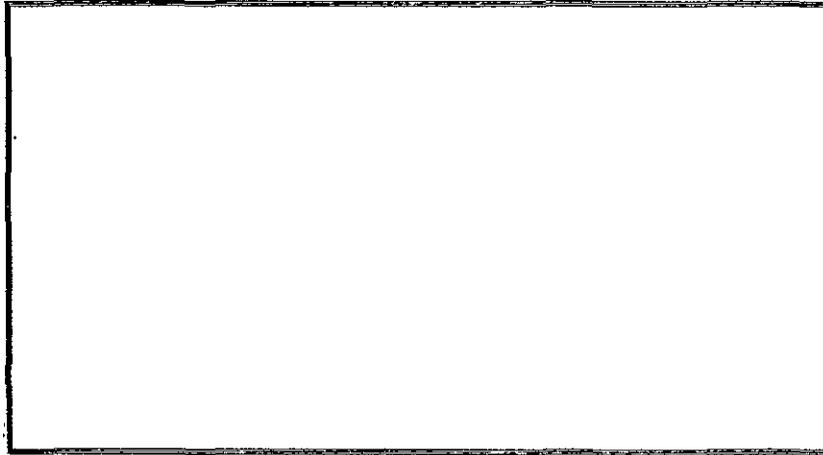


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AN EVALUATION OF THE PERFORMANCE
OF THE POPULATION REFERENCE BUREAU
IN COLLECTING, ANALYZING, AND MANAGING
DATA FOR AID-SUPPORTED POPULATION PROGRAMS

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The briefing of the team by Ms. Suzanne Olds of the APHA deserves specific mention. This substantive session on the morning of July 21, 1981, a prelude to a two-day intensive site visit, was concise and to the point, and gave the members of the team the insight they needed to properly execute their assignment. For that session, the team is indebted to the following staff of the United States Agency for International Development (USAID): J. Brackett, J. Chao, R. Cornelius, R. Halladay, J. Seltzer, and J. Speidel. The review team also was most fortunate in being able to meet with Ms. Catherine Gleason, chief of data management for the USAID. Ms. Gleason generously gave of her time and played a significant role in helping the team to evaluate the data management aspects of the contract.

All the on-site staff of the PRB who are contributing to the fulfillment of the contract cooperated fully and enthusiastically to satisfy the team's requests and to answer its numerous questions.

At Georgetown University, the subcontractor responsible for developing a computer-based management system, Dr. Thomas Merrick and his staff gave generously of their time to discuss how they review and analyze the required data and to demonstrate the computer data storage and retrieval systems and operations.

Reached by telephone, Dr. Robert J. Lapham, director of the Committee on Demography, the National Academy of Sciences (NAS), most cordially discussed relations between the PRB and the NAS, and rendered a judgment, from the perspective of the committee, on the PRB's execution of the contract.

To all these people, the review team expresses its indebtedness and gratitude.

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- Appendix C: Cost Reimbursement Contract
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ABBREVIATIONS

APHA	American Public Health Association
CPR	Center for Population Research
CPS	Contraceptive Prevalence Survey
CTO	Cognizant Technical Officer
IPPF	International Planned Parenthood Federation
LDC	Less Developed Country
NAS	National Academy of Sciences
PRB	Population Reference Bureau
TSO	Terminal System Operations
USAID	United States Agency for International Development
WFS	World Fertility Survey

I. INTRODUCTION AND BACKGROUND

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Purpose of the Assignment

The American Public Health Association (APHA), a consulting agency to the United States Agency for International Development (USAID), assembled a three-member team in July 1981 for an intensive review of the performance of the Population Reference Bureau (PRB) of Washington, D.C., in executing contract AID/DSPE-C-0024, which terminates September 30, 1981. The three-year contract negotiated for \$1,137,849, began on October 1, 1978. It stipulates that the PRB will provide technical support to the USAID and to selected developing countries to compile, assess, and analyze demographic and family planning data from censuses, surveys, and vital registration systems. The material generated under the contract is meant to serve the USAID in the evaluation of AID-supported population programs.

As stipulated in the terms of reference, the review team was to consider the following factors:

- the completeness, reliability, and currency of the demographic and family planning data compiled by the PRB;
- the expertise available to and the cost-efficiency of a computerized data management system;
- the effectiveness of the charts and display materials (i.e., their impact on different audiences and on world population dynamics);
- the progress and quality of the reports derived from World Fertility Survey (WFS) reports and data;
- the usefulness of the PRB's services to administrators and policymakers in assessing population assistance programs in less developed countries (LDCs); and
- continuation of the contract (the team was to recommend how the PRB could extend or provide the same, similar, or abbreviated services and materials).

Methodology

To execute its assignment, the review team developed a methodology that included:

- thorough reading and review of the PRB proposal, the contract, memoranda on financial matters, progress reports, and other administrative documents;
- a two-day on-site visit to interview personnel at the Office of Population, USAID, in Rosslyn, Virginia; the PRB office in Washington; the Georgetown University Center for Population Research (CPR), the PRB's sub-contractor; and the USAID's data management headquarters in Washington;
- an analysis and appraisal of the data, documents, and computer systems for data storage, retrieval, manipulation, evaluation, and management;
- communication by telephone and conferences during the site visit, as well as a one-day session on August 5, 1981 at the Population Council's office in New York;
- written reports by different members of the team; and
- the consolidation of the different sections into a single, final report (this was done by the team leader).

Prior to the site visit, the review team received a packet of materials from Mr. Robert P. Worrall, president of the Population Reference Bureau. The packet contained the following items:

- the AID contract and the subcontract with Georgetown University;
- semi-annual progress reports; and
- publications produced wholly or in part with contract support.

During the site visit, the review team requested and received additional information and materials which it considered necessary for its work. The items included budget expenditures; the curricula vitae of staff; internal correspondence from the Office of Population at the AID, and the PRB and particularly samples of reports produced by the PRB in response to ad hoc requests from the AID; distribution lists for materials; and information on reports not yet completed or under consideration. Many of the items were xeroxed and used as reference materials for the final report.

Background on the PRB

Founded in 1929, the PRB is best known for its Population Bulletin, now in its forty-first year, its news magazine, Intercom, and its Population Data Sheet, a wall chart of world demographic data that are country-specific. In negotiating the contract, the PRB did not present itself as a research organization nor was it so regarded by the USAID. The PRB still does not regard itself as a primary scientific research institution. However, in accordance with the terms of the contract, it recruited staff, both in-house and through its subcontractor, who were deemed to be capable of monitoring and evaluating the professional demographic literature and generating estimates of population and family planning variables. At the moment, the organization is something of a hybrid. It is concerned primarily with public relations, the education of audiences around the world in demographic and population-related economic facts and issues; yet, under the contract, it also must provide and be a critical analyst of professional demographic materials.

Proximity was a factor in the selection of the PRB. It was felt that the contractor would be better able to fulfill the AID's ad hoc requests and need for services if it were accessible. The PRB is located in Washington, D.C., and thus had an advantage over its competitors in bidding for the AID contract.

The PRB maintains relations with the other AID contractors that compile, evaluate, and disseminate demographic data: the U.S. Census Bureau and the Committee on Demography of the National Academy of Sciences (NAS). In an internal memorandum to James Brackett (chief, Demography Division, USAID), dated 18 September 1978, Sander Levin (assistant administrator for development support, International Development Cooperation Agency, USAID) directed that PRB "staff should not be engaged in primary data collection or even compilation of data that would be redundant with the work of either the NAS committee staff or the analysis of the Bureau of the Census." Levin stressed that "the matter of coordination between the Census Bureau and outside contractors must be handled very carefully and sensitively" to ensure cooperation among and feedback from all the parties to the contract.

A detailed examination of interrelations between the PRB and other AID contractors was beyond the scope of the assignment, but the team did note that the subject has been raised by PRB staff. Suffice it to say, PRB staff think that their relations with other AID contractors are most harmonious and cooperative. From their own professional vantage point, PRB staff consider such relations to be indispensable to successful performance.

The recent financial difficulties of the PRB are no secret. In reviewing the PRB's 1980 Annual Report (Appendix A), the team found that expenditures exceeded revenues by 32 percent, 56 percent, and 20 percent in 1977, 1978, and

1979, respectively. The situation improved for the first time in 1980, when the PRB recorded a surplus of \$8,242 from total revenues of \$1,226,342. PRB officials naturally are pleased that the organization's financial condition has improved, and they recognize that their AID contract has contributed to this improvement.

As a percentage of total revenues, income from the contract was 7 percent, 30 percent, and 33 percent in 1978 (the contract began in the fall of 1978), 1979, and 1980, respectively. In 1981, the contract is expected to account for 31.5 percent of an estimated total revenue of \$1,291,000.

II. CONTRACT STAFF AND BUDGET

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Organization and Staffing

The PRB is organized into four units which report to the president, who is responsible to the Board of Trustees. The four units are Public Information Programs, Population Education, Demographic Research and Policy Analysis, and Administrative Services. The AID contract, known as "Special Project: Compilation and Analysis of Population Data," is under the jurisdiction of Demographic Research and Policy Analysis.

Dr. Sergio Diaz-Briquets, director of the special project, came on board in November 1978, one month after the contract began. Dr. Diaz-Briquets has a Ph.D in demography from the University of Pennsylvania and is well regarded by his colleagues.

The full-time staff have been fairly stable, except in mid-1980, when the assistant director and one of the researchers resigned. In addition to the director, the staff for the special projects includes an assistant director (Leon Bouvier), who gives 40 percent of his time to the project; two full-time research associates; three research assistants (one is full-time, the other two are part-time); and one secretary (75 percent time). Annually, staff accounts for 8.15 person-years. Between October 1, 1978 and September 30, 1980, salaries for project staff amounted to \$128,756, approximately \$16,000 per person-year.

Allocation of Funds and Expenditures

As Table 1 shows, \$1,137,849 were awarded for the three years of the contract, which was to start on October 1, 1978. One-third of this sum was allocated for salaries and fringe benefits; slightly less than one-fourth was allocated for the subcontract at the Georgetown University Center for Population Research; 15.8 percent was allotted to overhead; 12.6 percent was apportioned for travel (for conferences, data searches, etc.); and the remaining 15 percent went for consultants, equipment, supplies, and other direct costs. By May 31, 1981 (the date of the most recent budget report) thirty-two of the thirty-six months of the contract had expired, and expenditures had exceeded allocations for direct salaries (by 17 percent), fringe benefits (by 12 percent), overhead (by 19 percent), and the subcontract (by 2 percent). Expenditures have been contained well within the original budget. A considerable balance of funds remains because the AID has discouraged travel and because virtually no overseas technical advisory services have been provided. Of the \$143,773 allotted for travel, only \$15,566 had been spent by May 31, 1981. On a pro rata basis, \$1,011,421 would have been spent by May 31, 1981, or \$55,538 more than the \$955,883 expended.

Table 1

FUNDS APPROVED AND EXPENDED UNDER PROJECT AID/DSPE-C-0024

	Approved: 10/1/78		Expenditures				Balance On 6/1/81
	Total	Percent Distribution	10/1/78- 9/30/79	10/1/79- 9/30/80	10/1/80- 5/31/81	10/1/78- 5/31/81	
Total Contract	\$1,137,849	100.0	\$294,480	\$408,766	\$252,637	\$955,883	\$181,966
Salaries	291,688	25.6	100,490	128,756	74,464	303,710	(12,022)
Consultants	18,000	1.6	576	5,158	6,466	12,210	5,790
Fringe Benefits	93,340	8.2	32,158	39,026	21,938	93,122	218
Overhead	180,102	15.8	69,897	77,253	43,248	190,398	(10,296)
Travel and Transportation	143,773	12.6	13,382	1,339	845	15,566	128,207
Other Direct Costs	111,211	9.8	11,888	38,453	33,831	84,172	27,039
Equipment and Supplies	37,240	3.3	12,756	1,499	3,301	17,556	19,684
Subcontract	262,495	23.1	53,333	117,272	68,544	239,149	23,346

Source: PRB "Status of Funds Expense Reports," various dates, mimeo.

