are also aggregated for the major regions of the world. Estimates of these indicators are provided for five-year periods from 1950 to 2025. The second sub-file contains age-sex structures for the same group of countries from 1950 to 2025, also at five-year intervals. Projections included in this sub-file are the U.N. low, medium, and high variants for each country. The third U.N. sub-file contains data from the 1978 U.N. Demographic Yearbook, which included a special historical supplement. This supplement presents time-series data for a variety of demographic indicators.

IV.3.1.3 Demographic Data Bases - BuCen. This file contains two sub-files with data bases developed by the BuCen's Center for International Research. The larger of these is the International Data Base which contains statistical tables of demographic, economic, and social data from all countries of the world. These data pertain to the most recent year available and, when possible, include estimates and projections to the year 2050. These data have been assembled by the BuCen from a variety of national and international agencies. A sub-set of

this larger file, the Women in Development Data Base, is included as the second BuCen sub-file. This sub-set is included separately because it is useful independently of the demographic data. The BuCen updates these files regularly, and DDD has access to the most recent versions on the U.S. Commerce Department's mainframe computer.

IV.3.1.4 Population Policy Data Base. This data base has been assembled by Westinghouse DDD from a variety of sources, including the United Nations, The Population Council, and IPPF publications, as well as from Maxwell Stamper's 1977 monograph on Population and Planning in Developing Countries. It includes information on governmental perceptions of the desirability of a country's population growth rates, fertility rate, mortality rate, internal and international migration rates, spatial distribution, and policies implemented to influence these rates, such as policies on contraception and abortion. This data base also includes special sub-files containing the policy briefs that Westinghouse DDD has prepared for a number of countries. This data base has been adapted for microcomputer use, and is available on DDD microcomputers in the form of SPSS files.

To provide complete information on each of these four main data bases, Westinghouse DDD has prepared an index that contains complete lists of all the variables in each data base, along with sample questions which might be answered with each data set and instructions on how to prepare a request. The Index, with appendices, runs approximately 80 pages, and is distributed in a loose-leaf format to facilitate including revisions as they become available. Copies of the Index have been made available to several AID/Washington offices, including the Office of Population and the Regional Bureaus.

IV.3.2 Organizational and Use of Files

How much effort is spent maintaining the files and are they worth the investment? Are the various data files well organized and maintained? Are the files designed so that it is easy to retrieve needed information? Does the Index adequately describe the files? What can be done to improve the awareness and use of these files by AID, AID contractors, and LDC institutions?

Considerable effort by DDD staff was required to establish the data files in their present form, but less time is now required to maintain them. The files are updated periodically, but it does not appear that these revisions are time-consuming.

The files are almost exclusively used by DDD staff. They are well-maintained and it is easy for the staff to retrieve

information. The files, however, are available through three different sources, all organized differently. Some are on the AID computer, some are on the Commerce Department computer, and some are on microcomputers at Westinghouse. A particular problem exists in regard to the AID computer center, where inadequate facilities and lack of full-time personnel are serious constraints. This solution presents no problem for the highly experienced DDD staff, but it would create significant problems for a more general audience or another contractor.

Some 76 requests for basic information and special tabulations have been processed (as of March 1985), mostly from AID personnel. While those who have used the files have found them most valuable, knowledge of their content and potential uses is far from universal, particularly among the regional bureaus. The contract called for Westinghouse to prepare an index information packet including a copy of the file index, to be mailed to selected organizations and individuals. DDD recently sent out a small brochure describing the data bases to over 300 potential users in the developing world, including all USAID missions, to determine which ones were interested in receiving the packet. A sizeable number of responses were generated. While some requested the index, many others requested specific information. It was not uncommon for a respondent to request "all variables" for "all countries." This would take some time to fill and would not be likely to produce useful information for the requestor. In short, the responses provided strong evidence of the kinds of problems which would result if DDD attempted to advertise its data base services widely.

All outside requests for data are currently relayed through the project monitor. Some offices in AID, however, appear to be interested in gaining direct access to the files.

The system, at the present level of requests, seems to work well. If the brochure or any similar attempt to generate additional requests bear fruit, however, the current system would no longer work. Either additional staff would have to be added to service the requests or, as some people in AID have suggested, requestors could extract the information themselves. This second option could only work if the files were made more user-friendly, and this too would involve added staff time. A useful comparison could be made with another AID-supported data base, the Economic and Social Data Base. That system is quite user-friendly and can be easily used by a general audience. That data base, however, has four full-time staff members working to maintain it.

IV.3.3 Responsiveness of DDD to Requests for Information

How responsive is Westinghouse to ad hoc requests made by AID and LDC institutions?

DDD has been very responsive to AID requests and has been able, in most cases, to produce results very quickly. The number of requests made now approaches 100. It is important to note that DDD is, in fact, operating more than just a data base. Although many of the requests are straightforward and involve simply retrieving variables from the files, some are much more involved and, in fact, are small (and in some cases not so small) research projects. For example, one request asked for an answer to the following question: "What would be the life expectancy at birth in sub-Saharan Africa given infant and child mortality rates equivalent to the U.S., MDCs [More Developed Countries], Asia, and Latin America?" An adequate answer could easily constitute a Ph.D dissertation. Another request asked for an analysis of the effects of a 50 percent reduction in infant mortality on health, food, and education costs in 10 large developing countries to the year 2000. The answer to that request took 10 person-days of effort. Another request involved providing an answer to the question of what percentage increase in contraceptive use would be necessary to maintain current fertility if breastfeeding in Egypt were reduced to three months. Responding to this request took two person-days. Questions from LDCs have been as, or more, complicated than the three AID inquiries mentioned above. In short, at this point, it is not clear whether AID wants DDD simply to maintain a data base or, alternatively to provide a demographic research service. The result of this decision has important and obvious implications for contractor staffing.

IV.4 Population Reports and Policy Reviews 4/

IV.4.1 Scope of Work

o How well is Westinghouse meeting this component of the contract? Are sufficient staff resources being devoted to this component? If not, can the staff resources be increased without jeopardizing other portions of the contract? Should the number of outputs under the component be reduced in view of the greater than anticipated demand for technical support activities?

o How central are the reports and policy briefs to the objectives of the project? How appropriate are the report topics to the project objectives?

4/ AID and Westinghouse agreed that Policy Reviews could be used to fulfill the Policy Briefs requirement of the Contract (see Section IV.4.3).

o Is the format of the population policy reviews and their dissemination adequate? How can their value and use be maximized?

IV.4.2 Population Reports

The Westinghouse contract calls for preparation of eight population and family planning reports (one to two per year) on topics jointly selected by the contractor and the AID project monitor. As of May 1985 five such reports had been discussed (though not fully agreed upon):

1. Infant and Childhood Mortality in Sub-Saharan Africa. This report was to be prepared by Jerry Sullivan, Shea Rutstein, and other DDD staff. To date, a number of relevant tables have been generated, and approximately five pages of text have been written. Although the completed report was expected by November 1, 1985, it is clear that the work is far behind schedule.
2. Microcomputers in Development: Demographic Uses. Jorge del Pinal, with other contributors, is proposed as author. This report has been outlined completely, and 21 pages have been written. As planned, the final version would be ready for distribution by October 1, 1985. This work is also behind schedule.
3. Natural Family Planning - Periodic Abstinence in Developing Countries: Update and Policy Options. The authors of this report are Nancy Williamson, Sham Thapa, Meg McCan, and Carol Herman. It is now in its third complete draft, but it is unclear when a final version will be available. This report reflects very little work on the part of DDD staff.
4. Population and Planning: Why and How to Use Population Information In Planning. This work was supposed to be a joint effort involving Scott Moreland of RTI and various DDD staff members. As of mid-summer 1985, not even an outline had been prepared.
5. Regional Infant and Child Mortality Levels: Patterns and Differentials for 38 WFS [World Fertility Survey] Countries. Proposed authors are Shea Rutstein and other DDD staff. Although no outline exists, numerous analytic tables have been generated. Since this report had not been approved by the project monitor, no proposed schedule for preparation is available.

Several additional reports have been suggested, but they have yet to be outlined.

Clearly, Westinghouse is far behind schedule in the area of analytic report preparation. Given the heavy demand for alternative uses of staff time, the Project Director and AID should give serious consideration to evaluating and redirecting the reports and integrating them with the TA. If any are to be retained, the order of priority should be the following:

- o Report No. 3: it is nearly finished and of little cost to the DDD program.
- o Report No. 2: the use of microcomputers for development planning is an increasingly popular topic, of interest to social scientists in both more developed and less developed countries.
- o Report No. 4: Although several useful books have been written on the topic of population and development, a truly innovative text would be in demand. But, first, an outline must be drafted and discussed.

In short, most of the money originally devoted to these reports could usefully be reprogrammed to cover more directly relevant technical assistance activities or to cover costs of producing documents - training material/documentation - that are central to the TA activities.

IV.4.3 Policy Briefs/Reviews

The contract had called for preparation of eight policy briefs on a variety of topics related to population policy. It had also specified that Westinghouse would maintain a country-specific population policy file of policy reviews that included current policy positions and official statements. Westinghouse did little in preparing the required policy briefs. It did, however, develop and maintain the policy reviews. Because of limited project resources, both AID and Westinghouse have agreed to accept the policy reviews as the briefs. Each review contains basic demographic, social, and economic data, statements about population policy by a country's government and/or other observers, population-related legislation, and descriptions of the activities of public and private organizations with population activities. Each review contains a bibliography of sources consulted. Provisions exist for periodic updating.

In contrast to the eight policy briefs called for in the contract, reviews had been completed for 17 countries as of May 1985, including Burkina Faso, Cameroon, Cape Verde, Chad, The Gambia, Lesotho, Malawi, Mali, Mauritania, Niger, Senegal, Somalia, Sudan, Burma, India, Pakistan, and Turkey. Additionally, reviews have been drafted for Egypt, Kenya, Liberia,

Nigeria, and Peru. Reviews are also being prepared for all remaining African countries and for Brazil. Thus, the contract requirements have been more than satisfied.

These reviews are intended to provide a single, comprehensive source of population-related information on selected LDCs. Over 6,400 reviews had been requested as of June 6, 1985, and requests have been received for policy reviews of 75 additional countries not already on the request form that had been circulated, including Egypt (10 requests), Kenya and Nigeria (nine requests), Thailand (eight requests), and Indonesia and the Philippines (six requests each). Westinghouse has sent Policy Review order forms to nearly 600 individuals and institutions. The eventual demand is estimated to be approximately 225 orders for each Policy Review, but this estimate may be over-optimistic.

Although DDD had plans to produce an additional 12 Policy Reviews during each of the remaining years of the contract, AID has judged that this task has already been fulfilled satisfactorily. The decision as to whether to continue producing these documents should be based on the cost of doing so, the demand, and alternative activities (e.g., technical assistance) that might constitute a better use of DDD staff time. This is a matter that should be discussed by the project monitor and the DDD Project Director.

