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REVIEW AND EVALUATION OF
COMMUNITY AND FAMILY STUDY CENTER
UNIVERSITY OF CHICAGO

AID/pha/C-1108

A Report Prepared By:

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SUMMARY

The major purpose of this AID sponsored contract with the University of Chicago is to refine existing measurement techniques and invent new ones for determining the effectiveness (impact) of national family planning programs on demographic variables, especially fertility, and apply these techniques in selected LDC countries. The original 2 3/4 year contract was amended to allow for more specificity in the workscope to include among other activities, fertility trends in the past, projections in the future and projections for selected social needs as well as certain demographic variables.

To implement the purposes of the contract, the scope of work included six major project outputs: (a) measuring the impact of family planning on an assumed decrease in fertility (impact evaluation); (b) assisting Thailand and Indonesia with fertility surveys and detailed analysis of data (sub-national fertility surveys); (c) giving technical assistance to selected LDCs for fertility data analysis (technical assistance); (d) conducting workshops in techniques and application of evaluation techniques (training); (e) preparation of detailed evaluation techniques and computer programs for using them (manuals); (f) making estimates of past fertility trends and future projections for social needs (functional projections).

This contract, which is a modified and altered continuation of a previous contract, began on March 1975 and expires in March 1979. The total cost will be almost \$800,000. In general, the measurement techniques devised, data collected and analysis made shows that (a) fertility in Thailand, Indonesia (Java-Bali), and Colombia, among other countries, has greatly declined since 1968 and will continue to decline in the future; (b) the fertility decline is due to the effectiveness of national family planning programs which stimulates, at least in part, an "innovative diffusion" of contraceptive knowledge by providing contraceptive facilities; (c) the decline in some countries has preceded improved development in socio-economic wellbeing and, therefore, is not necessarily due to economic improvement since, for example, rural women in northern Thailand who are unaffected by economic improvement have shown an ever increasing inclination to use contraceptives which has resulted in lower fertility; (d) world fertility trends have taken a significant downward turn during the decade 1965-1975 and will continue in the future and that by the year 2000, world population will be at least one half a billion less than current projections; (e) because fertility and growth rates will decline, future "functional" projections for various social needs (food, education, health, etc.) must be revised to conform to the changing demographic structure.

The above conclusions are based on methodology, surveys, analytical techniques and data developed at the Center. These conclusions have considerable

implications for future population planning. However, their validity depends on the reliability of the methodology and data employed. Therefore, within the time limits set for this evaluation, some attention has been given to a critical review of the methodology used for arriving at these conclusions as well as describing and evaluating other scope-of-work activities such as training and technical assistance. Possible methodological or data errors can greatly alter the reliability of these conclusions.

For measuring family planning program impact on fertility, the basic methodology developed by CFSC consists of (a) an assumption that fertility has dropped within a ten-year period, (1965-1975), (b) a calculated estimate of the total amount of contraception required to account for this observed fertility decline (controlling for infertility, changes age of marriage, migration, etc., which are out-side program sources), (c) an estimate of contraceptive protection provided by a National Family Planning Program based on program data, (d) calculating the proportional difference due to the program from the total protection required to account for the observed fertility decline.

Possible sources of errors involve, for the most part, the data in-put used for each methodological step. For example, (a) estimates of the extent of fertility decrease for a given country vary considerably according to the data source and method used, albeit from regression equations, sample surveys, official statistics from international statistical agencies, etc.; (b) inaccurate or incomplete national family planning statistics used to estimate contraceptive protection due to a national family planning program; (c) omission of estimates of contraceptive sources and their effects on fertility reduction in the absence of a program; (d) an assumption that contraceptive continuation and failure rates are constant over all age groups.

As mentioned previously, CFSC contends that there is a trend towards lower world fertility rates. They state that many countries are experiencing decline. Their estimates are based in part on data from 56 countries with good censuses and vital statistics to derive regression equations that estimate direct fertility measures. These equations are applied to countries without good statistics. The estimates depend on accurate infant mortality rates which for some LDCs are rather unreliable. Moreover, data used for the regression equations are based in large part on western industrial nations and their applicability to LDCs may be questionable.

According to an unpublished critique by D. J. Hernandez of the University of South Carolina (American Population Association Meeting in Atlanta, Georgia, 1978), Mr. Hernandez states that it is not very logical to discuss the percent and number of countries having population decline but rather the proportion of population experiencing fertility decline. He asks the question, "Is a major portion of the LDC world population experiencing rapid fertility decline?" His answer is no. His conclusion is that only 9.1 - 15% of the population in LDCs have experienced fertility decline. He concludes that the net effect on fertility from family planning is less than 15%. One might add that the countries with "strong" family planning programs are usually also the ones that are experiencing rapid socio-economic advances and experiencing fertility decreases. They seem to be self-selecting and it is difficult to attribute

the relative "causes" of fertility decline to one or the other.

CFSC furnished assistance in making fertility surveys and/or data analysis in parts of Thailand and Indonesia (sub-national fertility surveys). Data analysis generated from this activity indicated considerable reduction in fertility during the last eight years among mostly rural women in two northern Thai provinces; organized family planning is responsible for increasing "diffusion" of contraceptive use.