Cost-Benefits

It is not possible to determine whether the output is worth the monetary cost of the contract. The review team does consider the costs per item to be plausible. Expenditures have been in line with allocations, and they have been made at a reasonable rate over time, which suggests that the financial arrangements were well planned and understood. The published charts and reports, as well as the manuals and data compiled and stored on-line or on tapes in the subcontractor's computer, are evidence that funds have been well spent. This is so whether or not the contract is renewed.

Compared with the original contract, the \$596,380 budget requested for a one-year extension seems high. Annually, it would be 57 percent more than the original contract provided (\$1,137,849 for three years) and 37 percent more than will be spent in the last year of the contract if the current budget is fully expended by September 30, 1981, the date of expiration. The increase is attributable partly to inflation but primarily to additions to the scope of work (e.g., a visiting scholar, the development of graphic data displays, rental of word processing equipment, etc.). (The merit of additions to the scope of the work and the new budget request is considered elsewhere in this report.)

III. OBSERVATIONS AND FINDINGS

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Contractual Obligations: Outputs

Each of the contractual obligations of the PRB is discussed below.

1. *Compile demographic and family planning data, covering indices of fertility, mortality, nuptiality, population size and composition, family planning, and socioeconomic indicators.*

The contract explicitly directed the PRB to obtain demographic and family planning data by telephoning or corresponding with second-party sources, primarily personnel from the AID, the Bureau of the Census, the World Bank, the National Academy of Sciences, the United Nations and its agencies, and other international organizations whose members are concerned with the collection and use of demographic and family planning information. Although they were permitted to do so, staff were not encouraged to travel to obtain materials.

2. *Develop a system of data storage, accessing, and analysis.*

The system was to be computer-based and be capable not only of storing and retrieving data, but also of applying "commonly accepted demographic and statistical evaluative and analytic techniques to such data (e.g., direct and indirect standardization, own-children analysis...)."*. The contractor was directed to maintain computer programs to analyze the quality of population data; to estimate the levels of and trends in fertility and mortality; to project population by age and sex (applying the El Badry correction for mis-reporting children ever born); to construct model or empirical life tables; to perform stable population analyses; to allow for curve fitting; etc.**

3. *Upon request from the USAID, prepare country and regional estimates, analyses, and reports on demographic and family planning topics.*

* See contract, Appendix C, p. C-6.

** Ibid., p. C-8.

To fulfill the AID's requests, the PRB was directed to review the literature thoroughly, to consult unpublished as well as published documents, to select appropriate analytical techniques to evaluate and estimate the data, and to present materials in innovative and attractive displays.*

4. *Prepare a specified list of materials, namely, a chart of world fertility patterns, a table of world demographic estimates, a report on contraceptive prevalence, and at least six reports summarizing the results of the World Fertility Survey.*
5. *Provide to some, but at most ten, statistical organizations in developing countries technical and advisory services in the compilation, storage and access, evaluation, and analysis of demographic and family planning data.*

The contract anticipated that a major portion of the overseas services would be seminars, workshops, and conferences.**

In reading these descriptions, one might conclude that a major output of the contract would be original evaluations and analyses of the levels of and trends in demographic phenomena and family planning activities. The reality is quite different. The output is much more in keeping with the PRB's history as a publicizer of demographic data and with the satisfaction of the AID's immediate needs than with the fruits of sophisticated analytical research. The AID may or may not have anticipated this result, but, whatever the case may be, it is clear that, in compiling an adequate data base to meet the AID's day-to-day ad hoc needs, the PRB fulfilled its mandate. Seen in this light, the contract was designed primarily to provide a service and only secondarily to produce a new professional product. The AID could legitimately claim services to meet, with appropriate swiftness, the demands of Congress and other agencies. With the AID's approval, contract staff also provided services, data, and research assistance to non-governmental organizations.

The result of the emphasis on service, as opposed to product, is a body of correspondence, internal memoranda, reports, and tabular data neither available to the public nor necessarily useful to the professional community at large. It is stated in the contractor's semiannual progress reports that the fulfillment of the AID's special and ad hoc requests required a considerable proportion of staff time during the contract and was a major factor

* Appendix C, pp. C-9--C-11.

** Ibid., pp. C-15--C-16.

in delays in meeting production deadlines. For the most part, the AID's requests were simple, calling for a particular statistic or a frequency distribution for one or more countries of a specified variable. In addition to brief overviews of the highlights of the period, the progress reports contain numerous examples of requested items and list in detail who asked for what. Several typical examples are given below.

- For thirty-seven countries, calculate the number of women of reproductive age, the percentage who know about two modern contraceptive methods, and the percentage of currently-married women who regularly use a contraceptive method. (Requested by the AID in July 1979.)
- Calculate the contraceptive prevalence rates for thirty-two countries in the western hemisphere. (Requested by the IPPF-WH Region in May 1979.)
- Project the population for Swaziland based on the country's 1976 census. (Requested by the AID; noted in report for period 10/1/79-3/31/80.)
- Provide selected demographic variables and calculate age-specific contraceptive prevalence rates for various Latin American countries. (Requested by AID/Latin America in February 1980.)
- Determine the gross reproduction rates for all countries in the world. (Requested by the AID; noted in report for period 10/1/80-3/31/81.)

The more recent semiannual reports suggest an increase both in the volume and sophistication of the requests (e.g., the AID requested a review of the literature on migration and a consultancy with Princeton University to prepare a multivariate analysis of the determinants of contraceptive availability). The increasing ability of the contractor to provide more numerous and more complex services as its data base and software packages expand suggests that service will continue to be more important than output.

The more formal outputs are the well known wall charts, maps, and published reports. The wall charts now include the "1981 World Population Data Sheet" (colored in orange and white); "Fertility and the Status of Women"* (green and white in the May 1981 edition); "World Fertility, January 1981"

* Earlier, this had been entitled "Family Planning and Marriage, 1970-1980."

(a chart of age-specific fertility rates for 120 countries, with the numerical rates given on the reverse side of the drawings); "The United States Population Data Sheet"; and the maps entitled "Population Dynamics of the World" (in the April 1981 edition, countries are shaded by intensity of color to show level of fertility, natural increase, life expectancy, and contraceptive use).

The contract calls for six publications based on WFS reports. Two reports have been published: Nuptiality Patterns in Developing Countries: Implications for Fertility, by Jane S. Durch, and Breast-feeding in the Developing World: Patterns and Implications for Future Trends, by Mary Mederios. Three other reports are expected to be completed by the time the contract expires. One report will be on contraceptive use, another on the status of women, and the third on the determinants of fertility preferences.

Quality and Accuracy of Data

Demographers continue to lament the poor quality and unreliability of population data in many parts of the world. But it is a fact that, because of the surge of interest in population in the past two decades, the quality and reliability of the data have improved. With technical and financial support from the United Nations, almost all the developing nations have taken a recent census, and in virtually all LDCs sample surveys of one kind or another have yielded estimates of demographic and related socioeconomic variables. Moreover, it is now possible to adjust even poor-quality data, using highly sophisticated statistical techniques and computer capabilities, to obtain reasonable and refined estimates.

As a result of their professional reputations, certain groups have become the authoritative sources for data on variables and countries for which statistics are suspect. To the extent that particular statistics become associated with specific authorities (e.g., population projections of the United Nations Population Office; contraceptive prevalence rates found by the World Fertility Survey), dispute is minimized, at least among professionals. There may, however, be differences in interpretation, definition, reference dates, and coverage, and these and sheer bias often result in the presentation in various publications of different estimates of the same statistic.

A. Wall Charts and Data Sheets

The team reviewed a variety of the materials published by the PRB. Staff seem to have a good understanding of the data, the selection of variables is good, and the choice of several possible estimates seems to be reasonable. Most important, there is no detectable bias to prove or disprove any proposition.

This is not to say, however, that the wall charts, for example, cannot be improved. The design of the wall charts and the quality of the data are very important because these charts probably are distributed more widely and used more frequently than any other set of data on population and family planning.

In the "World Population Data Sheet," it is not sufficiently clear that many of the numbers are general orders of magnitude. By failing to distinguish between rough estimates and more precise data, the unsuspecting reader takes all the figures literally and is not deterred by the warning in the footnote not to use the data as a time series. For example, the July 6, 1981, issue of Forbes magazine contains a table from Geo magazine, the data for which are attributed to the PRB. The table shows an increase in life expectancy at birth in Bangladesh from thirty-six years in 1975 to forty-seven years in 1981. (If the earlier figure came from a PRB source, it had to have pre-dated the contract.) An increase in life expectancy at birth of eleven years over a five-year span would be something of a record. Professional demographers would know this and recognize that the data are orders of magnitude; the average reader would not be able to make the distinction. One possible way to distinguish between precise and rough estimates is to vary the type.

The reference dates for data need to be improved. Where the column heading of the variable specifies the date, there is no ambiguity, but, for example, for infant mortality, age structure, and proportion urban, the dates vary considerably among countries. The disparities in dates are mentioned in the footnotes, but those readers who tend to ignore footnotes (and there are likely to be many, given the broad-based distribution of the data sheet) may, and sometimes do, infer that the publication date highlighted in the title is also the reference date for the data. The team appreciates the difficulty of improving the precision of the dates and sources of data without also cluttering tables with footnotes. Nonetheless, it recommends that attention be given to this matter.

On the whole, the 14 variables for the 169 countries listed on the "1981 World Population Data Sheet" were well selected. For the broad-based audience for which it is intended, this chart is among the most effective materials the PRB has produced, providing easy-to-consult, readily comprehensible data on demographic factors.

The family planning chart, renamed in 1981 "Fertility and the Status of Women," is a useful complement to the "World Population Data Sheet." The idea of disclosing the status of women is a good one, but, unfortunately, this latest chart does not contain the crucial indicators of women's status. Granted, data on the proportion of females in, for example, the paid labor force are not readily available, but such items as school enrollment, educational attainment, and age-specific literacy rates should have been included. The data on

contraceptive prevalence rates come from recognized sources, though these fail to provide specific information on source and reference date per country, age breakdown, contraceptive practice through the private and commercial as opposed to public, sectors, and so on. The author(s) imply mistakenly in footnote 13 that the PRB calculated some contraceptive prevalence rates "from administrative records of national family planning programs." This is not true. The rates were taken from other published documents. Moreover, contrary to the footnote, some of the programs do include traditional methods. Clearly, this chart is still in a developmental stage, and, as has been suggested here, could be improved.

B. Data Tapes and Files

The method used to assess the quality of the data in the wall charts could not be used to assess the quality of the data in the computerized system. Nonetheless, the team believes these data are of high quality, and for two reasons. One, Dr. Thomas Merrick, director of the CPR, is highly professional. Two, the computerized data-storage system is a library of materials, and not a pre-selected "best estimate" statistic of relevant population and family planning variables. There was considerable discussion on-site about whether a "best-estimate" tape or file is needed to respond to ad hoc requests for data. It is Dr. Merrick's opinion that the specificity of requests requires custom-made responses. Moreover, because data are continuously produced, monitored, compiled, and evaluated, any momentary "best-estimate" is likely to be short-lived. This is not to say that requests are fulfilled with several estimates of the same parameter, but rather that a judgment is made in meeting specific requests for information and data. The two claimants for PRB services who were interviewed by the review team--AID staff and the NAS Committee on Demography--both expressed satisfaction with the PRB's and CPR's services and data.