IV.4.4 Other Dissemination Activities

In addition to dissemination of population data file information and Policy Reviews, the contract calls for dissemination of projects through seminars conducted either in developing countries or in Washington, D.C. It is reasonable to expect that most or all of these seminars will occur toward the end of the project.

In addition, the contract specifies that Westinghouse disseminate two existing publications per year in the interest of improved understanding of population and development relationships by LDC policymakers, planners, and journalists. This activity has yet to begin.

V. RECOMMENDATIONS

V.1 Management and Funding

V.1.1 Management

- o Trip reports should be submitted on time.
- o Financial reports should be submitted more regularly, particularly as the contract period nears its end.
- o Additional staff, carefully selected according to the tasks that remain to be completed, should be hired as allowed by the budget.

V.1.2 Funding

- o Remaining funds should be used judiciously. Highest priority should be given to technical assistance and microcomputer applications.

V.2 Principal Activities

V.2.1 Technical Assistance

- o DDD management should continue to assure adequate backstopping while key personnel are on travel status. If requests for information or other assistance are made, a response should be provided without delay.

- o No activities should be initiated in additional countries unless endorsed by the project monitor. In addition, AID should help screen requests for additional assistance in current DDD countries. These recommendations are based on the belief that, with some possible exceptions, new efforts would jeopardize successful completion of work already underway.

V.2.2 Microcomputer Applications

- o AID should respond to DDD's proposal on how to deal with maintenance problems. The proposal as drafted is sound: specifically that regardless of funding source of the hardware, a statement of agreement should be prepared and signed by both parties (i.e., donor and recipient) at the time of transfer of the microcomputer system, and letters of donation and receipt should be signed at the time of installation (retroactively for those already installed).

- o A professional electrician should continue to be on hand whenever a new system is installed to check for grounding, current levels, and other power requirements.
- o The host institution should designate one person (and a back-up if possible) responsible for the computer system. This person should receive extra instruction in routine maintenance and repair. This person should also maintain a sign-up sheet or other daily log of computer use, copies of which should be forwarded to DDD at regular intervals. Computer access and priorities should be determined locally, by the host institution.
- o Minimum documentation, including lesson plans (outline of work to be covered), exercises, and an overview of each software package installed should be distributed at the outset of training to all participants, with reference copies on file at the computer site. This documentation should be written in the language of instruction--currently either French, Spanish, or English. Arabic, and/or Portuguese versions will become necessary only if and when instruction is offered in these languages.
- o Standardized post-workshop evaluation procedures should be instituted, and where possible, tests of retention (e.g., prior to refresher courses for repeat trainees) should be implemented.
- o A major effort should be made to prepare a user-friendly manual for the BuCen computer programs in demographic analysis (e.g., more friendly prompts should be built into these programs). Its issuance could be coordinated with a series of tutorials on the machine. This manual could be substituted for one or more of the analytic reports to be prepared by DDD. To be truly effective, it should be produced not only in English, but also in French and Spanish.
- o Country Strategy Papers should be reviewed to establish whether they contain critical information about selection of activities, institutional collaboration and the time table of events. They should also be updated periodically.

V.2.3 Population Data Files

- o This service should be maintained for AID/Washington only. Any plan to promote use by USAID missions should be held in abeyance, perhaps awaiting a follow-on project.
- o Neither DDD nor AID should engage in extensive promotion to increase use of the files.

- o The practice of channeling requests through the AID project monitor should be continued.

- o The use of modern computer bulletin boards to transfer results of data file requests to AID personnel should be continued.

- o Communication regarding the data files should be improved, particularly between DDD and AID's regional bureaus.

- o If AID decides that it wants to generate greater use of the data files, it must provide increased financial support for this purpose to Westinghouse or to a subsequent contractor.

- o It should be recognized by all potential users that this is a data base, not a research service. DDD should provide basic data, not analyses of those data. This restriction would make additional time available for some senior DDD staff to do other high priority work.

V.2.4 Population Reports and Policy Briefs

- o Two reports--those on natural family planning and on microcomputer applications--should be finished, and perhaps in addition the report on development planning. The remainder should be abandoned or substantially redefined, with the additional staff time devoted to technical assistance, the data files, and preparation of multi-language training materials. The latter task should be given high priority.

- o Consider the policy briefs (reviews) task as completed. The contract has been satisfied in this regard.

- o The contract provision for the seminars and annual dissemination of two existing documents should be implemented.

V.3 Follow-on Project

- o In a follow-on project, expanded emphasis should be given to technical assistance, microcomputer applications, and maintenance of the data files. AID should recognize that the demand for these services is likely to be considerable. In particular, the need for technical assistance will expand as computer installations are made in additional countries with less sophisticated institutions. These installations will require considerable training, maintenance, and follow-up. The expansion of technical assistance, microcomputer applications,

and data file maintenance should be coupled with elimination of population reports and policy briefs.

o AID should establish a clearinghouse for microcomputer transfer and documentation. This clearinghouse would provide information about which types of systems have been installed in which countries, which problems have been encountered, and how they were resolved. Moreover, the clearinghouse could provide documentation in various languages for the major software system. The focus of clearinghouse efforts would be on both installation and maintenance. AID must develop an explicit policy regarding long- and short-run maintenance of the systems its contractors install. With the rapid pace of technological advances and price reductions, together with the high cost of technical assistance, the option of replacing machines when they break down can not be ignored.

o In the longer term, perhaps in the context of a follow-on project, AID should consider adapting other computer programs for use on microcomputers. The most important set of programs will likely be those developed by the National Academy of Sciences and included in the United Nations' Manual X. It may even be the case that prior to a follow-on project, these programs will have been adapted for microcomputer use by some other group. If so, project staff should consider adding them to the list of software distributed.

o AID must define the use and limitations of the data base. If this system is to be made more user-friendly, the necessary financial support must be provided. Moreover, any expansion of the data base to be a research service will require increased funding.

o AID should develop a more rational strategy for investing its technical assistance resources. There should be greater specialization of projects based upon a clearly defined division of labor. Contractors should be asked to do what they are best suited for, not to do a little bit of everything. In this respect, AID can learn from the strengths and weaknesses of the DDD project.

APPENDIX A
LIST OF CONTACTS

APPENDIX A

List of Contacts

<u>Name</u>	
Bouvier, Leon	Population Reference Bureau
Bradshaw, Lois	USAID Mission, Sudan
Burdick, John	Regional Coordinator, Office of Population, AID
Cantor, David	Westinghouse Systems
Carbajal, Carlos	Consejo Nacional de Poblacion, Peru
Cole, Henry	The Futures Group
Cook, Gary	Near East Bureau, AID
Cromer, Charlotte	Regional Coordinator, Office of Population, AID
Crowley, John	Policy Development Division, Office of Population, AID
Danart, Arthur	USAID Mission, Peru
Del Pinal, Jorge	Westinghouse Systems
Franke, Martil	Consejo Nacional de Poblacion, Peru
Garcia, Julia	Consejo Nacional de Poblacion, Peru
Gelbard, Alene	Westinghouse Systems
Gilbert, Gladys	Africa Bureau, AID
Gillespie, Duff	Deputy Director, Office of Population, AID
Gillespie, John	Consejo Nacional de Poblacion, Peru
Herrera, Juan	Consejo Nacional de Poblacion, Peru
Kocher, James	Research Triangle Institute
LaRosa, Joan	USAID Mission, Peru

Leservic, Bruno	Consejo Nacional de Poblacion, Peru
Li, Dina	Consejo Nacional de Poblacion, Peru
Maguire, Elizabeth	Policy Development Division, Office of Population, AID
Mamlouk, Maria	Latin America Bureau, AID
Middleburg, Maurice	The Futures Group
Moscoso, Susana	Consejo Nacional de Poblacion, Peru
Mostayo, Patricia	Consejo Nacional de Poblacion, Peru
Oot, David	Asia Bureau, AID
Parker, Norma	USAID Mission, Peru
Rutstein, Shea	Westinghouse Systems
Seltzer, Judith	Policy Development Division, Office of Population, AID
Sobrevilla, Luis	Consejo Nacional de Poblacion, Peru
Sturgis, Richard	Westinghouse Systems
Sullivan, Jeremiah	Westinghouse Systems
Vallenas, Sandra	Consejo nacional de Poblacion, Peru
Yamashita, Ken	The Futures Group

APPENDIX B
MATERIALS REVIEWED

APPENDIX B

Materials Reviewed

Peru

- * MINISTERIAL RESOLUTION #0250-84-SA/DVM (21 SEPT 1984), MOH.
(Plan to develop a national health information system)
- * EXTENSION OF INTEGRATED PRIMARY HEALTH - Loan No. 527-U-072,
Project No. 527-0219, 31 March 1985. USAID/Lima

Consejo Nacional de Poblacion

- * Registro General de Diskettes
- * Horario de Trabajo en la Microcomputadora (daily log/
sign-up)
- * Directiva (Norms for using the microcomputer)
- * Peru: Guia Demografica y Socio-Economica (wall chart)
- * Propuesta Metodologica para Diagnosticos Socio-
Demograficos (monograph)
- * Evaluacion de los Servicios de Salud Materno Infantil y
Planificacion Familiar en Cinco Regiones de Salud
(book)
- * Publicacion seriada del Centro de Documentacion
(bibliography)
- * Algunas instrucciones para graficar en Lotus 1-2-3
IBM-PC (mimeo)
- * Notas para el uso de la computadora IBM-XT (class
notes)

DDD

- * TRIP REPORTS
- * PROGRESS REPORTS
- * TRAINING MATERIALS: SAHEL INSTITUTE (French, English)
SUDAN (English)
- * DDDSYS-P system, computer program (in French)
- * Export licenses, purchase orders, shipping orders, letters

of receipt

- * Statement of agreement (microcomputer installation): drafts
1,3
- * INDEX (data base)
- * OPERATING INSTRUCTIONS (DDDSYS)
- * CONTRACT
- * DDD-MCPDA-MS-DDS version of computer programs

APPENDIX C
PERU CASE STUDY

APPENDIX C

Peru Case Study

I. Historical Precis

A. National Population Council

The groundwork for DDD (and RAPID II) involvement in Peru was laid during a site visit to Lima January 31 - February 8, 1984 by Harry Cross and Richard Bilsborrow, members of the Rapid II team. After discussions with USAID/Lima and the Peruvian National Population Council (CNP), the team recommended that the DDD project install a microcomputer facility at the CNP and train local staff in microcomputer analysis. RAPID II would follow the installation and initial training and introduce models on family planning and targeting. The Mission would provide bilateral funds for local program expenditures, including hardware and software, and the centrally funded projects (DDD, Rapid II) would cover technical assistance costs.