In Indonesia, assistance was given to the Indonesian National Family Planning Board by CFSC. From Quarterly Acceptor Surveys, it was concluded that family planning was important for reducing birth rates in Bali and Java.

Both of these assistance activities in Thailand and Indonesia can be regarded as family planning evaluation exercises. A great deal of helpful work was given these countries by two representatives from CFSC over an extended period of time. The detailed evaluation techniques employed were formidable but, unfortunately, time does not permit a thorough study of the validity of the conclusions reached by CFSC in these two countries.

Related to assistance for sub-national fertility surveys is technical assistance for data analysis of fertility surveys already finished. Assistance was given for developing a plan for secondary analysis of the 1974-1975 Egyptian National Fertility Survey. As mentioned before, another activity was the preparation of a detailed work plan for analyzing fertility data from the World Fertility Survey that would not otherwise have been done.

Like the assistance given Indonesia and Thailand, the work involving technical assistance for data analysis has been enormous and has been applied with great ingenuity. A continuation of this activity should furnish a great deal of additional knowledge about fertility patterns at a minimum of expense, assuming that the surveys furnished reliable responses.

Training has consisted of summer workshops at the University of Chicago, in-country workshops in family planning evaluation procedures (Bangkok and Jakarta), training at the advanced degree level at the University of Chicago. Few, if any, training centers specialize almost entirely on training in techniques for evaluating family planning programs. This work is important because family planning is considered by AID and others, (e.g., UNFPA, WHO), as an important intervention for reducing fertility and this can be proven only by measuring its effectiveness.

Several additional manuals on evaluation procedures have been prepared. One of the more important ones is a "Work Plan for a Family Planning Analysis of the World Fertility Survey Data." Its preparation was motivated by the realization that there are valuable family planning data from the WFS that will go untabulated. In fact, CFSC has correctly recognized that there are also other fertility surveys in which parts have not been tabulated and for which assistance is needed.

Dr. Donald Bogue and staff have vigorously engaged in a myriad of evaluation activities under this contract. He has fulfilled his contract obligations

by developing and applying a family planning impact methodology, giving technical assistance, providing training, preparing instructional manuals and making population and functional projections. He has contributed considerably to our knowledge of evaluation measurement.

Dr. Bogue is a well-known, if controversial, demographer. As based on his writings, one recognizes he has strong convictions, most of which are shared by AID/POP, that (a) well-supported family planning programs in LDCs will assist in greatly reducing fertility; (b) fertility is declining in the world and especially in those with strong family planning programs; (c) that by the year 2025, ZPG will be achieved at about 7.4 billion, if LDCs accept and continue a strong "family planning policy;" (d) that socio-economic development is not necessarily a prelude to fertility decline without family planning programs.

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I. INTRODUCTION AND BACKGROUND

A. PROJECT RATIONALE

For a number of years, controversy among population professionals has swirled around whether family planning programs in LDCs are effective for reducing fertility. Consequently, there has been an ongoing need for a contract group or groups to formulate and apply methodology for evaluating family planning programs in general and specifically in individual LDCs. In July 1975, the Community and Family Study Center (CFSC) at the University of Chicago was selected as the best sole source for accomplishing this task. The data and results of their work could then be utilized for guidance of future program activities for AID and other international population assistance programs, and provide data in support of AID budget requests to Congress. The contract was initially for a period of three years (actually 2 3/4 years), but was extended one year to March 31, 1979.

B. GENERAL WORKSCOPE

The workscope of this project has been designed for measuring the demographic impact of family planning programs in less developed countries (LDCs). This has been accomplished by assisting selected LDCs in collecting and evaluating fertility survey data, especially in Indonesia and Thailand, developing computerized methodology, making fertility projections and attempting to demonstrate what impact AID assisted family planning programs have had on fertility reductions, if any. A more detailed statement of the objectives and purposes of the project is contained in a subsequent section of this report entitled, "Project Purposes and Objectives."

C. RELATIONSHIP WITH PREVIOUS CONTRACT

The present contract is an outgrowth and modified continuation of a previous contract with CFSC, University of Chicago. This previous experience apparently influenced the decision to award this contract on the basis of "best sole source" rather than competitive bidding. Even though the scope of work was changed somewhat from the previous contract, the close relationship between work done previously and the superior qualifications of the contractor, the scope of work under this contract justified a "sole source" contract award.

The previous contract (begun in 1969) was concerned with the preparation of a series of manuals on how to evaluate family planning program effectiveness. These manuals involved both research methodology and its potential application. A major feature in the workscope of the previous contract was a series of workshops for training evaluation personnel in their own countries. Software packages (MINITAB AND PROJTARG) were developed for tabulating survey data and establishing family planning goals. It is reported by Mr. Cornelius of PHA/POP/DEA that these are used widely throughout the world. (Ref. "Regular Review of Evaluation of F.P. Effectiveness," Aug. 16, 1976, p. 1)

The present contract, now under review, is essentially one for applying this methodology although considerable new evaluation methodology was devised during this contract period. An example is the "Work Plan for a Family Planning Analysis of World Fertility Survey."