C. Internal Documents

A review of several internal documents prepared in response to the AID's special and ad hoc requests for data (notably global and regional data on contraceptive prevalence rates) indicated that PRB staff pay particular attention to data monitoring, documentation, sources, and quality. Extensive footnotes are appended to tables, and an explanatory text alerts the recipient to the limitations of the data and the methodologies (if any) used to calculate the estimates.

On the whole, the review team is satisfied that the data compiled from an array of reliable secondary sources and publicized by the PRB are of consistently good quality. It would note, however, that direct comparability with other sources is difficult because the reference dates often are not clear.

Service Versus Product

Most requests for information are answered without recourse to the computerized data bank that was developed and which is being maintained with project funds. Hard copy and print sources typically are used to respond to requests for data or to answer questions requiring research. To this extent, one could question the utility of the data files, given the kinds of questions most frequently asked by AID staff and by other interested persons in both academic and political organizations. Both the data services and assistance in research may be valuable aspects of the contract, but they may not be as closely related as was thought when the contract was drafted initially.

The language of the contract is another matter of concern. In reading the contract, one would assume that the concern is with products, but it is clear that staff at the AID and the PRB are preoccupied most often with ad hoc technical-assistance and research services. The contract clearly specifies that the compiled data are to be used to provide estimates and analyses and product reports on demographic and family planning topics at the request of the cognizant technical officer (CTO) at the AID. However, because most requests can be answered without referring to the computerized data base, the analyses and reports do not depend on the data base. One can thus say that the "product" is subservient to the "service." To illustrate the contractor's apparent preoccupation with providing services, the contract requires the preparation of at least six reports that summarize the results of the World Fertility Survey. To date, only two reports have been published, although a third is in final form. The reports are competently prepared, but their usefulness is necessarily limited because only published WFS reports can be used. It would be to the benefit of both the PRB and the AID to reconsider the contractor's orientation and to resolve the conflict between the provision of services and the desire for products.

One service function was not fulfilled during the contract. The PRB was to provide overseas technical and advisory services in the compilation, storage, access, evaluation, and analysis of demographic and family planning data. However, early in the contract, a senior official at the AID notified the contractor that it was not likely that such technical assistance would be required. The contractor made no efforts to overturn this decision. It appears that a considerable balance of funds for overseas on-site consultation remains. Should the contract be extended, either with the PRB or another organization, careful consideration should be given to the appropriateness of providing overseas technical and advisory services.

Requests for services have been received rather consistently during the life of the project from AID personnel and third parties authorized by the Office of Population to consult the PRB. Clearly, considerable staff time would have been required to answer in full some of the requests from individual researchers and other interested persons. It seems appropriate that some

assistance be given to members of the public and interested specialists, but, as the AID and the PRB are aware, it is difficult to regulate the amount of time that is spent on requests from persons outside the Office of Population.

The team was impressed with the efforts of PRB staff to answer questions using the best data and analytical techniques available. A review of internal documentation in the PRB's files revealed that attention is given to the issues of representativeness, measurement of errors, reliability, consistency with other available data, and the timeliness of the reference period. The team believes that the explanations and interpretative texts are particularly useful additions to the replies.

Publications: Preparation and Dissemination

A. World Population Data Sheet

The "World Population Data Sheet" is probably the most widely referenced and most useful of the PRB publications funded under the contract. Approximately 40,000 copies are printed and distributed. This data sheet has been published by the PRB for nineteen years. The AID made a wise decision in assuming most of the cost of this publication and expanding its distribution worldwide. The publication has been paid the most sincere form of flattery--imitation--by several institutions, including the Bureau of the Census, the United Nations, and the Environmental Fund. The Census Bureau's chart is less complete than that of the PRB and has only two additional items, the year of latest census and world rank in population size. It is difficult to understand why the AID pays for this chart, too (assuming it does). The charts of the United Nations and the Environmental Fund are duplications, but beyond the control of the AID. In fact, the Environmental Fund's chart is meant to be a challenge to that of the PRB--a challenge which, so far as the team has discerned, has not been picked up by any large constituency.

The PRB has published three data sheets under the AID contract. The format of each is similar, although a "special" item was picked up each year (e.g., the physical quality of life index in 1979, the projected ultimate population size in the 1980 edition, and persons per square kilometer of arable land in 1981). The total fertility rate, listed in the 1980 and 1981 charts, is a standard, but useful addition. Considering the wide range of variables available, the PRB seems to have made a reasonably wise choice of items to include in the limited space available. It should be noted, however, that the contract stipulated that the data sheet was to include, at least once in the three years, a column showing trends. This column has never been added, apparently with the AID's consent.

Although the data sheets are distributed widely throughout the world, including Latin America, they are published only in English. It seems that this limitation greatly attenuates this publication. The PRB should, therefore, consider translating it into Spanish and French, and possibly Arabic. There is ample evidence that the data sheets are used all over the world by various groups of professionals, policymakers, the media, teachers, and researchers. They would be even more useful if they were translated into other languages.

B. Family Planning and Women's Status Data Sheets

Under the contract, the PRB was supposed to publish annually updated, twenty-page reports on contraceptive prevalence two-color wall sheets. In fact, it has produced (apparently with the AID's concurrence) only two wall sheets, each of which includes considerably more than material on contraceptive prevalence, and one report on contraceptive prevalence, which was being proofed at the time of the review team's visit. The wall sheets were distributed to a somewhat smaller audience (30,000) than were the "World Population Data Sheets" (40,000). Most of the PRB's international membership were eliminated (of the 10,700 members, only 1,090 received the charts). Apparently, most of those who did not receive the wall charts are on the PRB's list for the Spanish-language Intercom.

Unlike the "World Population Data Sheets," the two family planning wall charts differ considerably in format, and they even have different titles. The first is called "Family Planning and Marriage--1970-1980," and the second is entitled, rather misleadingly, "Fertility and the Status of Women." Both repeat the population estimates and the estimated rates of total fertility contained in the "World Population Data Sheets." This redundancy is unnecessary because those who receive wall charts also receive the data sheets.

Neither the report nor the wall charts give trend data, although this is a requirement in the contract. The more recent chart on women's status includes some items on development (e.g., the per capita calorie supply as a percentage of requirements), but it omits two crucial measures of women's status: school enrollment and educational attainment. Also, the item on literacy should (as Parker Mauldin has noted) relate to the younger age groups (to effect changes), and not all adults. Contraceptive prevalence by age group is also of interest. Apparently, this wall chart has yet to be "shaken out" with experience, as is the case for the "World Population Data Sheet." Once this is done, the chart will be extremely useful. With the modifications noted here, the chart should continue to be produced and further refined as experience accumulates.

The booklet entitled "Patterns of Contraceptive Use Around the World" seems to be no more than a gesture to fulfill the conditions of the contract. Except for one table on contraceptive prevalence by median age of users per

method, no new information is provided. The booklet is merely a duplication of material found elsewhere (as in the wall chart) and in greater detail. It contains no breakdowns, for example, of contraceptive use by any socio-economic indicator. The only breakdown is by age. The AID finances Population Reports and, perhaps, other, far better popular documents. The team questions the continued publication of the booklet and similar pamphlets. Charts translated into Spanish and French would, it seems, be much more useful.

C. Age-Specific Fertility Rate Chart

The PRB has produced, apparently with the approval of the AID, only one of the three annually updated wall charts on age-specific fertility rates. This chart is patterned on the chart which the AID itself created earlier. It has been distributed to approximately 40,000 people--the same persons who receive the "World Population Data Sheets." Because of the placement of regional headings, the geography is confused (e.g., the United States appears to be in South America and England appears to be in Oceania). This can be corrected. The team is not convinced, however, that the data are best presented in this wall chart (although some academics and AID personnel might not agree). First, for too many of the countries, the data are uncertain. Second, the graphs are on one side of the sheet and the tables are on the other (as specified in the contract). One could infer from the former that a booklet might be more practical. Moreover, in a booklet explanations could be given and the limitations of the data highlighted. Third, it is not clear that there are 40,000 people who use and benefit from these data on age-specific fertility rates. One can surmise that of those 40,000 recipients, a sizable number can neither read nor understand the graphs or tables because they do not have a command of the language or lack technical expertise. Fourth, for a visual presentation, it might be more useful to limit the number of countries, selecting only those in which some time trend is apparent, and to produce slides or graphic displays on an Apple computer (many AID missions and offices now seem to be equipped with this computer). However the fertility rates are formulated, again, the presentation would be more useful if it was translated into other languages.

D. Maps

The PRB has created and distributed two sets of maps (one in 1980 and one in 1981) showing world patterns in fertility, life expectancy, natural increase, and contraceptive use. These maps are not specifically identified in the scope of work. Apparently, they were created at the request of the AID after the contract was signed.

The major difference between the two sets of maps is that one gives estimates of contraceptive use for countries where there are few or unreliable data. The maps are attractive and useful in show-and-tell sessions, but it is not clear that they are as useful as wall references as the "World Population Data Sheets" and the family planning data sheets.

The maps are distributed to an inordinate number of people. They reach the same 40,000 people who receive the "World Population Data Sheets" and the chart on age-specific fertility rates. It would seem to be more productive to distribute the maps to a more specialized audience (e.g., schools, AID missions, etc.) which could use them for show-and-tell. (It is notable, however, that the International Planned Parenthood Federation (IPPF) bought 7,000 of these maps and distributed them with People magazine.) Again, their usefulness is limited because they are not translated into other languages.

E. World Fertility Survey Reports

Six analyses based on WFS first-country reports were supposed to be prepared over the three years of the contract. Two reports had been published by the time of the review team's visit. One was on nuptiality and one was on breastfeeding. Two others, one on the status of women and one on family-size preferences, are, the team was told, in an advanced state of preparation. It is not clear whether a fifth report on contraceptive prevalence will be completed. Only the report on family-size preferences was among the subjects listed in the scope of work. Some of the recommended reports (e.g., the report on knowledge of the availability of family planning information, which was subcontracted to Princeton) would not have been completed had the PRB had recourse only to published data in first-country reports.

The report on nuptiality is based on data from fifteen Asian and Latin American countries; the report on breastfeeding is based on data from nineteen countries, including those in the Middle East and Africa. The distribution of these reports is much smaller than that of the wall charts. Approximately 10,000 copies of each report have been distributed.

The two published reports were competently written and presented. They are bivariate analyses; the authors had no access to the tapes they would have needed for any kind of multivariate analysis. The reports are not as interesting as Caldwell's analysis of nuptiality patterns or Jain and Bongaarts' analysis of breastfeeding patterns. (These reports were presented at the 1980 WFS meetings.) A more popular presentation of some of the secondary analysis might be more interesting than these descriptive pieces, which are little more than summaries of material presented in WFS reports. Both

the AID and the PRB put these reports at the bottom of their list of priorities--rightly the team thinks, because a more useful secondary analysis of WFS and Contraceptive Prevalence Survey (CPS) data is being undertaken. The results will be presented in Population Reports, International Family Planning Perspectives, Studies in Family Planning, and Population and Development Review, publications which reach not only wide, but also sophisticated audiences.

IV. THE COMPUTERIZED DATA MANAGEMENT SYSTEM

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Data Collection and Management

As part of the effort to compile data and monitor activities, the contract required the PRB to design and install a computerized system to store and retrieve the data, edit and tabulate data, apply commonly expected evaluative and analytical techniques to data, and display results of various analyses in attractive and understandable graphic and printed formats.