Once approval for DDD involvement with the CNP was established by USAID/Lima and AID/W, the system was configured. DDD did not visit Peru nor negotiate directly with the CNP during the configuration stage; instead discussions were carried out by telephone between DDD and AID/W, and by telephone and cable traffic between AID/W and USAID/Lima. Submission of the final purchase order by USAID/Lima was delayed by uncertainty over continued AID funding. The system included an IBM PC-XT with 512K RAM, one floppy DS/DD disk drive, and a 10-MB fixed disk and a dot-matrix printer, as well as extensive software.

The order for the microcomputer system was placed by DDD on behalf of USAID/Lima with a Baltimore distributor on August 21, 1984, and the export license application filed on October 2, 1984. DDD tested the equipment and software for a little over one month (the keyboard proved defective and was replaced).

Jorge del Pinal of DDD personally delivered the system to Lima on November 3, 1984, bringing it as accompanied baggage. Installation and testing at the CNP were completed on November 8; nine days of hands-on training followed immediately thereafter.

Jorge del Pinal returned to Lima on January 20, 1985, for a one-week follow-up training course, and again on June 10 for a final two-week training course. Ken Yamashita of RAPID II gave a two-week training course May 6-17, 1985. A 10-hour mini-course in dBASE III was given May 27-31, 1985, by a local consultant to the Communications Division, financed by IDRC.

B. Ministry of Health

Although the RAPID II trip report did not identify the Ministry of Health as another focus of centrally-funded technical assistance activities, there was considerable interest on the part of USAID/Lima and the Westinghouse technical assistance team to the MOH that DDD participate in a proposed management information system (MIS) for the MOH. DDD is providing some computer assistance to this project.

Jorge del Pinal spent two days during his November, 1984, trip to Lima with the Westinghouse TA team and the MOH, discussing the scope and implementation of the MIS. He also developed a preliminary configuration for a microcomputer for the MOH, which would be purchased by USAID/Lima with bilateral funds. Del Pinal again met with the Westinghouse team during his January, 1985, visit to Lima. The purchase order for the microcomputer was delivered to Westinghouse in early June, 1985; dates for installation and training have not yet been set.

II. Description and Impact of Technical Assistance-CNP

A. Installation and Maintenance of the Microcomputer Facility

The microcomputer was personally delivered and installed at the CNP by Jorge del Pinal, of the DDD staff. The CNP created a special computer room for the machine by partitioning off a larger office. The new computer room opens onto the secretaries' area and enjoys unobstructed access; it is kept locked when not in use. Inside, there is room for the computer, printer, and software. Supplies (paper, printer ribbons, etc) are stored elsewhere. The room seats four users comfortably. Ventilation is provided by a window and electric fan; excessive heat is not a frequent problem. The computer room was re-wired by a professional electrician prior to installation of the machine. A cable runs directly from the wall into a 220-V line stabilizer and then into a 220/110 step-down transformer; the cleaned 110-V current is then wired into a baseboard outlet into which are plugged the machine and peripherals. This arrangement ensures that the machine cannot accidentally be plugged into a 220-V outlet. An uninterruptible power supply was not considered to be necessary.

A computer unit, with its own chief, was formally established by a CNP resolution (No. 034-84-P-CNP) and norms for its use drawn up. The norms establish priorities for access, scheduling procedures, and user responsibilities, while mandating annual training available to all CNP staff.

Legal ownership of the microcomputer system was transferred to the CNP and the Ministry of Health (MOH) by a letter of

donation from USAID/Lima and a letter of acceptance from the CNP. No formal arrangements for repairs/replacement have been made; the CNP originally was to have purchased a maintenance contract with a local firm, but subsequently declined to do so because of the high cost.

At the time of the site visit in June, 1985, the CPU and peripherals were operative. A problem appears to have developed in the keyboard, affecting one or more function keys; the extent of the problem is as yet unknown.

B. Training

A total of 16 staff from the CNP were trained during del Pinal's first two trips to Lima, including eight members of the Policy, Planning, and Research groups (primary users); eight members of the Office of Communications; and three secretaries (secondary users). Two staff from the National Statistics Institute (Instituto Nacional de Estadística, INE) were also trained in November 1984. During the site visit in June, 1985, it was possible to individually interview seven of the eight primary users and one secondary user. At the request of Ms. Norma Parker, of USAID/Lima, the INE trainees were not interviewed, so as not to interfere with production of the data tape for the National Health and Nutrition survey.

Impressions about the clarity and adequacy of the training on the part of the trainees were uniformly very positive, and both individually and in group the trainees cited the outstanding rapport developed by Jorge del Pinal. Little direct observation was made of the concurrent workshop because it involved more one-on-one problem-solving with specific packages, but the few observations that were made bore out the trainees' self-reports. Likewise, in light of the high volume of computer-generated output, it seemed unnecessary to ask the trainees to demonstrate their mastery of the programs.

Figure C-1 summarizes the training experience of the seven primary users interviewed. The user from the Communications Office is not included in the figure because her experience was atypical and because the participation of the Communications Office, although requested by the CNP with USAID/Lima concurrence, was peripheral to the central aims of the DDD participation. A number of findings bear comment: a) First, it should be noted that the educational level of the trainees is quite high--all but one have had some post-graduate education, and several are highly-trained demographers with extensive experience in indirect fertility and mortality estimation techniques.

b) Second, previous computer experience was almost non-existent--only one trainee had mainframe experience, one had micro experience (RAPID I on the Apple), and one had worked with programmers in graduate school. c) The trainees as a group have become proficient in a number of programs, but with the exception of the computer unit chief, tend to specialize in two or three programs. The low use of Survey-Mate reflects the CNP's concentration on secondary data analysis. d) A multiplier effect can already be detected--three of the trainees have already trained others to use the machine.

C. Utilization of the machine

From the compiled sign-up sheets, it was possible to calculate levels of utilization; these are presented in Figure C-2. Weekly use has averaged 23 hours (sd 10.4), or 62% of scheduled working hours (sd 28.7). The primary user group (Research, Policy, Planning) accounts for the bulk of the use. Recently, the computer has been made available to interns participating in a course for government workers, which is taught by CNP staff; usage by external groups is expected to increase.

The self-assessment of CNP Executive Director, Dr. Luis Sobrevilla, is that the computer has not yet expanded the range of activities performed but has boosted productivity and efficiency enormously. Since the microcomputer was installed, the CNP has published a demographic wall-chart with demographic-economic indicators at the department level (demographic package, SPSS), a monograph on methodology for socio-demographic diagnostics (SPSS-correlation matrix, factor analysis), and an updated bibliographic listing (Volkswriter), and is in the final printing process of a research monograph on utilization of MOH MCH and family planning services (SPSS, Lotus, Volkswriter). On-going projects include secondary analysis of recent census data (demographic package) and data entry and analysis (survey-mate, SPSS) of a pilot survey of pharmacists. A larger-scale survey of pharmacists now in the field, and data entry (at INE) of a 2,000-interview survey of fertility and family planning is under way.

D. Future Directions

With the two surveys currently in progress (pharmacists, fertility and family planning) the CNP seems to be moving gradually into the area of data entry and primary data analysis. New potential data sets for secondary analysis include the 1981 census, the 1984 National Health and Nutrition Survey, and a new DHS survey (tentatively scheduled for late 1986).

Long-term planning for the CNP will have to await the inauguration of the new government on July 28, 1985. That the

directorate will change is certain--the current President, Executive Director, and Director General have already made their post-transition plans. Should the new government wish, the staffing of the CNB could be changed down to the level of the technicians and the microcomputer transferred to another division of the MOH. The feeling at the Mission, however, is that this worst-case scenario is unlikely to occur. The new government has indicated that population policies will continue, and that the CNP will continue to play an important role. It seems likely that an 11th hour executive decree on population will be issued prior to July 28 which, among other things, further strengthens the position of the CNP.

E. General Evaluation of the Technical Support Activities and Microcomputer Applications to the CNP

1. Is there a coherent strategy for the country selected for assistance? Is the assistance provided by Westinghouse meeting a priority demographic data need?

In the case of Peru, the CNP has proved to be an appropriate recipient of DDD assistance, in terms of personnel, prior experience, and interest. Peru as an LDC is data-rich, with two recent censuses (1971 and 1981), a CPS, and other extensive national and regional surveys. That is not to say that all data are equally accessible--INE has yet to release province-level breakdowns of the 1981 census.

From the information made available to the evaluation team, it cannot be determined if the CNP was the most appropriate or only appropriate recipient of DDD assistance. Selection of the CNP over other institutions (for example, INE) was made by the Mission prior to DDD involvement in Peru, and the original needs assessment was conducted by another centrally funded project. (RAPID II).

Thus, while the DDD project can neither be credited nor blamed for the selection of the CNP, it can be said that the CNP was an appropriate focus for DDD activities, that the project was responsive to perceived Mission and host needs, and that the assistance provided has met a priority demographic data need.

2. Were the microcomputer hardware and software packages transferred to the CNP appropriate for their intended task? What other packages might be more appropriate?

The original hardware and software transfer appears to have been appropriate, but it seems that the CNP may have "outgrown" the system as originally configured. In addition to the software installed by DDD, a number of other programs have been installed

including the CELADE demographic package and RAPID. The entire list of programs currently residing on the hard disk includes:

- | | |
|-----------------------|------------------------------------|
| * SPSS | * Survey-mate |
| * Lotus 1-2-3 | * DDDSYS (DDD demographic package) |
| * DYNPLAN (Rapid II) | * dBASE III |
| * WordStar | * IBM DOS 2. |
| * IBM Personal Editor | * TECMAR (graphics) |
| * PANDEM (CELADE) | * Projections package (CELADE) |
| * Volkswriter deluxe | * MS Pascal compiler |

Conservatively speaking, these programs alone occupy at least 8 MB of the 10-MB fixed disk, leaving 2 MB or less for data. Storage space should be increased (DDD has since adopted the 20-MB fixed disk as project standard); perhaps the most flexible up-grade would be the addition of a 20-MB, two cartridge Bernoulli Box. The less frequently used programs (e.g., DDD, RAPID) could be stored on cartridge, freeing up another 2 MB of fixed disk storage space, in addition to the second cartridge (the latter suggestion regarding allocation of fixed disk and cartridge space was made by Jorge del Pinal).

Other possible peripherals might include a magnetic tape drive, especially if the IBM microcomputer can be made to read a Wang-produced tape (INE has a Wang mini). Census data is currently being transferred as print-outs which must be re-entered by hand into the microcomputer; it would be much more efficient to be able to read a census tape directly into the micro. Furthermore, the data tape for the fertility and family planning survey is being created at INE where better data entry and editing capabilities are available, after which a local firm will be contracted to down-load the tape to diskettes. The cost of this down-loading is not yet known, but it may prove less expensive in the not-very long run to buy a tape drive.