The PRB implemented the data-management components of the project through a subcontract with the Center for Population Research at Georgetown University. The director of the CPR, Dr. Thomas Merrick, who devotes approximately one day each week to project-related activities, is a well known, highly regarded demographer with considerable experience in the collection, analysis, and presentation of data from the developing world. He appears to have a thorough grasp of all details of the project and doubtlessly has helped to coordinate the work between the subcontractor and the PRB.

The collection of data, and especially the crucial issue of data reliability, are covered elsewhere in this report. Here, it is important to point out that both the contractor, the Population Reference Bureau, and the subcontractor, the CPR, seem to have collected appropriate information from all available sources. Not only have they relied on sources of data already in computer-readable form, but they also have created new computerized files from printed data. Moreover, the staff are alert to the shortcomings of sources of data and to the problems of estimation, and they are making good use of the data that are available.

Other systems than that which was adopted could be designed to produce data for this project. One attractive alternative would be to make a "best-guess estimate" of key demographic, health, social, economic, and family planning variables for each country. This approach, which would appeal, perhaps, to individual scholars, would not be particularly appropriate for a project that, at least in part, disseminates information to people interested in common estimates from presumably reliable sources, such as the United Nations. Another, probably more realistic approach would be to identify especially weak or sound estimates and to rank data by apparent quality. This would be a major undertaking, but the results might be particularly useful, especially as use of data at the PRB increases.

The PRB might consider formulating specific guidelines to making judgments about the quality of data. Clearly, these would be useful whether or not some sort of rating system was devised and used. If a rating system were used, it would be necessary to establish a formal set of criteria

and properly implement and maintain the system. Even if a formalized rating system is not used, a list of criteria could alert a user, especially a user unfamiliar with demographic, health, and other indicators, to the problems of quality. Although the staff appear to be well aware of the shortcomings of different data sets, they have difficulty explaining the criteria they use to select one of several available estimates. The PRB and the staff at the Georgetown Center do what most responsible professionals do: they rely on authority figures to make judgments.

The National Academy of Sciences' Committee on Population has the lion's share of authority figures. Many of America's best demographers sit on this committee and have access to the technical skills of the world's best population and data-collection experts. The PRB and the subcontractor, and therefore the government, are wise to rely on these authority figures to select the data they need. They are well served.

It would be useful to try to expand and be explicit about the criteria used to select the data sets. Given such documentation, those who use the data sets could be encouraged to think about the limitations of the data and, therefore, of their own analyses and conclusions.

A. Use of Computer Facilities

Considerable work has been done to assemble the data in files that are accessible to users. The PRB and the CPR seem to have followed carefully the guidelines in the contract to using the AID computer. Indeed, one of the strengths of the project is the cost-effective use by the CPR of the AID's data-processing facilities. The chief of the Office of Data Management at the AID has pointed out that by processing data in the AID computer, the subcontractor has saved the project money. Moreover, graduate students at Georgetown, and probably staff at the PRB, have acquired experience on the computer that has enhanced their training. The project has introduced successfully both staff and students to the computerized files. This has benefited the project, because staff know how to handle the files, and it has also benefited users. Persons who are uncertain or confused about the details of a particular tabulation can now call upon the pool of knowledgeable staff at both the PRB and the CPR for assistance.

B. Written Documentation

The project has supplied an excellent, but limited, written document on the procedures for assessing the files and using the computerized terminal that is linked to the AID's large computer. (This document is reviewed in the next section of this report.) More attention should be

given, however, to the provision of other high-quality, user oriented information, particularly on the characteristics and manipulation of the data sets, to make the project much more accessible to a larger and more varied group of users. The management of data files, the storage of data, the availability and maintenance of processing routines, all appear to be done efficiently. Given its other responsibilities, the team was not able to examine more fully system maintenance, updating, and so on, during its brief visit.

C. Filing and Retrieval

One area of weakness is the flexibility and accessibility of the system. All the data are not available. Clearly, some decisions had to be made about the amount of information that would be kept on-line in specific files. Although the team does not fault these decisions, it finds it curious that separate files are maintained for information that could, the team believes, be combined successfully into a single file. The storage of data in a single file would be of distinct advantage to the user and would relieve CPR staff of the responsibility to provide assistance in retrieving and manipulating data. To illustrate, considerable research is required to collect data on the age-specific fertility rate. These data are not and cannot be linked to other country-specific information which a user might wish to examine simultaneously with the variable. Consequently, when they receive a request for such information, staff resort to printed tables, and not to the computerized data file. In this circumstance, the computer file is little more than a reference file.

The team recommends that the PRB consider making the processing system more "intelligent." For example, it would be useful if a screen display or a printout were limited to specific countries and variables. At this time, all a country's data appear on the printout from a particular file, even when the user is interested in only a few indicators. If time and resources allow, the file should be modified so that specific queries can be answered. Modification would enhance the file's utility.

Another change also would make the data set more useful: the development of a generalized user-oriented extract program for those who are away from the site of the project, and especially for those with minimal background in data processing. The program could be used to extract information from the files and to store it in a format suitable for processing by SPSS and similar programs. At this time, requests are handled individually. To date, this approach has not seemed to present any problems, probably because of the low demand for computer-processing assistance and the availability of highly skilled and well motivated staff at Georgetown. However, with an increase in demand for access to the file, the system could become cumbersome and inefficient. Although the review team will not make a quantitative judgment

about potential demand on the project, it anticipates that the system will become more popular as knowledge of its existence spreads.

D. Quality Control

Careful quality control before data are input and output should be required. Given the likelihood of budget limitations, it may be unrealistic to expect innovation in this area. Nevertheless, several small changes in formatting could make the project much more useful. For example, the format of tables could be changed to make them less confusing and to ensure that they are labeled properly. Input instructions, commands, and the like also could be improved if more attention were given to the requirements of the user.

E. Limitations and Improvements

Ironically, day-to-day management of the system may be problematical because the system is not heavily used. Professional staff, consequently, tend to ignore the limitations of the system which are evident to the inexperienced data processor. Because so many of the questions answered by PRB staff outside Georgetown are based on printed, and not computerized, material, those concerned with the computer are unaware of the kinds of questions that are being asked and the limitations of their systems. Staff who do use the computer to answer questions are fairly well acquainted with the technology; thus, they are less concerned than less sophisticated technicians with efficiency and simplicity.

Overall, data collection, management, analysis, and dissemination appear to be well handled. Project staff have instituted a number of data-processing innovations, and they appear to have performed their basic responsibility very well. However, if the contract is extended, steps should be taken to make the data more accessible to persons who have no knowledge of computer processing. Also, efforts should be made to publicize information about data selection, the availability of files, program selection, processing options, and options for formatting.

The Users Guide

The purpose of the users guide is to acquaint the new user with some basic functions of the Terminal System Operations (TSO) editor. The person who tries to write a users guide to computer facilities faces a dual problem. On the one hand, he himself must be an experienced user to write a good manual. On the other hand, as an experienced user, he is likely to forget

how complicated the computer system will appear to be to the beginner and fail to describe it in detail.

The author(s) of the guide which the team reviewed seemed to have avoided this pitfall. The guide is well written, and most sections contain a sufficient number of examples to provide a beginner with a firm foundation to use the TSO editor. However, the manual could be improved with better organization. For example, in the introduction for methods are recommended: listing files, creating and editing files, managing files, and writing and executing programs. These four headings should be in boldfaced type and the remaining sections should be ordered under each relevant major heading. Other suggestions about specific parts of the manual are given below.

The explanation of the functions of the basic keys on the terminal is quite good, as is the description of the logon procedure. The section entitled "Sample Session Using TSO" is appropriate, for it enables the beginner user to become accustomed to pushing keys on the terminal and having the system respond. The section called "TSO Dataset Naming Conventions" could be improved with additional explanations of each kind of data set (DATA, TEXT, CNTL, and CLIST), the circumstances in which the user might need each type, and the problems he might have in using one or another data set. The Permanent File Index, Appendix A, to which reference is made on page 9 of the manual, seems to be missing. This omission should be corrected.

The manual does accomplish its primary task: to instruct a user in how to list the contents of a file. With practice, a beginner should be able to find and access any file he needs.

Creating and editing files, however, can be tricky business. On page 12 of the manual, it is stated: "To create a new file or recall an existing file, use the EDIT command." This sentence may confuse the beginner who has just read the section on listing files. Perhaps it would be better to say, "...or recall an existing file that the user wishes to modify." The manual contains an expert explanation of the EDIT and INPUT modes, the procedure to get in and out of each mode, and the purpose of each mode. The discussion of EDIT subcommands also is excellent. In some cases, the inclusion of "helpful hints" is appropriate. For example, computer systems are often unstable. The user who is doing considerable inputting could be advised to SAVE his work after typing several lines. By following this command, he would avoid the risk of losing his work should the system go down unexpectedly. It is doubtful that a beginner could create and edit a file after reading this section of the manual. However, by practicing with the examples and using the manual for reference, he could expect to become adept rather quickly.

The guide is not intended to be used to instruct the beginner in writing programs. To write programs, one must have a knowledge of a programming language. It is not likely that a beginner would have this knowledge.

The discussion about program execution (i.e., submission and outputting) is good, and it should be useful to a user who has become well acquainted with the TSO editor. The "Summary of Commands" also might be a convenient reference for anyone skilled in TSO.

Nowhere in the manual is there an explanation of what a user should do to protect his own and others' files. The question is addressed briefly in the section entitled "Data Management," but it should be elaborated to make it useful to the reader.

The section entitled "Summary of WFS Data Available on Tape" contains useful information, and although it is not an integral part of a manual for users of the TSO editor, it fits into the Population Data System Users Guide.

In sum, the manual is useful in acquainting a user with the TSO editor. Most sections are well written, and excellent examples are provided. The beginner who uses this manual should have little trouble listing files and creating and editing files. The guide should aid in expanding the base of users of the international demographic data system maintained by the CPR.

V. SUMMARY AND RECOMMENDATIONS

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The review team evaluated three aspects of the AID contract with the Population Reference Bureau: (1) the competence, reliability, and comprehensiveness of the materials produced either for public distribution or in response to specific requests for service or information; (2) the extent to which the terms of the contract have been fulfilled; and (3) recommendations for future activities, reports, and publications (assuming the PRB's request for a one-year extension of the contract is approved).

General Performance

The team is satisfied that the PRB performed competently. The organization recruited staff who were capable of executing the assignments. The subcontractor, the Georgetown University Center for Population Research, was a sound choice of agencies to develop a computer-based system to monitor, compile, manipulate, and analyze the data. With the guidance of the project's directors, the more junior staff and graduate students were able to be trained.

Data Sheets and Wall Charts

The team has made a number of recommendations to improve the wall charts. Design, distribution, source citations, reference dates, frequency of appearance, and selection of variables have been covered. Most of the team's criticisms of the wall charts are not serious. However, because they are distributed widely, and are probably the products most frequently used by a broad-based audience for population and family planning data, the team is confident that the PRB will welcome the criticisms nonetheless.

The "World Population Data Sheet" and the "Family Planning Data Sheet" should be translated into French and Spanish, and, if possible, Arabic as well. The PRB should consider eliminating the redundancy in variables in the "World Population Data Sheet" and chart entitled the "Fertility and the Status of Women." If the charts are not corrected so that the variables do not overlap, a new schedule of publication should be considered. For example, one or the other of the data sheets could be published biannually.

The team questions the publication of the age-specific fertility rate chart in its present form. The team surmises that a large proportion of the 40,000 persons who receive the chart cannot read or understand it because of difficulties with the language or technical jargon. Moreover, for 44 of the 120 countries, no time trend is given, and for developed countries (30 of the 120 countries), the significance of the time trend is not clear

because in all the periods the rates are low. To emphasize differences in levels and recent fertility decline (or the lack of decline), selected countries or regions might be listed rather than as many countries as possible. When too many countries are presented, relationships and an awareness of regional levels and trends are obscured. More care should be taken to ensure that the charts are targeted to the most appropriate audiences. The maps, for example, should be targeted to schools and training institutions, and not to the broad audience that receives the "World Population Data Sheet."