Finally, it should be noted that the CNP system was designed for secondary demographic analysis of existing data sets. It was not designed for heavy word processing use or for data entry. As these functions become more important, the lack of a second terminal will become a limiting factor in machine accessibility. It is not a problem yet: with efficient scheduling, machine use could be increased by at least 50 percent within the normal work schedule (it is unrealistic to budget 100 percent use within the normal work week and still permit some flexibility in scheduling), evening hours could be considered for lower-priority work, and the new machine planned for the Office of Communications will absorb that unit's demand for the existing machine (the Communications Unit currently accounts for 14 percent of machine use) and could be used as a second word-processing station.

However, it is not too early to begin planning for additional work stations. Given the state of the art and costs, neither networking nor telecommunications would appear viable options. A cheaper and more efficient option would be to purchase limited-capacity microcomputers (IBM PC or 100 percent PC compatible) to use for data entry and word processing and transfer the data to the larger machine on diskette for analysis. Two floppy disk drives and 256K RAM would be sufficient (and boosting RAM to 512K would add \$100 or less to the cost of the unit), as none of the word-processing, editing, or data-entry programs is very large and all can be run from floppy disk. Another advantage of the independent CPU over a dedicated terminal is that it can be placed in another work location or taken into the field.

Although the CNB users are comfortable with the DDD demographic package, especially the Brass corrections, they do complain that data entry is slow and cumbersome. The computer chief felt that the CELADE programs were much more user-friendly in this regard. It would be a great improvement if the DDOSYS package could input data sets produced by other programs and output results which could be read directly by other programs. As it stands now, data for DDOSYS must be entered by hand in response to screen prompts, and the results are output to print files. Thus, to use the derived rates or other results in further analysis requires re-entering them again by hand into Lotus or an editing program. In terms of projection models, Jorge del Pinal felt that the RAPID model was easier to use and was willing to teach it in place of the projection model in DDOSYS.

The major obstacle to efficient use of the DDD-installed software (and even so, use to date has been highly efficient) is the lack of documentation in Spanish. All of the primary users interviewed can read English, yet all found the lack of documentation in Spanish a problem. Recently, Donald Bogue arranged a Spanish translation of some of the manuals, but the translators he employed were not computer users; the consensus in Peru was that the materials prepared were less than adequate. The suggestion was made by the CNP users that DDD not translate all the manuals into Spanish, but instead create a Spanish-language introductory manual, with a few pages devoted to each package, to orient the user to the microcomputer in general, each program package, and the package manual. This would assist local training of new users and act as a refresher for previously-trained users. For more detailed questions, the user would be referred to the complete English-language documents. It should also be pointed out that most of English-language manuals already contain a general overview or introduction to the package, and that it may be sufficient to translate this overview into Spanish. The perceived need for a separate introductory manual

may indeed be a reflection of the total lack of Spanish-language documentation.

3. Is there sufficient training on and support of the equipment transferred to the institution to ensure that the technology will continue to be used? Is the quality and duration of in-country assistance sufficient to meet the host country's needs?

Training

In the three visits to Peru spanning the eight-month period from November 1984 - June 1985, DDD has spent a total of six weeks with the CNP. Training in the use of the equipment and software appears to have been sufficient and appropriate, judging from the interviews and the products produced.

Future training in Peru and/or other Latin American countries could be improved by the following measures:

- a) Spanish-language documentation. This has been discussed in the previous section.
- b) More structured lesson plans, with clearly-stated objectives and exercises for each day. This would promote uniformity of training from workshop to workshop and across installations, assist refresher courses and promote self-review, and assist local training of new users after the DDD TA has terminated. It would also allow a new trainer, either from within the DDD project or from another project, to assess what had already been covered prior to designing and implementing add-on training. These lesson plans should be written in Spanish and distributed to the participants, in writing, each day. The importance of distribution of written, native-language training materials cannot be overemphasized.
- c) Limitation of class size to four-five participants per machine. This was the stated goal of the DDD training in Peru (see del Pinal trip report #1, November 3-21, 1984, p.2) and the opinion of the users interviewed at the June site visit. Training at the CNP was initially open to all interested staff, and some 18 participants attended the first sessions; numbers were subsequently reduced by a process of self-selection.

Attendance should be limited, by the host institution, to the maximum of four-five participants per machine at the outset of training. This can be accomplished by limiting the total number of participants and/or by dividing them into separate, successive sessions. The limiting factor is number of machines available. Enforcing the maximum size rules should be the responsibility of the host institution and not the DDD trainer.

gl

d) Participants should be released from their usual work responsibilities during the course of the workshop. Competing demands on their time was cited by several trainees as a hindrance to their full participation, and as pointed out by del Pinal, partial participation tends to dilute the training process. Release time should also be the responsibility of the host institution.

e) Fewer programs should be taught at each workshop with more time devoted to each program. During his first visit to Peru, del Pinal attempted to teach the DOS operating system and program packages of varying complexity (including introducing both Volkswriter and WordStar). While the attempt was ultimately successful (as indicated in Table A-1, all of the programs have been mastered, each by at least one primary user), it was probably over-ambitious. Since users tend to specialize in one-three programs, a better approach might have been to divide the group into smaller units and teach each unit two - three programs. This would have permitted a deeper understanding of each program while at the same time insuring that all of the packages were covered. This would be preferable to trying to teach everyone every program or to limiting the number of packages introduced. With the exception of Wordstar, all of the packages were subsequently utilized, and to have eliminated any one of them from the first workshop would have had negative repercussions in the work produced between the first and second visits.

f) A formal evaluation procedure should be instituted at the termination of each training workshop and a test of retention administered prior to initiation of refresher workshops, to permit more rapid diagnosis of problem areas. For example, it was discovered during the June site visit that four of the six regular users of SPSS did not remember how to input data files into SPSS. (They had been trained to use the Personal Editor to create data files for secondary analysis and to use the CONVERT routine of Survey-mate in the case of primary analysis.) The problem was disguised by the large quantity of SPSS output generated after the second workshop; most of those users working actively with SPSS in June were still using data sets created during the second workshop with del Pinal's hands-on assistance and were, themselves, unaware of the fact that they had forgotten (or perhaps had never adequately learned) how to input data. The chief of the computer center did, on the other hand, know how to use Personal Editor and had independently created several data sets without assistance, and another primary user had enough detail in his notes to re-instruct him in the same. Since he was still using a data set created in January, he had not yet had occasion to consult his notes.

Maintenance

A potentially more troubling aspect of the microcomputer transfer concerns maintenance of the hardware after installation. This problem is not confined to the DDD project but is common to all centrally- and bilaterally-funded projects which include permanent microcomputer transfer to the host institution. In different countries, DDD has installed equipment and/or components purchased with DDD funds, other centrally-funded projects, and bilateral funds provided by the local Mission. In the case of Peru, the system was purchased from bilateral funds and ownership legally transferred from the Mission to the CNP by a formal letter of donation. The Mission has not formally obligated itself to repair or replace defective parts.

While DDD did insure careful installation by requesting a professional electrician and waiting for him to arrive, this cannot guarantee that problems will not arise in the future. Likewise, the DDD project suggested that a maintenance contract be taken out and was told by the CNP in January that such a step would be taken; however, the CNP failed to inform DDD that the contract was, in fact declined, and DDD was unable either to insist that a contract be signed or to assume financial responsibility for a machine purchased with Mission funds.

The problem has not yet been resolved, neither in Peru nor in the other countries where DDD has installed microcomputer systems. As was shown in an earlier section, machines and components purchased by DDD and RAPID II funds have been installed without even a formal letter of donation or of receipt. While the export license applications imply a permanent transfer to the host institution, it is not immediately obvious that the transfer has, indeed, been legally effected. It is recommended, therefore, that legally-binding letters of donation be drawn up immediately for all machines purchased by DDD, and that letters of understanding outlining responsibilities of donor and recipient, similar to the prototype already drafted by DDD, be signed for every system installed by DDD. In the case of Peru, the agreement would be signed by the Mission and the CNP. The agreement will vary slightly from setting to setting, but in the future DDD should install no systems without having both a signed letter of donation and a signed agreement of maintenance responsibilities. Enforcing this policy should be the responsibility of AID/W.

4. What impact has the technical support had in terms of strengthening institutional capabilities?

There can be no doubt that the CNP as an institution has been considerably strengthened by the technical support offered by the DDD project and that the microcomputer capability estab-

lished will continue to be utilized even after the project's termination. The primary users trained by DDD have already begun to train new users within the CNP staff as well as interns participating in the diploma program in population at the Catholic University, taught by CNP staff. The computer center chief has also designed a formal internal training course to be held in July 1985. Finally, the CNP hopes to use its newly-gained microcomputer facility to strengthen its operational and political standing among other agencies in the population field, principally universities and potential research collaborators.

5. Should the assistance activities be expanded, curtailed or remain at the current level during the remainder of the contract?

As it now stands, the CNP appears capable of operating independently without further DDD technical assistance. The questions that the primary users have concern sophisticated statistical/analytic techniques beyond the scope of the DDD contract. Should the Mission wish to pursue additional technical assistance, the more appropriate arrangement might be the placement of a long-term (six-12 months) research analyst/advisor in one of the three primary user groups (Planning, Policy, or Research) or directly in the computer center.

Depending on directions taken by the new government after July 28, this could all change. However, assuming that the machine remains in place along with the trained technicians, the present staff should be able to orient the new leadership to the uses of the microcomputer facility without requiring outside assistance.

6. Is there adequate follow-up in terms of additional assistance from other PDD projects?

The close collaboration with RAPID II that began with the first strategy paper developed in March, 1984 has continued, strengthened markedly by the long-standing personal relationship between Jorge del Pinel and Ken Yamashita. RAPID II has already given one training course and will soon give another. At the same time Ken Yamashita will also install a new plotter, like the main machine, purchased by the Mission with bilateral funds. There has been no collaboration with INPLAN to date: according to Art Danart, INPLAN has not requested permission to visit Peru nor has the Mission specifically invited them.

III. Future Direction - Ministry of Health

The need for an integrated health information system is

widely recognized both within USAID/Lima and within the Ministry of Health itself. To quote directly from an MOH document:

"In general terms it is recognized that

" 1) The information is not timely.

" 2) The data are not consistent.

" 3) A large number of forms are being continually filled out at all levels of the system with little utilization of the data collected.

" 4) There is no coordination between the producers and users of the data.

" 5) Diverse international agencies have offered to cooperate in a health information system, with little coordination among them.

" 6) There is little coordination between the central and regional levels of the health system regarding the health information system (little supervision, no field trips, uncoordinated regional initiative)."

To remedy the situation, the MOH issued a ministerial resolution on September 21, 1984, calling for the development and implementation of a health information system. USAID/Lima plans to collaborate in this effort through its two concurrent umbrella health projects and the Westinghouse Health Systems (WHS) advisory team in Lima, headed by John Gillespie. Through one of the Westinghouse advisors, Mauricio Thome, the Mission is working with the Office of Information and Statistics within the MOH, on a health information sub-system to cover the Mission's bilaterally-funded health projects. A purchase order for an IBM PC-At system was recently sent to Westinghouse/Columbia, and the DDD project has received Mission and AID/W concurrence to install the system in the MOH.

Designing, implementing, and evaluating the health MIS is expected to take several years. The MOH is currently in the process of printing new service statistics forms, which will be field-tested on a limited basis for six months. Eventually, the MIS developed for the Ministry will be expanded and extended to the other three components of the national health system (Social Security, Army and Police, and non-public sector).

The original Mission request for DDD assistance to the MOH was initiated by the WHS health team in Lima, with the justification that it would be a low-cost resource extension to the planned trips to the CNP, and that the experience with the CNP

could serve as a precedent or prototype for microcomputer transfers into the MOH. On his first visit to Peru, de Pinal went to the Ministry with Gillespie and Thome to explain the DDD project and WHS collaboration.

Current plans for the MOH call for a number of computers to be installed in the coming year. Some five or six microcomputers will be installed, four by USAID (information system, nutrition institute, water projects, and possibly administration), one by the Japanese (mental health), and one by the Germans (Cuzco region); most or all will be IBMs. In addition, the Pan American Health Organization (PAHO) is purchasing a Wang VS-15 mini-computer for the information system, which will not be able to communicate directly to the IBMs. Training needs will include basic analytic skills in addition to microcomputer techniques. The Mission is currently underwriting training for two staff from the analysis group of the nutrition institute, in nutritional analysis, in Chile, to prepare them for the analysis of the 1984 national health and nutrition survey. In addition to the WHS advisor, USAID/Lima has two other in-country advisors, and PAHO will be bringing in a full-time advisor in information systems.

Both the Mission and the WHS team are anxious that DDD not only install the first machine but also participate in training MOH users. The justification is that family planning and population policy are MOH priorities and that AID project -230 funds integrated health and family planning activities. While the health and nutrition survey does include demographic data (but no questions on family planning), the MOH information system, as described in the supporting documents to the ministerial resolution, will focus on user data. As long as DDD continues assistance to the CNP, assistance to the MOH can be added at little cost. However, once assistance is terminated to the CNP, a decision must be made by AID/W, USAID/Lima, and DDD as to whether or not assistance to the MOH information system can be justified in terms of the DDD mandate and competing demands from the rest of the Latin American region (eg, Bolivia, Guatemala, the Dominican Republic, etc).

APPENDIX D
SAHEL TRAINING: CASE STUDY

APPENDIX D

Sahel Training: Case Study

DDD technical assistance strategies have evolved in response to local conditions rather than following a common, centrally-dictated mandate. Hardware, peripherals, and software vary from setting to setting (with the constants being that the CPU is always IBM and that the DDDSYS demographic package is always included in the software installed). Thus, the Peru experience (see Appendix C) cannot and should not be taken as typical or prototypical of technical assistance provided in other developing countries.

In providing technical assistance to the CNP in Peru, DDD was able to take advantage of a number of favorable local conditions. First, the national government has recognized the need for a coherent population policy, at least at the pro forma level, and has created an official population council with formal linkages to other ministries. Second, a wealth of detailed demographic data is available, including two censuses and two national surveys. Third, the USAID mission has been receptive to centrally-funded projects in general, and has been willing and able to supplement central assistance funds with its own bilateral funds for purchasing hardware and software. Fourth, the CNP has a small staff of highly motivated, well-trained demographers who are already experienced in the demographic and statistical techniques included in the software installed by DDD. Fifth, training did not begin until after the machine was installed. Sixth, environmental conditions (heat, humidity, dust) in Lima are not extreme, and local electricity is fairly clean and reliable. Seventh, computer supplies and services are available locally, albeit at high cost. Eighth, the host institution was willing and able to dedicate physical and human resources to the installation and administration of the micro-computer facility. And finally, with few exceptions the same personnel participated in all three training workshops. These favorable conditions have been present in varying degrees in other DDD installations.

For the purposes of evaluation, it would be instructive to compare and contrast the training and technical assistance rendered to the CNP to training provided in a different situation. For maximum contrast, in terms of setting and training techniques utilized, the training and technical assistance provided to the Sahel Institute in Africa will be examined. The comparison is made for illustrative purposes only and in no way is meant to represent points on a continuum. Although it was not possible to observe a workshop at the Sahel Institute, a site

visit was made to Mali, where the Institute is located. The results of the site visit are described separately in Appendix E.

The Sahel Institute is a regional training/research resource funded almost entirely by the USAID Sahel-West Africa office. DDD contact with the Institute has been only with its Socio-Economic and Demographic Unit (USED). The Sahel region includes eight countries: Mali, Chad, the Gambia, Burkina Faso, Mauritania, Cape Verde, Niger, and Senegal. The Institute owns six IBM PC microcomputers, all with two floppy disk drives but with differing configurations, which were installed under AID auspices by other donors.

The original request for technical assistance came directly from the Institute to DDD. In addition to requesting training for Institute staff, USED was concerned that DDD training efforts in member countries not duplicate Institute training projects. It was decided that DDD would work through the Institute for both training and microcomputer installations.

The first workshop was offered 26 March - 6 April 1984 and the second workshop 4-16 March 1985. Three U.S.-based trainers (2 DDD plus 1 BuCen) and 4 USED staff held the first workshop, and two U.S.-based trainers (1 DDD plus 1 BuCen) and several USED staff held the second workshop.

Both workshops were open to all eight member countries. Invitations were sent to each government suggesting that two participants be nominated; candidates were to be demographers, statisticians, or programmers. USED paid all participant costs. The first workshop drew participants from seven countries (Burkina Faso experienced a coup shortly before the workshop), and the second workshop drew six countries (Cape Verde was unable to make appropriate travel arrangements, and the Institute declined the candidates proposed by Niger). After the experience of the first workshop, USED was more explicit about the qualifications of the trainees, and it was felt that the caliber of experience was much improved the following year.

Unlike the Peru training, which was focused on primary users, the Sahel workshops had two goals: to train eventual primary users in the member countries and to train the Sahel Institute trainers. The original intent was to install microcomputer systems in all the countries following the first workshop. In addition, the trainees were to be brought back to the Institute for refresher training. For a variety of reasons these ancillary goals have not yet been achieved.

The background and experience of the Sahel trainees differed markedly from the Peru group. The Peru trainees were all demographers or sociologists. Of the 21 participants in the

first Sahel workshop seven were demographers; six of the 13 participants in the second Sahel workshop were demographers. In Peru, one trainee had previous mainframe experience, and another had microcomputer experience. In the Sahel workshops, half the participants were statisticians or programmers, so the level of previous computer experience was much higher. In workshop #1, eight participants had mainframe experience and five had microcomputer experience, and in workshop #2, seven and eight participants had mainframe and microcomputer experience, respectively. In Peru DDD installed a microcomputer system immediately prior to the first workshop. In the Sahel, only one country participating in workshop #1 already had the appropriate hardware and two participating countries in workshop #2 had appropriate microcomputer systems. Finally, in Peru almost all the participants from workshop #1 participated in workshop #2 as well, while in the Sahel only three trainees participated in both workshops.

Training materials and techniques were more structured in the Sahel than in Peru, partly because of the larger number of participants and trainers, and the greater diversity in background and experience. Training lasted two weeks each year and was held outside the Institute; thus trainees had no other demands on their time. Five machines were made available each time (four trainees/machine in workshop #1; two-three trainees/machine in workshop #2).

Prior to the training, DDD BuCen and USED staff compiled lesson plans and introductory material and pulled together all the demographic data currently available for the Sahel region from the BuCen files. DDD and USED staff together translated the training materials and selected portions of the DDDSYS manual into French, and they were then edited by USED staff and distributed on their letterhead. Demographic programs to be taught were selected jointly by DDD and USED prior to the first workshop. Those programs with the strongest implications for population and development planning were selected, with an over-all emphasis leading up to projections.

Prior to the second workshop, USED paid for a programmer and a demographer to come to Westinghouse to prepare material and work with the software. The DDDSYS package was translated into French (commands and machine prompts). The French version was used in the second workshop. There are plans to complete the translation this year and convert the French version from p-system to MS-DOS.

Because many of the participants were not demographers, it was necessary to review basic demographic concepts as well as the microcomputer applications. This necessarily limited the number of packages that could be taught. USED staff covered demographic techniques, and DDD-BuCen taught the software.

No additional machines were installed by DDD at the Sahel Institute, although the existing systems were upgraded. DDD also provided all the software taught at the workshops, plus whichever books in French could be found. USED purchased French language books for the second workshop.

Current plans call for microcomputers to be installed by September 1985 in five Sahel-region countries, paid for by the Sahel Institute and USAID, plus a DDD financed microcomputer in Mali. DDD is providing technical assistance in configuring the machines; all the systems will be the same, and the two countries with IBM microcomputers already, will have their machines upgraded to match the new systems. Installation of the first new systems will be made jointly by DDD and USED with the expectation that USED will eventually assume total responsibility for installation. During the installation period at each site the DDDSYS and Lotus packages will be reviewed, WordStar (selected because it has a French version with French-language documentation) and Personal Editor will be introduced, and basic maintenance will be taught (software will include the advanced diagnostics).

It is premature to evaluate the impact of the DDD training on the eight Sahel region countries, since only two have appropriate microcomputers readily accessible. The impact on the Sahel Institute has been primarily to strengthen its training capabilities. Along with the four USED trainers another four staff members were trained, and complete French-language documentation produced. The benefits of the training and documentation should be realized in the future as the new microcomputer systems are installed.

DDD will work with USED in the first few microcomputer installations and monitor the installation/training process. Two evaluation issues would be addressed : (a) How well can USED install a microcomputer system and train (or re-train primary users)? This will help measure the adequacy of DDD's training of the USED trainers. (b) How much of the training was retained by the workshop participants? For some participants it will be six months and for others more than one year between training and machine installation. It is likely, therefore, that many or most of the participants will have forgotten the computer programs for lack of practice. DDD and USED should compare the time to retrain an old participant with the time needed to train a new user. An empirical finding of savings in retraining over new training would support the value of training prior to installation of the machines.

DDD should prepare guidelines for the installation/training process, directed to both evaluation issues. It is also recommen-

v, v

ded that DDD complete and evaluate the installation/training process before deciding whether or not to provide new or additional training for institutions where microcomputers have not yet been installed.

In sum, the Peru and Sahel experiences were quite different in terms of the characteristics of the participants, the training techniques employed, and the impact (outputs) observed to date (see Figure C-1).

In Peru, participation was limited to a single institution. The host institution did not select the participants, did not limit the number of participants to the agreed-upon maximum, did not grant released time, and diverged from the original training objectives by requesting training in additional packages (Word-Star, dBASE III). Training was provided by a single DDD trainer. Spanish-language training materials were not provided to the participants.