Fulfillment of Contractual Obligations

The PRB and the CPR have done a commendable job of monitoring and assembling the up-to-date, wide-ranging data base. The AID is satisfied with the speed, quality, and comprehensiveness of replies to its ad hoc and special requests. By widely distributing its published documents around the world and by making the computer-based data file and statistical packages available to interested parties, the PRB has been able to continue its public-relations activities.

The PRB would receive a low score on fulfilling the terms of the contract. The team does not hold the PRB responsible for failing to fulfill all the terms of the contract. The scope of work was, the team feels, too ambitious. Indeed, both the AID and the PRB indicated to the team that it was not necessarily intended to be fulfilled completely. The fact is that the AID gave priority to its need for information and is very satisfied with the service it has received.

The word "service" is the key to the problem with the contract. The AID felt apparently, that it was contracting with the PRB for a service, but it defined the expected output as specific products. The agency's expectations of the PRB changed over time, often in response to particular situations, but no changes were ever made to the specifications in the contract. The result was numerous anomalies. Thus, for example, no overseas technical and advisory services were provided, although twenty-seven person-months of professional staff time were to have been devoted to the activity; seminars, workshops, and conferences were to have been held. To a large extent, this activity may have been ignored because of the restrictions on travel, but one result of the failure to provide technical and advisory services was that only policymakers seemed to benefit directly.

The weaknesses of the WFS analytical reports will become more apparent as other organizations begin to produce the kind of work that has been contemplated. The team agrees with the PRB that staff should be allowed to work with WFS (and, presumably, CPS and other) tapes, and not just the

published reports, when preparing analyses, providing, however, that the AID thinks the PRB should use its staff and time to pursue this kind of analytical research. The team recommends that the AID carefully consider the capabilities of other organizations to conduct and report on this line of research. If the PRB is asked to do special reports, it should try to combine popularly written reviews with important research that has appeared only in professional journals. The PRB's own Population Bulletin might be a model. However, care should be taken to avoid duplicating others' publications, including those of the contractors (e.g., the Johns Hopkins population information program).

Extension of the Contract

The team supports the PRB's request for a one-year extension of the contract, but it recommends that certain modifications be made. The AID, the PRB, and the public would be better served if the scope of work for the renewal contract were made more realistic. It should, for example, reflect the AID's real expectations of the PRB. It would also be helpful, to future evaluators at least, to make a written list of any changes in expectations; these could be considered revisions of the scope of work.

If a new contract is negotiated, support should be provided to monitor and update the data base, maintain and extend to a larger number of users the CPR's computerized system, continue publishing and distributing wall charts that have been improved, translated into other languages, and targeted to more appropriate audiences, and meet the AID's ad hoc and special requests on time.

Use of Software

With specialized software, the PRB and the CPR might be able to collaborate on the application of the Apple computer technology to assist overseas AID missions (and, it should be added, statistical bureaus in LDCs) in data management and training. They might also be able to develop software to adapt the NAS demographic manual for use on the Apple computer. Such expansion, however, should not be undertaken unless the AID is prepared to develop and deploy a sales force to advertise widely the availability of the new packages and to train recipients to use the programs.

Proposal for Visiting Scholars

The team is not inclined to support the proposal for visiting scholars. Although the PRB has acquired competent demographers who can and should fulfill requests under the contract, it would not be cost-effective to

transform the PRB into an academic research institution, even one geared to action-oriented research. The team believes that it would be more effective to build on the PRB's capabilities to do those things which, historically, it has always done well: gathering population information from various sources, organizing data, and making information available in understandable language to the general public, policymakers, program managers, and academic institutions.

The team appreciates the fact that senior project staff who are interested in more challenging analytical tasks will not favor de-emphasizing academic work. Service to the AID is likely to remain the thrust of the contract. Professional judgment and expertise are required to monitor, compile, and select the data for specific requests. Analytical and research reports should be responses to expressed needs, and not gratuitous offerings to the profession.

APPENDICES

Appendix A

1980 ANNUAL REPORT OF THE POPULATION REFERENCE BUREAU

Population Reference Bureau, Inc.

Founded in 1929, the Population Reference Bureau is a private, nonprofit organization devoted to a broad program of education on population trends and their social and economic effects. It is guided by the belief that both individuals and governments are more apt to make sound decisions in the interests of society as a whole when they are fully informed about the influence of population growth and change on every facet of human life. The Bureau's work rests on the further belief that an impartial presentation of the facts is the most positive approach to public education.

PRB policy is determined by the President and a 24-member voluntary Board of Trustees elected to reflect a broad spectrum of interest and expertise. The current Board includes demographers, educators, media experts, business leaders, outstanding professionals in medicine, science, and other fields, specialists in international development, and representatives of other population organizations. The Board meets twice a year. An Executive Committee composed of seven Trustees meets during each of the remaining months.

Guidance for program activities is provided by a distinguished panel of 18 advisers who have national or international standing in population, demography, education, or the media.

The Bureau is supported by foundation grants, contracts, individual and corporate contributions, memberships, and sales of publications.

The *Population Bulletin* series, now in its 41st year, the annual *World Population Data Sheet*, the lively international news magazine *INTERCOM* and *INTERCOM in Spanish*, and special publications such as the *Population Handbook* and the new *U.S. Population Data Sheet* keep PRB members, policymakers, and the public informed about the most vital, up-to-date developments in population-related fields.

The Bureau's Population Education Department encourages schools and colleges to include population issues in their curricula by conducting training sessions in population studies for teachers and school administrators. The department

publishes the pop-ed newsletter *Interchange*, teaching modules, the PRB Chart Series, and other classroom materials in addition to distributing population and environmental films nationwide at low rental fees.

The development of the Demographic and Policy Analysis Department in January 1980 brought together the demographic research activities of the Bureau and broadened the scope of analysis of the policy implications of population issues. A new series of occasional papers, *Population Trends and Public Policy*, has been launched, and the Bureau distributes policy supplements for selected *Population Bulletins* and other briefing papers to a broad number of policy decision-makers.

The year was also particularly productive for the USAID-funded Compilation and Analysis of Population Data Project, which produced wallcharts on *World Fertility and Family Planning and Marriage*, a map of *World Demographic Patterns*, and the first of a new series of Reports on the World Fertility Survey.

The Library and Information Service, answering about 100 inquiries a week, provides speedy authoritative responses to questions about population and offers the resources of one of the world's most comprehensive collections of population-related materials.

PRB annual memberships are: individual, \$25; student, \$5; primary/secondary school educator, \$10; college educator, \$15; public, university, or school library, \$30; institution or firm, \$100; sustaining contributor, \$25-\$99; patron, \$100-\$499; sponsor, \$500 or more.

Contributions and bequests: PRB is a nonprofit, publicly supported organization. Contributions and membership fees are tax deductible. Bequests to PRB are deductible in computing Federal estate taxes. The most direct bequest can be made through a simple codicil to a will such as "I give and bequeath to the Population Reference Bureau, Inc., a nonprofit corporation of the District of Columbia, the sum of \$..." Legal counselors can offer suggestions of other appropriate methods of making a bequest.

Every gift to the Population Reference Bureau has an impact in stimulating greater world awareness of population problems and their consequences—and by stimulating this awareness, helps contribute to their solution.

President's Message:

Putting Information to Work Through New Technology

Recently one of our staff members displayed the dynamics of age and labor force structure on a modern minicomputer screen for the benefit of the China Study Tour Group on Population Information. These six experts, who will establish a Population Information Center in Beijing, were able to see graphically the impact of achieving a total fertility rate of one by 1990, which is a goal of the People's Republic of China. Later I learned that our minicomputer (on loan for a special project) can, through a simple linkup, "talk" to its counterpart at Georgetown University and, during the same week, I witnessed a demonstration of word processing in which a remarkably versatile typewriter was activated by this same small computer.

The exploding world of technology is literally putting information to work—and PRB is becoming part of the revolution.

Before we occupied our new headquarters building in 1977, one large room (50' x 50') on the fourth floor was used just to house a computer serving 25 branches of the National Bank of Washington. An independent ventilation system was needed to disperse heat generated by the computer, and the bank had to take special precautions to keep down dust and dirt. Today, the tasks performed by that computer can be handled by a machine that would sit comfortably on your living room coffee table.

Here at PRB we are in the process of putting computer power to work in a number of ways both to improve service to our members and to enhance our internal efficiency.

For example, on January 1, 1980, all the holdings of the Population Information Program (Popinform) at Johns Hopkins University became available on-line through the National Library of Medicine under a bibliographic retrieval system called Popline. Basically a health and family planning resource, Popline will soon add Popindex, an invaluable source of demographic information located at Princeton University. PRB is now a Search Center for Popline, which means we can assist researchers as well as the general public in obtaining bibliographic information on the 75,000 titles currently available.

Along with our minicomputer, the Bureau has access to terminals which provide a great range of demographic and population-related data from a variety of sources including the United Nations, the World Health Organization, The Population Council, the International Statistical Center of the Census Bureau, as well as important private agency programs.

An expansion of the computer system would prove extremely valuable, in addition to our own library collection, in responding to the 5,000 inquiries our staff receives each year. By programming a minicomputer with a range of basic data, demographers can respond quickly and accurately to questions which would otherwise require an excessive amount of time.

One of the ways we are calling attention to the potential of these new kinds of service is the Demographic Information Services Center (DISC). The DISC staff seeks out clients who need help in determining how demographic changes are affecting their businesses, educational institutions, or public sector operations. At the same time, DISC specialists "backstop" our Library and Information Service in answering the constant stream of inquiries reaching us each day.

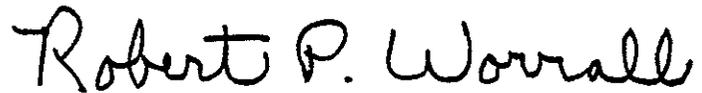
In the field of education, the possible uses of the minicomputer are endless. Many U.S. schools and an increasing variety of institutions in developing countries now have computer hardware. We understand, for example, that Katmandu, Nepal, has a "minicomputer club." PRB is learning more about educational packages that allow interaction between the student and the computer and utilize small discs that can be easily mailed at low cost to any point in the world. These packages are tailored to the recipient's needs, using data that reflect local situations and programs that allow users to ask questions of the computer to learn more about population-related changes and their implications.

What about the future? One day PRB may be able to provide its publications directly to your home through a computer-based printer, provide educa-

tional packages on discs for use at local meetings through hand-carried minicomputers, and conduct searches of major population-related bibliographies, then send abstracts or full text copies of relevant works to your office electronically.

In addition to these potential new services to members, the Bureau could benefit internally in a number of ways from these new technologies. For example, we now pay an outside computer firm a substantial amount to keep our mailing list up to date. This could easily be one of the many tasks an in-house computer could assume. Our accounting procedures, at this time entirely manual, could be substantially computerized. The library, also currently a manual operation, could benefit immensely from electronic methods. Perhaps the greatest potential efficiency lies in the "word processing" field. Great savings could be made in typesetting and printing costs.

The Bureau during its first 52 years has been tied very closely to the print medium. The time has come to use exciting new modes of providing information as well. The future means putting information to work through new technology.



Robert P. Worrall

Treasurer's Report

During 1980, our plan to bring expenses in line with revenues was successful and PRB achieved its first surplus since 1974. Recent financial activity is summarized in the following table.

Year	Total revenues	Total expenditures	Surplus (Deficit)	Fund balance end of year
1980	\$1,226,342	\$1,218,100	\$8,242	\$ 265,013
1979	1,103,714	1,320,501	(216,787)	256,771
1978	596,503	930,813	(334,310)	473,558
1977	733,279	966,305	(233,026)	807,868
1976	599,111*	644,854	(45,743)	1,040,894
1975	642,435	694,762	(52,327)	143,244

*Excludes \$963,280 bequest

In mid-1979, PRB's Trustees took a number of actions to permit the Bureau to reduce the pattern of deficits which had developed since receiving a \$963,280 bequest in 1976:

- Dr. Robert P. Worrall was named President.
- An aggressive program to identify new funding sources, particularly those in the \$5,000-\$50,000 range, was implemented to provide a base for 1980 and future years. Success was achieved in 1980, as a number of new foundations and individual donors were identified, permitting essentially a "break even" year and reversing prior deficits.
- Contracts with the U.S. Agency for International Development, the United Nations Fund for Population Activities, the United Nations Children's Fund, and others, have been productive and appropriate additional contracts will be sought where PRB's overall objectives are fostered by such sponsored projects.
- PRB's Demographic Information Services Center (DISC) has been organized to respond to the needs of a wide range of private and public sector clients for demographic information. In addition, the Bureau, through a sub-contract, is providing demographic support to a project of the U.S. Department of Health and Human Services.

The Population Reference Bureau continues its status as a nonprofit organization exempt from Federal income taxes under section 501 (c) (3) of the Internal Revenue Code and further as a publicly supported organization under Section 509 (a) (1). Thus, PRB may continue to receive contributions and bequests with charitable deductions available to donors.



Bert T. Edwards

Financial Statement

Population Reference Bureau, Inc.
Revenues, Expenses, and Changes in Fund Balances for the Years Ended
December 31, 1980 and December 31, 1979

Revenues	1980	1979
Contributions	\$ 168,431	\$ 278,703
A.I.D. Contracts—U.S. Government	489,142	472,325
Grants and contract income	238,492	70,398
Dues	95,685	96,383
Sales of publications	99,890	64,991
Interest and dividends	8,893	7,415
Rent	115,337	106,937
Miscellaneous	10,472	6,562
Total revenues	<u>1,226,342</u>	<u>1,103,714</u>
Expenses		
Salaries	423,696	440,445
Payroll taxes, employee benefits, etc.	123,089	135,261
Professional fees	35,705	65,320
Supplies	12,158	20,173
Telephone	10,279	13,393
Postage and shipping	75,584	76,071
Occupancy (net of repairs reimbursed by tenants)	39,065	28,445
Equipment rental	869	1,298
Travel	14,965	32,692
Printing and publications	198,555	197,838
Interest	94,456	96,503
Depreciation	36,387	35,763
Real estate tax	34,133	23,387
Litigation settlement	-0-	50,000
Sub-contract	105,343	85,992
Miscellaneous	13,816	17,920
Total expenses	<u>1,218,100</u>	<u>1,320,501</u>
Excess (Deficiency) of revenue over expenses	8,242	(216,787)
Fund Balance, beginning of year	<u>256,771</u>	<u>473,558</u>
Fund Balance, end of year	<u>\$265,013</u>	<u>\$256,771</u>

Note: The financial data shown above have been summarized by PRB from its financial records. A copy of the report of PRB's independent certified public accountants is available at PRB's offices.

Appendix B

MEMORANDUM, LEVIN TO BRACKETT

Appendix C
COST REIMBURSEMENT CONTRACT

COST REIMBURSEMENT TYPE CONTRACT

AGENCY FOR INTERNATIONAL DEVELOPMENT
 NEGOTIATED CONTRACT NO. AID/DSPE-C-0024

NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11225 AMOUNT (Obligated): \$690,000
 \$1,137,849

CONTRACT FOR: Project No. 932-0649

Compilation and Analysis of Population Data

ISSUING OFFICE (Name and Address)	CONTRACTOR (Name and Address)
PE Branch Central Operations Division Office of Contract Management Agency for International Development Washington, D.C. 20523	Population Reference Bureau, Inc. NAME 1337 Connecticut Ave., N.W. STREET ADDRESS Washington, D.C. 20036 CITY, STATE AND ZIP CODE

ADMINISTRATION BY	COGNIZANT SCIENTIFIC/TECHNICAL OFFICE
Issuing Office	DS/POP/DEMO
MAIL VOUCHERS (Original & 3 copies) TO: Central Services Division Office of Financial Management Agency for International Development Washington, D.C. 20523	ACCOUNTING AND APPROPRIATION DATA PIO/T NO. 3287548 APPROPRIATION NO. 72-1181021.4 ALLOTMENT NO. 844-36-099-00-81-81
EFFECTIVE DATE 10/1/78	ESTIMATED COMPLETION DATE 9/30/81

TYPES OF BUSINESS (CHECK APPROPRIATE BOX(ES))

<input type="checkbox"/> SOLE PROPRIETORSHIP	<input type="checkbox"/> SMALL BUSINESS
<input type="checkbox"/> PARTNERSHIP	<input type="checkbox"/> LABOR SURPLUS AREA
<input type="checkbox"/> JOINT VENTURE	<input checked="" type="checkbox"/> Nonprofit
<input type="checkbox"/> CORPORATION, INCORPORATED IN THE District of Columbia	

The United States of America, hereinafter called the Government, represented by the Contracting Officer executing this contract, and the Contractor agree that the Contractor shall perform all the services set forth in the attached Schedule, for the consideration stated therein. The rights and obligations of the parties to this contract shall be subject to and governed by the Schedule and the General Provisions. To the extent of any inconsistency between the Schedule or the General Provisions and any specifications or other provisions which are made a part of this contract, by reference or otherwise, the Schedule and the General Provisions shall control. To the extent of any inconsistency between the Schedule and the General Provisions, the Schedule shall control.

This Contract consists of this Cover Page, the Schedule of 37 Pages, including the Table of Contents and the General Provisions (form AID 1420-41C, dated 7/1/76) and the Additional General

NAME OF CONTRACTOR	UNITED STATES OF AMERICA AGENCY FOR INTERNATIONAL DEVELOPMENT	Provision: (Form AID 1420-41D dated 7/1/76).
Population Reference Bureau, Inc. BY (Signature of authorized individual)	BY (Signature of Contracting Officer)	
TYPED OR PRINTED NAME <i>Robert M. Arden</i>	TYPED OR PRINTED NAME Gerald P. Gold	
TITLE <i>Director</i>	CONTRACTING OFFICER	
DATE <i>9-26-78</i>	DATE	

SCHEDULE
COST REIMBURSEMENT CONTRACT

Contract No. AID/DSPE-C-0024

TABLE OF CONTENTS

SCHEDULE

The Schedule consists of this Table of Contents and the following

Articles:

- ARTICLE I - STATEMENT OF WORK
- ARTICLE II - TECHNICAL DIRECTIONS
- ARTICLE III - KEY PERSONNEL
- ARTICLE IV - PERIOD OF CONTRACT
- ARTICLE V - ESTIMATED COST
- ARTICLE VI - BUDGET
- ARTICLE VII - ESTABLISHMENT OF OVERHEAD RATE
- ARTICLE VIII - PERSONNEL COMPENSATION
- ARTICLE IX - ADDITIONAL PROVISIONS
- ARTICLE X - ALTERATIONS IN CONTRACT

GENERAL PROVISIONS

The General Provisions applicable to this contract consist of form AID 1420-41C entitled "General Provisions - Cost Reimbursement Type Contract" dated 7/76, and form AID 1420-41 D entitled "Additional General Provisions - Cost Reimbursement Contract" dated 7/76.

ARTICLE I - STATEMENT OF WORKA. Objective

The objective of this contract is to provide technical support to AID and selected developing countries in compiling, accessing, evaluating, and analyzing demographic and family planning data generated by censuses, surveys, and vital registration systems for use in evaluating AID-supported population programs.

B. Description of Work

The contractor shall maintain a professional staff and adequate administrative support to perform the following services:

1. Compilation of demographic and family planning data. The contractor shall compile data for demographic and family planning variables as follows:

a. Fertility

- (i) Number of births by age of mother and parity from registration and/or sample registration systems.
- (ii) Number of children ever born by age of mother from census/survey questions.
- (iii) Number of children born in the 12 months (or other time period) prior to a census or survey.
- (iv) Age of mother at first and most recent birth.

b. Mortality

- (i) Number of deaths by age and cause (from a registration system).
- (ii) Number of children ever born or born in a fixed period who have died (from a census/survey).

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- (iii) Children surviving (from a census/survey).
- (iv) deaths in a household during a fixed period (from a census/survey).

c. Nuptiality

- (i) Number of marriages by age of parties and order of marriages.
- (ii) Age at first marriage (from a census/survey).
- (iii) Proportion single.
- (iv) Singulate mean age at marriage.

d. Population size and composition

- (i) Number of persons by age, sex, and ethnicity (from censuses, surveys, and estimated).
- (ii) Same data as in (i) for subnational areas such as urban/rural, urban agglomerations, states, departments, governates, etc.
- (iii) Population composition by selected socioeconomic variables such as literacy, occupation, and incomes.

e. Family Planning

- (i) Data on knowledge, availability, and use by method, parity, age, marital duration and socio-economic status.
- (ii) Number of new and existing acceptors by age and method.
- (iii) Continuance of use.
- (iv) Desired family size; ideal family size; desire for more children by age and parity.
- (v) Expenditures and fees for family planning programs.
- (vi) Son preference, attitudes toward family planning.
- (vii) Indices of government commitment to family planning.

f. The contractor may also compile data relating to other variables such as literacy, educational attainment, minimum legal age at marriage, percent urban, total and per capita GNP, dependency ratios, indices of physicians, hospital beds, and other health conditions with prior approval of the AID/CTO.

g. In assembling the above data, the contractor shall utilize existing data sources such as (i) AID-sponsored data collection and analysis projects currently under way (e.g., the World Fertility Survey, the National Academy of Science Study); (ii) established data centers (e.g., the East-West Population Institute, the UN; and (iii) developing country statistical offices.

The majority of data compilation from specific country statistical offices will be performed via correspondence or through second party sources. The Contractor shall coordinate with other organizations and projects in the procurement of data from developing countries. Every effort will be made to obtain the needed data from personnel of other organizations who will be traveling to these countries on official business. It is anticipated that much of the data in developing countries can be obtained by personnel from AID, the World Bank, NAS, UN, and other organizations who are traveling to these developing countries in the course of official business or who are currently working in those countries and can send the data by mail. If these alternatives are insufficient, the Contractor may visit these data sources to obtain the data, subject to AID travel regulations. If the basic data are unavailable, the Contractor may prepare or obtain estimates.

h. The countries for which demographic and family planning data shall be compiled are as follows:

<u>ASIA</u>	<u>LATIN AMERICA</u>	<u>AFRICA</u>	<u>NEAR EAST/NORTH AFRICA</u>
Bangladesh	Bolivia	Ghana	Afghanistan
Nepal	Mexico	Nigeria	Morocco
Philippines	Jamaica	Kenya	Tunisia
Thailand	Colombia	Tanzania	Egypt
Indonesia	Costa Rica	Botswana	Turkey
India	El Salvador	Lesotho	
Pakistan	Panama	Swaziland	
Korea	Peru	Liberia	
	Ecuador	Mauritania	
	Brazil	Mali	
	Honduras	Chad	
	Guatemala	Upper Volta	
	Nicaragua	Niger	
		Sudar	
		Zaire	
		Cameroon	

Data for other countries may also be compiled as mutually agreed by AID and the Contractor, provided resources permit.