In the main, Peruvian training efforts concentrated on a small number of participants, all but one of whom had post-graduate training in demography. These participants became primary users of the machine. A total of seven program packages were introduced. Outputs to date include original demographic and socioeconomic analysis, a wall-chart, a monograph, and a book. The participants have pooled their notes on how to use the system, and one of the groups has written a guide to Lotus graphics. These materials could form the basis for production of Spanish-language documentation. Several new users have been trained in-house.

In Africa, participation was open to the eight member-countries of the Sahel region. The Sahel Institute did attempt to impose minimum selection criteria for the second workshop and did limit the total number of participants. Released time was granted. Training stayed close to the agree-upon objectives. A team approach was used, with three U.S.-based trainers and four local trainers. French-language training materials were provided to the participants.

A larger group of participants were trained (five machines were available), but many were not demographers. Because demographic techniques were covered as well, software was limited to one package in Workshop #1 and two packages in Workshop #2. Most of the participants in Workshop #2 were new trainees, only three trainees participated in both courses. Outputs to date are largely immeasurable, pending installation of microcomputers in the member countries.

Both cases should be considered successful, relative to local conditions and needs. In Peru, despite the initial

difficulties encountered, a group of highly trained and highly motivated primary users was trained in a broad array of statistical programs. Machine use is high and productivity outstanding, and the host institution appears to require little or no additional technical assistance. Local conditions in Africa lag considerably behind those in Latin America, and the Sahel Institute covers eight diverse countries, not just one as in the case of Peru. Given the training offered and documentation produced, it is hoped that the Sahel Institute will be able to take the leadership role in installing the microcomputer systems and training local personnel in their use, thus multiplying the DDD investment eight-fold. Continuing DDD assistance will probably be required, at least over the short run.

APPENDIX E
SITE VISITS TO SAHEL INSTITUTE

APPENDIX E

Site Visits to Sahel Institute

The response from all persons interviewed regarding DDD/-Westinghouse training seminars was very enthusiastic. The participants stressed the high quality of instruction provided by staff members at each seminar. The staff of the Socio-Economic and Demographic Unit (USED) of the Sahel Institute cited the egalitarian nature of collaboration with DDD/Westinghouse staff in completing preparatory and follow-up activities associated with each seminar.

The seminars have made a significant impact in strengthening the institutional capabilities of USED and the Sahel Institute at several levels. Staff members have been fully involved in planning seminars and in preparing materials for the participants. USED staff delivered lectures at the second seminar which reviewed material covered in the first workshop, strengthening their capacity to conduct similar workshops independently. Their work in preparing and translating documents serves to enhance their own learning. Generally, staff felt comfortable with teaching the French Microcomputer Programs for Demographic Analysis (FMCPDA) package, but were slightly nervous about presenting Lotus 1-2-3.

The participants interviewed were unanimous in noting the benefits of this training program. They found the level of instruction high and the material useful.

There were several complaints that the seminar was too short to cover all the material adequately, and the extra hours the micro were available were thus greatly appreciated. Each participant expressed the desire to include more instruction in general application software and statistical packages such as Lotus 1-2-3, SAS, and SPSS-X. Dissatisfaction with the projection program (PROJ 5) was evident; this was apparently a function of both the data requirements of the program and the length of time it took to run.

As the computer to be installed in Mali at the DNS has not yet been delivered, it was not possible to monitor use patterns or maintenance. IBM has recently opened a dealership in Bamako, although it is not clear if they will service machines purchased in the U.S. or France. The USED/USAID liaison in particular voiced concern about maintenance of micros and the consistency of hardware installed throughout the region, and requested increased

N.B. This Appendix is excerpted from a report prepared by Ms. Susan Enea covering her trip to Bamako, Mali, July 1985

training on trouble-shooting problems which might arise. The room at DNSI where the micros and the Apple IIe to be provided by RAPID II will be installed is approximately 6 feet by 10 feet, air conditioned, well-lighted, and has a door which locks. The installation of a Honeywell-Bull mainframe and six dual-station data processing is located in the same building. It is clean, neat, well-cooled and well-lighted. There is adequate work space for data entry clerks. It is apparent there is understanding of appropriate site maintenance.

A report of the national analysis prepared during the second seminar is being prepared for publication; a copy will soon be reviewed by DDD/Westinghouse personnel. The lack of publications distributed by the Institute has hampered its installation and recognition as an increasingly viable regional institution. Thus, the production of reports from this and subsequent seminars meets an important need for the institute as a whole, in addition to increasing the availability of high quality demographic data in the region.

The USED staff screens participants prior to selection for the seminars. Each applicant is asked to detail his or her experience using computer: type, frequency of use, knowledge of programming and software. Although each of the eight Sahelian countries sent participants, several applicants have been turned away due to their being obviously ill-prepared for training. (Certificate of recognition awards are given to those who complete training.)

USED is also enhancing its capability to house regional conferences and workshops. The DDD training workshops are conducted in a local hotel; all arrangements are made by local staff. Locating the workshop in a hotel rather than on Institute premises serves several purposes. Power supply is more dependable, ensuring against long periods when the machines may be out of use. Participants have access to the micros during lunch and evening hours. Finally, housing all participants in the same locale facilitates their access to equipment, reduces the likelihood of tardiness, and possibly reduces fatigue which may result if participants were to stay with local family or friends and thus be drawn into social activities.

One issue to consider is the lengthy delay which has occurred between the training workshop and the installation of micros in several countries. One USED participant/instructor stressed the need to practice using the programs soon after learning them in order to assimilate the skills learned. This has obviously been limited in several countries, and the impact of the delay may become evident at the time of the third seminar if excessive time must be spent on review of previously covered material. As USED staff appear to make regular use of the

programs, they may be in a position to conduct "refresher courses" for other participants. Locally, statisticians from the Ministry of Plan will use USED facilities and FMCPDS programs to analyze results of an Infant Mortality Survey presently underway in Bamako and two Sahelian countries. The use by participants of local data was identified as important, as it is more interesting and more reinforcing to manipulate familiar data, and to foresee the use of the results of analysis.

In summary, the collaboration of DDD/Westinghouse and USED/Institute of the Sanel is held in high regard by both sets of counterparts. There are many indications that this collaboration has had and will continue to have beneficial consequences in establishing the Institute as a significant regional demographic center.

APPENDIX F
SCOPE OF WORK

Appendix F

SCOPE OF WORK

Scope of Work for the Evaluation
of the Westinghouse Demographic
Data for Development Contract

Background: The purpose of the Demographic Data for Development (DDD) project is to provide technical support to LDCs and AID for the analysis and dissemination of population and family planning data. The project is being carried out simultaneously with an intergovernmental agreement (RSSA) with the U.S. Bureau of the Census, a cooperative agreement with the East-West Population Institute, and a contract with Westinghouse Health Systems. The specific objectives of the Westinghouse contract are fourfold:

- 1) To provide technical support to population and statistics institutions in 10-15 LDCs for the analysis and dissemination of demographic and family planning data;
- 2) To develop and maintain computerized files on demographic, population policy and family planning variables;
- 3) To prepare and disseminate population reports, policy briefs, special tabulations and respond to ad hoc requests from AID and LDC institutions;
- 4) To transfer microcomputer technology to LDC institutions to improve their capability in processing and analyzing demographic and family planning data.

Accomplishments: After a slow start up because of difficulties in recruiting senior staff to the project, all activities are now in full gear.

- Technical support in analyzing and disseminating demographic and family planning data is being provided in twelve LDCs: Burma, Bolivia, Cameroon, Dominican Republic, Honduras, Malawi, Mali, Nigeria, Peru, Somalia, Sudan and Turkey.
- Demographic, population policy and family planning data bases are operational on the AID computer. An index and a brochure describing these files are complete and are being distributed. To date Westinghouse has responded to over sixty ad hoc requests for population information.

- Population policy reviews have been prepared (and disseminated) for 18 LDCs, primarily African countries. Drafts for three population reports are in varying stages of completion. (The topics are: Natural Family Planning, Infant Mortality Levels in Sub-Saharan Africa, and Population Applications of Microcomputers.)
- Mainframe computer programs for analyzing demographic data have been adapted for use on the IBM-PC along with accompanying documentation. Westinghouse has transferred microcomputer systems to LDC institutions in Bolivia, Burma, Cameroon, Peru, Somalia, Sudan and Turkey. Training in microcomputers and demographic applications has been provided in all these countries as well as to Sahelian countries through the Sahel Institute.

Contract Funding and History: In September 1982 Westinghouse Health Systems was awarded a five-year contract to undertake the activities outlined above. The contract amount is \$2,975,289. Total obligations through FY 85 are \$1,779,000 which is consistent with the budget levels of the contract (\$1,740,587 through FY 85).

Contract Assessment: Responses to a recent questionnaire on centrally funded population activities indicates that many missions view as high priority the strengthening of LDC institutions to process and analyze demographic and family planning data. Communications from missions demonstrate that Westinghouse is successful in addressing these needs in the countries where the staff are active. In fact, the project may be too successful. If the current demand for technical support continues to be met, the project will reach its budgeted ceiling and satisfy the technical assistance portion of the contract before the contract termination date.

Proposed Evaluation

This evaluation is scheduled to coincide with the mid-point of the DDD/Westinghouse contract. It is designed to: assess Westinghouse's performance in light of the project objectives; provide guidance to Westinghouse and AID on modifying activities during the remainder of the contract; and make recommendations for a follow-on project to be developed by AID. Westinghouse's performance will be evaluated in terms of its ability to: provide support to LDC institutions in processing, analyzing and disseminating population and family planning information; transfer microcomputer technology to LDC institutions; maintain population data bases; and prepare and disseminate population reports and policy briefs.

Specifically, the evaluation team will examine six areas:

1. Technical Support Activities: Westinghouse is responsible for providing technical assistance to LDC institutions to analyze and disseminate demographic and family planning data and to enhance host country capability for processing and analyzing such data. Over the life of the contract assistance will be provided to 10-15 LDCs of which about half will be in Africa. The key questions which the team will address are:
 - . How well is Westinghouse meeting the technical support component of the contract? What impact has the support had in terms of strengthening institutional capabilities?
 - . Is there a coherent strategy for each country selected for assistance? Is the assistance provided by Westinghouse meeting a priority demographic data need?
 - . Is the quality and duration of in-country assistance sufficient to meet the host country's needs?
 - . Should the assistance activities be expanded, curtailed or remain at the current level during the remainder of the contract?
 - . Is there adequate follow-up in terms of additional assistance from other PDD projects?
2. Population Data Files: Westinghouse is responsible for developing and maintaining computerized data files on population and family planning characteristics for all LDCs. These files include data from the U.S. Bureau of the Census, the United Nations, the World Fertility Surveys, and the Contraceptive Prevalence Surveys. To facilitate use of this data an index of the files has been prepared and distributed. Data from these files are to be used when appropriate to respond to ad hoc requests from AID, AID contractors and LDC institutions. Among the questions that the team will address in this area are:
 - . How much effort is spent maintaining the files and are they worth the investment? Are the various data files well organized and maintained? Are the files designed so that it is easy to retrieve needed information? Does the index adequately describe the files? What can be done to improve the awareness and use of these files by AID, AID contractors and LDC institutions?

- How responsive is Westinghouse to ad hoc requests made by AID and LDC institutions?
3. Population Reports and Policy Briefs: Over the life of the contract Westinghouse is to prepare and disseminate eight population and family planning reports. In addition, they are to prepare and disseminate eight population policy briefs. Specific questions for the evaluation team are:
- How well is Westinghouse meeting this component of the contract? Are sufficient staff resources being devoted to this component? If not, can the staff resources be increased without jeopardizing other portions of the contract? Should the number of outputs under the component be reduced in view of the greater than anticipated demand for technical support activities?
 - How central are the reports and policy briefs to the objectives of the project? How appropriate are the report topics to the project objectives?
 - Is the format of the population policy reviews and their dissemination adequate? How can their value and use be maximized?
4. Microcomputer Applications: Westinghouse is responsible for transferring microcomputer technology to improve the processing and analysis of population and family planning data. To achieve this, Westinghouse is to adapt existing demographic software for use on microcomputers, to purchase and install in 10-15 LDCs microcomputer hardware and software, and to train host country staff in the use of microcomputers for population and family planning analysis. Key questions for the evaluation team are:
- Is Westinghouse adequately meeting this portion of the contract?
 - Are the most appropriate demographic programs being downloaded to the microcomputer? What can be done to maximize the user-friendliness of these programs, and can it be done without extensive programming?
 - Are the microcomputer hardware and software packages being transferred to LDC institutions appropriate for their intended task? What other packages might be more appropriate?

- . Is there sufficient training on and support of the equipment transferred to LDC institutions to ensure that the technology will continue to be used?
- 5. Management: In implementing this contract, Westinghouse has recruited a staff of six professionals and one secretary. The team is asked to assess the staff's performance in light of the project's objectives. Key questions for the team to address are:
 - . Are the number and qualifications of the staff adequate for the type of assistance being provided?
 - . Is sufficient staff time (professional and clerical) devoted to each component to enable the project to meet the terms of the contract? Is the allocation of staff resources consistent with the demand for technical assistance and microcomputer technology?
 - . Is the DDD/Westinghouse project coordinated with other Policy Division and Office of Population activities? How can coordination be improved?
 - . What are the implications for staff resources of the increased demand for technical assistance?
 - . Does Westinghouse meet its contract requirements for the timely submission of trip reports, semi-annual reports, substantive correspondence and other project documents?
- 6. Funding: The current demand for technical support, including microcomputer transfers, is higher than anticipated and if it continues the project may face a cost overrun in its final year. The evaluation team is asked to address this potential problem by examining the following questions:
 - . Is the current distribution of financial and staff resources among the project components adequate to meet the project and contract objectives?
 - . With the current financial constraints - due to increased demand for technical support - how should the workscope be modified and the resources be distributed during the remainder of the contract in order to meet the project and contract objectives?
- 7. Future Directions: The evaluation team is asked to consider what modifications, if any, should be made to the current Demographic Data for Development project. In addition, the team is asked to make recommendations about a planned follow-on project. Among the questions the team will address are:

- Should AID continue to support this type of activity? (i.e. strengthening the capacity of LDC institutions to process, analyze and disseminate population and family planning data.)
- Are there new directions which a follow-on project should include that would improve the project design and purpose? Conversely, are there activities called for in the current project which should be deleted or given lower priority in a subsequent project?

APPENDIX G
CONTRACT STATEMENT OF WORK
DEMOGRAPHIC DATA FOR DEVELOPMENT PROJECT

Appendix G

CONTRACT STATEMENT OF WORK
DEMOGRAPHIC DATA FOR DEVELOPMENT PROJECT

The Statement of Work for the Westinghouse project indicates that the contractor will be responsible for completing the following tasks.

1. Provide technical assistance to developing country institutions primarily to evaluate, analyze and disseminate demographic and family planning data in order to improve utilization of such data and to enhance host country capability for processing and analyzing such data. In order to implement this task, Westinghouse agreed to:

a. Identify and select (in consultation with the AID/CTO) appropriate countries to receive technical assistance.

b. Develop a plan (strategy) for each country selected for technical assistance that includes:

(1) an assessment of the data needs, data availability, current and potential data users, statistical capabilities and constraints to data processing, analysis and dissemination, and

(2) the formulation of a strategy to address the identified needs, drawing on this project and other projects' resources as well as other funding sources. The strategy shall identify priority needs, the level and type of technical assistance needed, how the assistance shall be provided, and the appropriate timing for the delivery of the assistance.

- c. Provide technical assistance in 10 to 15 countries (with approximately 50 percent of the countries from the African region) which may request assistance.
 - d. Include, among the areas of technical assistance available, data processing, data analysis, installation of and training on micro-computers, and adaptation and installation of computer software.
2. Create and maintain population and family planning data and information files for all developing countries. In order to implement this task, Westinghouse agreed to:
- a. Maintain a special computerized user subfile of the data system of the International Statistical Programs Center of the U.S. Bureau of the Census as well as the family planning file developed by the Population Reference Bureau; and develop, subject to constraints on access, a special uses subfile containing data from the World Fertility Surveys and the Contraceptive Prevalence Surveys.
 - b. Make these data available to the S&T/DIU Economic and Social Data System in a form compatible with their micro-level data files.
 - c. Review the data and file contents and assess their potential for demographic and policy analysis and research; prepare a brief index and description of the data files; prepare a mailing list of appropriate institutions and individuals who should receive information about the files; prepare an index information packet for the data files and mail it to the

members of the mailing list; and enter all requests received on a computer file.

- d. Transcribe the computerized data files onto different tapes suitably formatted for various hardware systems;
 - e. Use the AID/DM computer system in order to store, maintain and utilize the files;
 - f. Also use a micro-computer system for data storage, retrieval and manipulation in conjunction with the transfer of micro-computer technology to developing country institutions (see Task 4, below).
 - g. Develop and maintain a repository of materials (articles, reports, books, etc.) relating to governmental policy as it affects population, including materials on general population policy, measures affecting fertility, and measures affecting migration.
 - h. Develop and maintain, as part of the special user subfile, a country-specific population policy computerized file which indicates the current status of official policy statements for all AID-assisted countries as well as other countries with model policies. This should be done in collaboration with the Population Policy Section, Population Division, Department of International Economic and Social Affairs of the United Nations. The file should be up-dated as needed.
3. Prepare tabulations, analyses and reports on population and family planning topics of particular interest to developing countries, USAID missions, AID/Washington and AID contractors. In order to accomplish this task, Westinghouse agreed to:

- a. Serve as an information source to respond to ad hoc and special requests for population and family planning information.
- b. Prepare an unspecified number of special tabulations and analyses, ranging from short briefs on particular countries to broad collations of data on a regional or world wide basis. Selection of topics is to be determined jointly by Westinghouse and the AID/CTO. These special tabulations are designed to:
 - (1) provide AID officials with data needed for program planning;
 - (2) supply other AID contractors with the information they require to prepare reports and design projects;
 - (3) inform planners and government officials in developing countries about specific topics concerning their countries; and
 - (4) form the tabular base for the analytic reports to be prepared under the project.
- c. Prepare the following reports:
 - (1) Eight population and family reports (1-2 per year) on topics to be selected jointly by the contractor and the AID/CTO. These reports should not duplicate those of other AID contractors, and should be prepared or reviewed by an expert in the subject area.
 - (2) Eight policy briefs (1-2 per year), also on topics selected jointly by the contractor and the AID/CTO.

These briefs shall utilize the repository of population policy materials and shall also take into account the interests of the country or countries covered.

- d. Disseminate the tabulations, analyses, reports, and policy briefs by mailing copies to appropriate institutions and through seminars conducted in developing countries and in Washington, D.C. The number of mailings will be determined jointly by Westinghouse and the AID/CTO, as will the scheduling of seminars. Over the life of the contract, Westinghouse will conduct five in-country seminars and five half-day or one-day seminars in Washington, D.C. in conjunction with Task 1 and Task 3 activities.
 - e. Identify in conjunction with the AID/CTO existing publications (two per year) which are considered useful for improved understanding of population and development relationships by developing country policymakers, planners, and journalists. Westinghouse shall arrange through the original publisher to purchase, translate (if necessary), print or reprint and distribute these publications.
4. Transfer micro-computer technology in order to improve the processing and analysis of population and family planning data, as well as relevant social and economic data. In order to implement this task, Westinghouse shall:
- a. Evaluate the potential use of micro-computers in 10 to 15 developing countries participating in the technical assistance component (Task 1) of the project in conjunction with the implementation plan.

- b. Evaluate various micro-computer systems and software in order to determine what type of system and software should be procured for the project.
- c. Purchase and install micro-computer systems at developing country institutions, and train up to ten appropriate host-country staff in the use of micro-computer hardware and maintenance of the equipment.
- d. Adapt (if necessary) existing processing and analysis software for use on micro-computers, purchase and install software, and train appropriate host-country staff in its use.
- e. Develop and implement a plan jointly with host-country institutions that receive the micro-computer system for the continued use and maintenance of equipment (both hardware and software), which may involve additional technical assistance. In addition, Westinghouse will provide follow-up technical assistance which may include:
 - (1) training, whenever there are changes or up-dates to the hardware or software components of the system;
 - (2) provision of new supporting documentation and resolution of problems as reported by system users; and
 - (3) modification of software to fill new needs which have developed since the initial installation.