2. Data storage, accessing, and analysis system. The contractor shall design and implement a computerized system for: (a) storing and retrieving demographic and family planning data; (b) editing and tabulating these data sets; (c) applying commonly accepted demographic and statistical evaluative and analytic techniques to such data (e.g., direct and indirect standardization, own-children analysis, cohort analysis, reverse-survival techniques, Brass methodology, etc.); and (d) displaying basic, estimated, and/or derived demographic and family planning data in tabular and/or graphic formats.

The Contractor shall store all data compiled under this contract on computer disk files, the specifications for which will be developed in close consultation with the AID/CTO. For easier retrieval and display, data will be

arranged in subfiles according to two or three dimensions, such as a country by variable file for display of current cross sections by a particular variable or "profiles" of a country or region by several variables. If software programs are not available, the Contractor shall develop custom programs for retrieving, editing, and tabulating the data using "keywords" and/or key phrases. The data files shall be organized so as to permit ready input into standard statistical packages such SAS, SPSS-G or H, and others.

The overall system will provide two levels of retrieval:

- a. rapid retrieval for display purposes, (e.g., tables not requiring more than simple crosstabs), and
- b. more complex tabulations and analyses.

For the first retrieval and display method, software will be modified or developed to provide display on a CRT or printer, (e.g., a country profile or a comparison of TFR, CBR by region, countries, or levels of a single variable, or controlled by other variables). This would be achieved in conjunction with AID's assessment of current data needs in budget, presentations, program planning, and evaluation. For the second method, more reliance will be placed on existing software packages and other routines to format the data according to the input requirements of SAS, SPSS, and other packages.

For structuring the raw data into subfiles and for preparing tables the Statistical Analysis System (SAS) will be utilized.

For processing raw data reliance will be placed primarily on programs developed by the International Statistical Programs Center and by the National Academy of Sciences.

c. The Contractor shall support standard software, such as, Fortran, PL/1 and Cobol along with IBM utility programs for managing and processing data. The Contractor shall also make available a full compendium of canned statistical software packages for batch processing, including BMDP, SAS and SPSS.

d. In addition to this software, the Contractor shall maintain computer programs for demographic analysis designed specifically to analyze the quality of population data as well as to calculate and estimate demographic parameters. These programs will provide the capability for estimating levels and trends of fertility and mortality from census and survey data, projecting population by age and sex, applying the El Badry correction for misreporting in children ever born data, constructing model or empirical life tables, and performing stable population analysis. These programs also allow for curve fitting, smoothing, and graduating data. The program for estimating fertility and mortality and the program for life-table analysis utilize techniques developed by Brass, Coale and Demeny.

e. To the extent possible, most computer work will be done on AID's computer via telephone hookup with the CRT/terminal hookups at AID and the Contractor's offices.

The contractor shall purchase CRTs and 1200 BAUD hard copy terminals for AID and itself. Use of the Contractor's computer is suggested for development and testing with formatted files transferred to, and maintained on, AID's computer.

f. Suggested timetable:

Year I: Compilation and storage of basic data, subroutines designed for link to standard packages, files transferred to AID when completed for analyses, design and maintenance of file documentation.

Years II and III: Implementation of new capabilities as may be requested by AID with expansion of file to accommodate new data.

g. The Contractor shall use its computer primarily for the development of software and programming, provided that, total CPU time used will be a comparatively small proportion of the overall EDP effort.

3. Demographic estimates, analyses, and reports. The Contractor shall prepare country or regional estimates, analyses, and/or reports concerning demographic and family planning topics, as requested by the AID/CTO. These materials will focus on estimates of population size and composition, fertility, mortality, nuptiality, and family planning knowledge, availability, and use. The preparation of these reports will involve a thorough review of the literature on selected specialized topics; the identification and summarization of published and unpublished research; presentation of the findings of national or local surveys, censuses, and other data systems; and the design of tables, charts,

and other graphic formats for presenting demographic and family planning data. Data generated as a result of these analyses or reports will be displayed both in tabular and graphic form utilizing innovative and attractive graphic techniques (e.g., histograms, pie and bar charts, maps with color shadings or cross-hatchings, and possibly three-dimensional maps and other graphics produced by computer). The sources of the data and the methods employed in obtaining the various demographic and family planning estimates will also be discussed in the materials, as appropriate. Other topics may be included as mutually agreed by the AID/CTO and the Contractor, provided they fall within the budgetary and personnel constraints of the contract. The specific format of these materials will be determined jointly by the AID/CTO and the Contractor.

The selection of demographic methods to be applied in preparing these materials will depend upon several factors for each country. Chief among these factors will be (a) the extent of data availability (b) the quality of the data obtained (c) specific demographic measures, such as the crude birth rate or total fertility rate, required at that stage of the analysis. It is anticipated that the methods used will be those which have been proven reliable in prior research. The following methods will be among those utilized in the analyses:

- a) Stable and quasi-stable population analysis.
- b) The method of estimation of intercensal age specific fertility rates from data on children ever born taken from two censuses (or surveys) approximately five or ten years apart developed by Arretx.
- c) Brass fertility method
- d) Own children method - a method to produce age-specific fertility

rates which relies upon Census data.

- e) The Bogue-Palmore regression method.
- f) Other methods - child mortality estimates; growth-balance method; adult mortality estimation from survival of mother/first husband.

In implementing these methods, existing computer programs will be utilized to the extent possible.

4. Some examples of the estimates and analyses to be prepared follow:

- a) Crude birth and death rates (including standardized); age and cause specific death rates
- b) Total fertility rate, age and parity-specific fertility rates (also for married women)
- c) Gross and net reproduction rates; "population momentum" factors
- d) Reproduction survival ratio
- e) Intrinsic growth rate
- f) General fertility rate (including standardized)
- g) Acceptors per 1,000 women (total and ever-married) for existing and new acceptors and by method; continuation rates by age, parity, method and program.
- h) Life table values (derived from life table calculated for each country); IMR
- i) Comparison of registered births with children ever born data.
- j) Analysis of age distributions for evidence of age mis-statement using stable population techniques

- k) Review of literature to determine status of past research in adequacy of vital registration, quality of census and surveys.
- l) Comparison of registered deaths with those expected in stable populations.
- m) Analysis of a range of estimates of demographic parameters both derived by the study staff and appearing in the work of other authors in order to evaluate the confidence regarding trends which can be placed in conclusions drawn from the estimates.

During the contract period, the Contractor shall provide up to 18 person-months of demographic/statistical services to perform the foregoing tasks.

5. In addition to the preparation of the foregoing estimates and analyses, the Contractor shall also prepare the following materials in close consultation with AID:

a. World Fertility Patterns Chart

This chart is modeled on the two-sided World Fertility Patterns Chart produced by AID's Office of Population. The chart will portray age-specific fertility rates in both graphic and tabular form, listing the sources from which the data were obtained, and such other information as may be appropriate such as TFR, CBR, etc. The chart will be approximately the same size as past charts, but in two colors. All existing data sources will be examined to determine the most reliable and current set of age-specific fertility rates for each country, which will be graphically displayed along with comparable estimates for earlier years. This chart will cover all countries for which data are available and will be updated as new data become available. At

At minimum, the chart will be updated once a year. Age-specific fertility rates for each country will be displayed on the reverse side of the chart, with detailed data sources given for each country.

b. World Demographic Estimates

The Contractor shall also prepare, on an annual basis, world demographic estimates for all countries and regions of the world. This table will show current estimates of total population, births, deaths, crude birth and death rates, rates of natural increase, doubling times, population under 15, life expectancy at birth, infant mortality rate, urban population, and GNP per capita. At least once during the three year project the table will also show trend data for one or more previous years so that changes over time may be observed for each country and region, (e.g., showing the estimated levels for each variable for the years 1968 and 1978).

c. Contraceptive Prevalence Estimates

The Contractor shall prepare a report showing contraceptive prevalence or use rates by method and various background characteristics such as age, parity, education, income level, occupation, urban-rural residence, and marital duration. The report will be updated at least annually. When possible, time series data will be presented showing changes in these rates over time. The report will provide estimates for all developing countries for which data are available, and where appropriate, for provincial or other sub-national areas. The data for this report will be drawn from the World Fertility Survey, the Contraceptive Prevalence Survey, and other relevant sources such as KAP studies, family planning reporting systems in each country, and family planning journals.

The report will be approximately 20 pages in length, including tables and graphics. It will include a removable wall chart which will present contraceptive prevalence in graphic form for every developing country for which data are available. The chart will be in two colors and will be a part of each report.

d. World Fertility Survey Analyses

The Contractor shall prepare at least six reports summarizing World Fertility Survey results during the contract period. Two reports will be prepared in the first year, using the country reports that are already published as a basis for analyses (i.e., Pakistan, South Korea, Nepal, Sri Lanka, Thailand, Colombia, Panama, Indonesia, Fiji, Dominican Republic and Malaysia). These reports will summarize such findings as the percentage of respondents wanting no more children, knowledge of family planning availability, knowledge of family planning methods, and fertility levels and trends cross tabulated by income level, urban-rural residence, and age at first marriage). The application of other analytical techniques to these data will be determined jointly by the Contractor and AID. The reports will be prepared for groups of countries for which data are available so as to facilitate cross-cultural comparisons. The countries included in these analyses will be determined jointly by AID and the Contractor, but will generally come from the list given in Section B.1.h. These reports will be short, approximately 20 pages in length, emphasizing graphic presentations. The reports will be organized and presented so that they may be easily understood and utilized by non-technical audiences.

Up to 2500 copies of the World Fertility Patterns chart, World Demographic Estimates table, Contraceptive Prevalence report, and World Fertility Survey summary reports, will be prepared and distributed to organizations and personnel working in population, family planning, and related fields in accordance with guidelines established jointly by AID and the PRB.

6. Overseas Technical and Advisory Services

The Contractor shall be responsible for providing overseas technical and advisory services relating to the compilation, storage and access, evaluation, and/or analysis of demographic and family planning data. During the contract period, the Contractor shall provide these services for up to ten developing country statistical organizations, which may request such services through AID. It is anticipated that 27 person-months of professional staff time will be required for overseas technical and advisory services. If the allotted time is not needed, however, the Contractor shall utilize the balance remaining for the three other activities of the project (i.e., (1) compilation of demographic and family planning data; (2) data storage, accessing and analysis; and (3) preparation of demographic estimates analyses and reports. In implementing these services the Contractor shall make project staff members and outside technical consultants available to work overseas collaboratively with developing country technical personnel on matters falling within the scope of the project and budget restraints.

A major portion of the overseas technical advisory services will involve the participation of host country personnel in seminar programs and workshops such as those conducted by the East-West Center in Hawaii, the UN,

CICRED (regional conferences), and other appropriate conferences identified by AID. It is expected that these seminars, conferences, and workshops will provide training for developing country personnel in the collection and use of demographic and family planning data, the processing and storage of data on computer, the management of statistical systems, and the methods of estimation, refinement, and evaluation of demographic and family planning measures.

C. Reports

1. The Contractor shall prepare semi-annual progress reports listing the project activities to be undertaken during the contract period and describing the status and progress made during the reporting period in completing each of these activities. The report will be prepared at the end of each six-month period following the effective date of contract. The precise format of these reports will be determined jointly by AID and the Contractor. Five copies of each report will be sent to the AID/CTO with one copy to the AID/C.O. These reports shall include information on data processing activities and software development.

2. The Contractor shall prepare and submit to the AID/CTO monthly expenditure reports showing current and cumulative information relating to actual and accrued project expenditures. The precise format and content of these reports will be established jointly by AID and the Contractor. ADP activities and related expenditures shall be included as a separate line item.