In addition to completion of the tasks indicated above, the Westinghouse contract calls for submission of periodic reports including:

1. semi-annual progress reports
2. monthly expenditure reports
3. trip reports for all overseas travel (within 15 days of completion)
4. eight population and family-planning reports (1-2 per year).
(See Task 3c(1), above.)
5. eight policy briefs (1-2 per year). (See Task 3c(2), above.)

q/h

APPENDIX E
TABLES AND FIGURES INCLUDED IN REPORT

Table III.1.4

Summary of Trip Reports and Dates

	Date of Trip	Date Trip Report Submitted	Elapsed Time (in days)*
Bolivia	Sept. 10-16, 1984	Oct. 3, 1984	17
	Jan. 11-20, 1985	Feb. 11, 1985	17
Burma	Dec. 5-10, 1983	Jan. 11, 1984	18
	June 10-25, 1984	July 18, 1984	23
	Sept. 11-Oct. 11, 1984	Oct. 22, 1984	11
	Dec. 3-16, 1984	Jan. 15, 1985	20
Cameroon	Oct. 1-9, 1983	Nov. 16, 1983	20
	July 15-21, 1984	Aug. 6, 1984	16
	Nov. 13-27, 1984	Jan. 9, 1985	44
Cape Verde	June 26-July 5, 1983	Aug. 3, 1983	29
Dominican Republic	Jan. 27-30, 1985	Feb. 11, 1985	12
Guatemala	Nov. 14-29, 1983	(file missing no information)	
Honduras	Nov. 29-Dec. 1, 1983	Dec. 13, 1983	12
	Aug. 27-Sept. 7, 1984	Nov. 20, 1984	64
Indonesia	Dec. 10-17, 1983	Jan. 4, 1984	18
Mali	Oct. 8-13, 1983	Nov. 2, 1984	20
	Mar. 22-Apr. 7, 1984	May 11, 1984	34
	Mar. 12-30, 1985	May 14, 1985	45
Malawi	Sept. 15-22, 1984	Dec. 4, 1984	66
Mauritania	Nov. 24-Dec. 2, 1984	Jan. 9, 1985	38
Nigeria	Oct. 14-18, 1983	Nov. 14, 1983	27
	Sept. 23-Oct. 5, 1984	Dec. 10, 1984	40
	May 16-26, 1985	June 18, 1985	23
Peru	Nov. 3-21, 1984	Jan. 9, 1985	49
	Jan. 20-26, 1985	Feb. 12, 1985	17
Somali	Feb. 14-Mar. 8, 1984	Apr. 4, 1984	27
	Sept. 7-27, 1984	Oct. 31, 1984	34
	Jan. 27-Feb. 10, 1985	Feb. 19, 1985	9

Sudan	Mar. 4-Mar. 18, 1984	April 9, 1984	22
	Oct. 7-13, 1984	Dec. 10, 1984	40
	Feb. 4-24, 1985	Apr. 2, 1985	32
Turkey	Jan. 15-Feb. 1, 1985	Feb. 27, 1985	26
	Feb. 25-Mar. 1, 1985	Apr. 2, 1985	32

$$\bar{X} = \frac{\quad}{\quad} = 28.2$$

(N=32)

* From end of trip to report submission.

Table III.2.2

Projected Costs of Maintaining Current Rate
of Activities and Spending

	(1)	(2)	(3)	(4)	(5)
Labor	\$1,762,502	\$1,072,098	\$935,630	\$2,007,728	+\$245,266
Consultants	138,600	60,634	87,500	148,134	+9,534
Travel	225,439	204,752	165,248	370,000	+144,561
Other Direct Costs	179,118	103,382	65,625	169,007	-10,111
Subcontracts	75,161	80,390	25,000	105,390	+29,744
	<u>\$2,381,275</u>	<u>\$1,521,256</u>	<u>\$1,279,003</u>	<u>\$2,800,259</u>	<u>+\$</u>

- (1) Total Budget
 (2) Estimated Total Expenditures Through December 1985
 (3) Estimated Expenditures January 1986 Through September 1987
 (4) Total Estimated Expenditures (2) + (3) = (4)
 (5) Projected Over (+) or Under Spending (4) - (1) = (5)

Table IV.1.1

Technical Assistance Provided By Westinghouse DDD Project

Country	Strategy Prepared	Assistance*	Computer Installed**	Completed	No. of Visits Planned	** Workshops
<u>Latin America and Asia</u>						
1. Bolivia	Yes	Yes	Yes	2	2	1
2. Burma	Yes	Yes	Yes	5	2	1
3. Dominican Republic	Yes	No	Planned	1	3	
4. Guatemala	Yes	No	No	1	2	
5. Honduras	No	Yes	No	2		1
6. Indonesia	No	No	No	1		
7. Peru	Yes	No	Yes	3		3
8. Turkey	Yes	Yes	Yes	3	3	1
<u>Africa</u>						
9. Cameroon	Yes	No	Yes	3	2	1
10. Malawi	Yes	Yes	Planned	1	5	
11. Nigeria	Yes	Yes	No	3	3	
12. Sahel Institute	Yes	No	5 Planned	5	2	2
(8 countries)						
13. Somalia	Yes	Yes	Yes	3	1	1
14. Sudan	Yes	Yes	Yes	3	3	

* Assistance in processing/analyzing a specific data set.

** In conjunction with data processing/analysis.

*** Number of completed training workshops.

Table IV.2.1-A

Microcomputer Equipment Installed

	<u>Equipment</u>	<u>Funded By</u>	<u>Documentation</u>
<u>Latin America</u>			
1. Bolivia	IBM-PC 10 MG Hard Disk Printer Software	DDD	Receipt Export License
2. Peru	IBM-XT Voltage Regulator Printer Software	USAID/Peru	Donation Receipt Customs Clearance Export License
<u>Asia/Near East</u>			
3. Burma	IBM-XT UPS Printer Software	DDD	Airway bill Export License Shipper's invoice
4. Turkey	IBM-PC 20 MG Hard Disk Tapedrive Transformer/Line Stabilizer Printer Software	DDD RAPID II	Airway bill Shipper's invoice Export License
<u>Africa</u>			
5. Cameroon	IBM-PC 10MB Hard Disk Voltage Regulator Printer Software	DDD	Receipt Shipper's invoice Export License
6. Somalia	IBM-PC UPS Printer Software	DDD	Cable traffic
7. Sudan	IBM-PC UPS 2 Printers Software	DDD	Shipper's invoice Airway bill Export License

Table IV.2.1-B

Microcomputer Equipment to be Installed

	<u>Equipment</u>	<u>Funded</u>
<u>Africa</u>		
1. Malawi	IBM-AT UPS Tape Drive Plotter Printer Bernoulli Box Software	MOH/Malawi through World Bank loan
2-6. Sahel Region (includes five separate in- stallations in five countries)	5 IBM-PCs 5 20 MG Hard Disks 5 UPS 5 Printers Software	Sahel Institute/ USAID
<u>Asia/Near East</u>		
7. Turkey	IBM-PC Printer	Hacettepe Institute for Population Studies
<u>Latin America</u>		
8. Peru	IBM-AT UPS Bernoulli Box Printer	USAID/Peru

TABLE D-1

CHARACTERISTICS OF TRAINING: COMPARISON OF PERU AND SAHEL

# Countries Participating	1	1	7	6
Host Language(s)	Span.	Span.	French Port. Engl.	French English
<u>WORKSHOP CHARACTERISTICS</u>				
Instruction Language	Span.	Span.	French	French
# U.S. Trainers	1	1	3	2
# Local Trainers	0	0	4 <u>1/</u>	4
# Participants	9 <u>2/</u>	5 <u>2/</u>	21	13
# Participants Re-Trained	-	4/9	-	3/21
# Machines (Training)	1	1	5	5
Own IBM Microcomputer	all	all	2/21	4/13
% Demographers	all	all	7/21	6/13
Local Data	good	good	poor	poor
# Days Training	9	5	10	10
# Hours/Day	8	8	11 <u>3/</u>	11 <u>3/</u>
Release Time Given	no	no	yes	yes
<u>TRAINING MATERIALS</u>				
Instruction Lang. Documentation	no	no	yes	yes
Lesson Outlines	no	no	yes	yes
Prepared Exercises	no	no	yes	yes

1/ Being trained as trainers

2/ Primary users

3/ includes evenings and weekends

11

Formal Evaluation	no	no	yes	yes
Focus	users	users	users/ trainers	users/ trainers
<u>TRAINING CONTENT</u>				
Demographic Tech Reviewed	no	no	yes	yes
Operating System	yes	yes	yes	yes
DDDSYS Programs (# Taught)	2	5	5	9
Lotus 1-2-3	yes	yes	no	yes
SPSS	yes	yes	no	no
Word Processing	yes	yes	no	no
Personal Editor	yes	yes	no	no
Survey-Mate	yes	yes	no	no
<u>POST-TRAINING OUTPUTS</u>				
Demographic Analyses	yes	yes	yes	in progress
Other Analyses	yes	yes	no	no
Publications	no	yes	no	no
In-Service Training	no	yes	no	no

FIGURE C-1

BACKGROUND OF TRAINEES
AND IMPACT OF TRAINING: PERU

DIVISION	EDUCATION	MAINFRAME	MICRO	PROG.	# COURSES	DDD	SPSS	LOTUS	VM	SM	PE	TRAIN OTH.	CURRENT USE
Research	Economics BA & MA		X		1		*						1
Research Chief of Computer	Economics, BA Demography Post-Grad	X			13	**	**	**	**	*	**	X	+
Research	Sociology, BA				12			**	*				#
Research	Sociology, BA MA Study				1		*			**			-
Planning	Sociology, BA Demograph., MA				2	**	**		*			X	+
Policy & Evaluation	Sociology Post-Grad				11		*	**	**		*	X	1
Planning	Anthropology BA Econ. Demog. MA			X	1	**	**						+
TOTAL		1	1	1	41		4	4	4	2	2	1	1

* = 1 course
 ** = 2 courses
 # = 3 courses
 + = 4 courses
 - = 5 courses
 = = 6 courses
 = = 7 courses
 = = 8 courses
 = = 9 courses
 = = 10 courses
 = = 11 courses
 = = 12 courses
 = = 13 courses
 = = 14 courses
 = = 15 courses
 = = 16 courses
 = = 17 courses
 = = 18 courses
 = = 19 courses
 = = 20 courses

WEEKLY USE OF MICROCOMPUTER - PERU

614

MONTH	WEEK	# WORKING HOURS	TOTAL USE *	% USE	RESEARCH	POLICY	PLANNING	COMMUNICATIONS	SECRETARIES	OTHER	EXTERNAL	COURSES
JANUARY	1	18	5	28		5						
	2	35	11	31		3	6					
	3	35	24	68	15		9					
	4	35	35	100	3			4				
	5	35	20	57	8	3	9					28 DDD
FEBRUARY	1	35	17	48	2	8	7					
	2	35	39	111		26	5	8				10 Secy's (internal)
	3	35	38	108		21	10	5	2			
	4	35	29	83		18	3	5	3			
MARCH	1	35	27	77	1	8	3	11	4			
	2	35	39	111	4	16	4	10	5			
	3	35	28	80		15	3	10				
	4	35	20	57	4	4	6	6				
APRIL	1	36	14	39	6	2	6					
	2	45	19	42	10	6	3					
	3	35	17	38	2	5	4		2	4		
	4	45	14	31	6	2				6		
MAY	1	36	8	22				8				
	2	45	30	67			4					
	3	45	35	78			1					26 RAPID II
	4	45	20	44		3		6			11	34 RAPID II
	5	45	10	22								10 dBASE III - COMUN.
JUNE	1	45	33	73	4	4	4	4			17	

* Total Use Does Not Include Evening Hours (After 5 p.m.)

SOURCE: Computer Center Sign-Up Sheets