3. Other reports may be prepared as mutually agreed by AID and the Contractor.

4. The Contractor shall submit two copies of a trip report to the AID/CTO, for all overseas travel within twenty (20) days of completion.

5. The reports required above supersede those listed in Section 16 of General Provisions with the exception of subheadings b, c, and e.

D. Special Provisions

1. The selection of countries for services described in the Scope of Work shall be made by the AID/CTO and the Cognizant Mission.

2. All international travel and travel to conferences supported under this project must be cleared in advance by the A.I.D. Cognizant Technical Officer (CTO) and the USAID Mission. International trips should be scheduled so as to cover more than one country per trip. Travel requests will normally be submitted to the AID / CTO at least 30 days before travel is to begin in order to complete clearance procedures with AID Missions and host countries.

3. A.I.D.'s computer facilities shall be used for any domestic data processing requirements unless the CTO and SER/DM specifically authorize outside computer use.

4. Copies of all correspondence pertaining to substantive project matters between the Contractor and foreign organizations shall be forwarded to the AID/CTO.

5. When specialized services in support of project activities are required, but are not available within the contracting organization, they may be subcontracted subject to the prior written approval of the Cognizant Technical

Officer and the Contracting Officer. Copies of all subcontracts will be sent to the AID/CTO and the AID Contracting Officer.

6. The Contractor shall cooperate in project evaluations at the end of the first 18 months of the contract and at the end of the project. Project evaluation costs will not be paid out of this contract, but the Contractor will be expected to make available any information determined necessary for this evaluation and to provide a review of his or her experience and progress in providing the services required by the contract. At least four weeks in advance of such evaluation, the Contractor will be advised by the AID/CTO of the specific topics and issues to be addressed.

7. The Contractor may publish data, research findings, or other materials generated as a result of project activities, acknowledging Office of Population support subject to the requirements of the contract's General Provisions. Distribution of publications supported by the Office of Population shall follow guidelines established jointly by the Office of Population and the Contractor.

8. The Contractor may use project funds to distribute project generated publications to family-planning, census, survey, vital registration, and other technical personnel or organizations in developing countries. The Contractor may also use project funds to distribute selected project-generated publications to organizations seeking to improve the statistical infrastructure of developing countries. (See Budget, Article VI.)

ARTICLE II - TECHNICAL DIRECTIONS

Performance of the work hereunder shall be subject to the technical directions of the cognizant A.I.D. Scientific/Technical Office indicated on the Cover Page. As used herein, "Technical Directions" are directions to the

Contractor which fill in details, suggest possible lines of inquiry, or, otherwise complete the general scope of the work. "Technical Directions" must be within the terms of this contract and shall not change or modify them in any way.

ARTICLE III - KEY PERSONNEL

A. The key personnel which the Contractor shall furnish for the performance of this contract are as follows:

Dr. Sergio-Diaz-Briquets - Project Director
Dr. Robert W. Gardner - Deputy Director

B. The personnel specified above are considered to be essential to the work being performed hereunder. Prior to diverting any of the specified individuals to other programs, the Contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. No diversion shall be made by the Contractor without the written consent of the Contracting Officer; provided, that the Contracting Officer may ratify in writing such diversion and such ratification shall constitute the consent of the Contracting Officer required by this clause. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

ARTICLE IV - PERIOD OF CONTRACT

A. The effective date of this contract is October 1, 1978 and the estimated completion date is September 30, 1981.

ARTICLE V - ESTIMATED COST

The total estimated cost of this contract to the Government is \$1,137,849.
The amount obligated is \$690,000.

ARTICLE VI - BUDGET

Within the Total Estimated Cost set forth below, the Contractor may adjust
Line Item amounts as reasonably necessary for performance of this Contract,
except that the amount obligated may not be exceeded.

<u>Category</u>	<u>Fr: 10/1/78</u> <u>To: 9/30/79</u>	<u>Fr: 10/1/79</u> <u>To: 9/30/80</u>	<u>Fr: 10/1/80</u> <u>To: 9/30/81</u>	<u>Total</u> <u>Total</u>
Salaries	\$ 91,623	\$ 97,119	\$102,946	\$ 291,688
Consultants	6,000	6,000	6,000	18,000
Fringe Benefits	29,319	31,078	32,943	93,340
Overhead	62,377	57,718	60,007	180,102
Travel & Transportation	36,590	54,150	53,033	143,773
Other Direct Cost	35,004	36,995	39,212	111,211
Equipment, Vehicles, Materials & Supplies	21,190	7,791	8,259	37,240
Subcontracts	<u>81,037</u>	<u>87,852</u>	<u>93,606</u>	<u>262,495</u>
Total	\$363,140	\$378,703	\$396,006	\$1,137,849

Funds in the amount of \$690,000 are currently available. Subject to availability, additional funds will be made available (see the Article of the Schedule entitled "Estimated Contract Cost and Financing" and the clause of the General Provisions entitled "Limitation of Funds"). Total contract expenditures shall not exceed the grand total of the funds available. Within the grand total, the Contractor may adjust Line Item amounts as reasonably necessary for the performance of the work.

The Contractor also agrees to furnish data which the Contracting Officer may request on costs expended or accrued under the Contract in support of the budget information provided herein.

Appendix D

SCOPE OF WORK FOR EXTENDED CONTRACT



POPULATION REFERENCE BUREAU, INC.

1337 CONNECTICUT AVENUE N.W., WASHINGTON, D.C. 20036
(202) 785-4664

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SCOPE OF WORK

One-Year Extension, Contract AID/DSPE-C-0024

Compilation and Analysis of Demographic and Family Planning Data

A. Objective

The objective of this extension corresponds with that of the original contract: to provide technical support to AID and selected developing countries in compiling, accessing, evaluating, and analyzing demographic and family planning data generated by censuses, surveys and vital registration systems for use in evaluating AID-supported population programs.

B. Compilation and Analysis of Data

The Population Reference Bureau will continue during the contract extension to expand compilation of data on demographic and family planning variables stressing fertility, mortality, nuptiality, population size and composition, and family planning. As appropriate and with the concurrence of AID, the Bureau will also compile data on factors affecting demographic change and family planning acceptance including but not limited to literacy, educational attainment, minimum legal age at marriage, percent urban, total and per capita G.N.P., dependency ratios, incidence of physicians and nurses, hospital beds and other health indices.

The Bureau will continue the data maintenance phase initiated after the bulk of the data sources currently in the system were acquired. Maintenance activities will include adding new data sets -- whether in print or computer tapes -- as they become available and incorporating new demographic and family planning survey data tapes (WFS, CPS, etc.).

Additional work is anticipated in the development of graphic data displays applicable to but not limited to the Apple micro-computer. The attached budget allows for acquisition of some new equipment such as X-Y plotters to provide for generation of graphic presentations directly from data stored or manipulated through any of the three computer systems now accessible to the project. Ideally the new equipment should be capable of producing camera-ready graphs and charts. The budget includes funds for the separate purchase of this equipment for both the contract and subcontract.

Funds are also designated for the purchase of specialized software to enable the Bureau and the subcontractor to collaborate on applications of the Apple computer technology to assist overseas USAID missions in data management and for clearinghouse and training functions. These packages will also be used in conjunction with data sets provided to the missions by the contractor. Both the data sets and the software packages will be financed directly by the contract, thus increasing flexibility and minimizing paper work.

Another major goal to be achieved during the contract extension period refers to an effort to develop the necessary software to adapt the demographic manual prepared by the Committee on Population and Demography of the National Academy of Sciences for use with the Apple computer. These programs in their original format are already accessible to the project. Their adaptation to the Apple system will require substantial work given the different specifications and capabilities of the micro-computer versus the larger computers for which this software was designed. An important associated task will be the preparation of a companion manual to assist with the use of the software in the Apple computer. This may include a self-contained new version of the manual that could be used with or without the Apple but that will emphasize a less technical and more readily comprehensible text for non-specialized users. It is anticipated that a highly trained professional familiar with the NAS package will be hired to assist with the development of the new software and the accompanying manuals. The budget provides for appropriate translation of these publications.

The budget also provides for the appointment of a Visiting Scholar for a period of 12 months. Assuming the availability of a qualified expert in one of the recognized methods of fertility determination, e.g., own-child technique, the Bureau's capacity in advanced methods of demographic analysis will be enhanced. It is anticipated that the Visiting Scholar will be responsible for one of the two special reports and as a consultant on the Handbook of Incomplete Data Analysis described above.

As a direct result of the increased sophistication of the project staff augmented by the computer-related equipment and procedures described above, the Bureau will be able to provide a greater range of sound technical assistance in demographic analysis.

C. Projected Publications

The following publications will be produced during the contract extension period:

1. "World Fertility: Age-Specific Rates" chart. Sufficient new data will be available to justify a revised edition in 1982. Certain design improvements will be made to allow for quicker location of particular countries and easier interpretation of rate changes.
2. "Population Dynamics of the World" chart. The enthusiastic reception of this publication warrants a 1982 revision and reprint. Additional data should allow the inclusion of more information, particularly on contraceptive use.
3. "Fertility and the Status of Women" chart. The utility of the second version suggests that it be revised, updated and issued again in 1982.
4. "World Population Data Sheet." Distribution will be expanded in Asia, the Middle East and Africa.
5. Special Reports. The PRB will prepare two detailed Special Reports dealing with various aspects of fertility and contraceptive usage in developing countries. Senior Demographers will be the major authors of these Reports. One report will deal specifically with change in fertility attitudes and behavior as well as contraceptive usage in sub-Sahara Africa. The other topic will be determined in consultation with AID officials. Emphasis will be given to the wealth of emerging data on contraceptive prevalence. These Reports will not be limited to published WFS papers. Permission will be sought to use some tapes for in-depth analyses of the specific topics to be decided upon. The Bureau will rely on contraceptive prevalence surveys as well as other relevant sources in addition to the WFS in preparing these Reports.

The Budget includes support for the rental of word processing equipment necessary to improve the Bureau's efficiency in processing manuscripts for these publications as well as to enhance the presentations of analysis and interpretations on behalf of the Office of Population. Costs of translation, handling and distribution of publications produced in the contract year extension are included in the budget.

D. Demographic Analysis Services to AID

PRB will provide "ad hoc" services including liaison with the Agency, with other AID-supported projects and programs and

with the population community at large. In addition to the types of services performed during the first three years of the contract, to better assist AID, the PRB will:

1. develop the capability to prepare computerized graphic presentations, as needed by AID, and as described in "B" above;
2. prepare and publish a new Handbook on Incomplete Data Analysis as described earlier. Such a Handbook, while based in part on the NAS Manual, will be limited to discussions and explanations with numerous clear examples of the basic relevant demographic tools, such as the "own children" method. In addition, instructions on how to use computer programs to derive this information will be explained clearly and concisely. The objective is a simplified presentation readily useable with little difficulty by practitioners in developing countries.

June 19, 1981

BUDGET

Salaries	\$171,339	\$171,339
Consultants	10,000	10,000
Fringe benefits - 30% of salaries	51,401	51,401
Overhead - 60%	102,803	102,803
Travel - Out of town	20,000	
- Insurance	4,000	
- Local travel	360	
- Moving expenses	<u>5,000</u>	29,360
Other direct costs		
- Office supplies	1,651	
- Xerox	1,000	
- Telephone	3,005	
- Research support	6,000	
- Dues and subscriptions	760	
- Repairs	<u>1,071</u>	13,487
Printing	58,504	58,504
Postage and distribution costs	11,534	11,534
Space rental	8,400	8,400
Equipment		
- rental	8,000	
- purchase	<u>10,000</u>	18,000
Subcontract	<u>121,552</u>	<u>121,552</u>
	<u>\$596,380</u>	<u>\$596,380</u>