D. CONTRACT AMENDMENTS

Several amendments were made involving abortion related activities (prohibited), budget and administrative changes, change in the period of contract services and greater specificity of the scope of work activities.

For example, on March 30, 1978, the total estimated contract cost was changed to \$796,339 reflecting costs for an additional year contract term extension to March 31, 1979. The original estimated cost of \$496,550 was actually for 2 3/4 years (July 1, 1975 to March 31, 1979). This was increased to \$554,658 on April 1, 1977 and then to \$796,339 on March 30, 1978.

The amendments involving the scope of work were an explication of specific activities to be undertaken for the years, 1977-1978. The scope of work language in the original contract was quite broad and these amendments were for the purpose of identifying more detailed activities to be undertaken. All amendments were within the original scope of work. For example, a provision was included to assist Chiang Mai University (Thailand) in tabulating and analyzing their own family planning survey data. Provisions were also included for assisting the director of family planning research in Indonesia in carrying out an effective program of evaluation and research. The summer teaching and training program in Chicago was enlarged.

Included was a provision for making functional projections using a refined computer program. The projections are not only for estimating future population size and fertility rates but also for future "functional" requirements such as food, education, health and other social service needs. Further experimentation on birth interval analysis was provided for as well as the refining of impact evaluation techniques.

A provision was made to test a computer software package for tabulating pregnancy history data from the World Fertility Survey, utilizing data obtained from Bangladesh and/or Thailand. It is considered by Dr. Bogue that pregnancy history data furnish more accurate fertility measures than birth interval data.

E. BRIEF DESCRIPTION OF CFSC, UNIVERSITY OF CHICAGO

The principal investigator for this and the previous contract since 1969 has been Dr. Donald Bogue, a well-known sociologist-demographer who has spent about 22% of his time on this project. By his own statement, 50% of his salary is paid by the University of Chicago. Dr. Bogue has for many years been controversial among his professional colleagues in his field of demography -- mostly because of his conceptualization and opinion that family planning is an important technique for reducing fertility rates.

Other staff members presently working for CFSC on this project are Dr. Dennis P. Hogan, Dr. Jay Teachman and Dr. Amy O. Tsui. Since the latter two have been trained at the Ph.D. level in CFSC under Dr. Bogue's direction, they have Dr. Bogue's orientation to techniques for measuring demographic change, evaluating family planning programs and solving population problems in LDCs. Dr. Teachman and Dr. Hogan will be leaving CFSC by October 1, 1978 for other positions, thus leaving Dr. Tsui as the only junior professional person left. Together with Dr. Bogue, these personnel have diligently carried out the activities under this contract.

II. PURPOSE AND CONTENT OF PROJECT EVALUATION REPORT

A. COMPOSITION OF PROJECT EVALUATION TEAM

A site visit was made to the CFSC, University of Chicago, during the period of June 26 through 29, 1978. Mr. William Alli (AID/DS/PO) was also to be a member of the team, but prior work prevented his actual participation. Mr. Richard M. Cornelius, as demographer with AID/POP and project monitor for this activity, served as a resource person.

Originally, a full-scale evaluation of the project was to be made for the purpose of determining if the CFSC project and its scope of work should be extended for several more years. However, recently it was decided by AID to terminate this contract on March 31, 1979 and prepare a new RFP with a scope of work that includes presently undetermined additional and new activities as well as a continuance of some work already initiated by CFSC. This will permit open bidding by other institutions (including CFSC/University of Chicago) and groups to work in this substantive area.

B. EVALUATION PURPOSES

In light of the above mentioned conditions, the present project evaluation will not be as intensive as originally planned and will be more on the order of a termination of contract report. It will be confined to a description of the work done, how well it has been accomplished and include a general assessment of the quantity and quality of outputs.

More specifically, a general over-all evaluation of the conceptualization of the methodology and its application will be attempted. The quality and quantity of each output (6) will be assessed for its usefulness to the population assistance program in AID and to individual countries. It will compare contract objectives with achieved outputs. Although the time period for evaluating the research methodology and conclusions is very limited, several examples will be mentioned in an attempt to assess the relative reliability of various research findings about the relationship between family planning and fertility rates. In summary, this assessment is for providing a basis to determine if public funds have been well spent for useful purposes and whether future activities of this nature should be continued.

C. PAST PROGRESS REPORT

This project was begun in July 1975, and one evaluation review has been made. This was performed by Mr. Richard M. Cornelius of AID/POP in August 1976 and covered the contract period between July 1, 1975 and June 30, 1976.

Mr. Cornelius reported on three outputs: demographic impact of family planning, family planning evaluation assistance and support services (manuals, training programs and various types of fertility and component projections). He stated that good progress was being made in all three outputs with the exception of projections. (These have been made since his review).

III. REVIEW OF PROJECT OBJECTIVES

A. CONCEPTUAL ORIENTATION

A number of international assistance groups view family planning as one of the most important means for reducing fertility and subsequently growth rates. They contend that it is the most important vehicle for more quickly solving many aspects of the "population problem" in LDCs, especially a reduction in fertility rates.

But there has been a problem of measuring the impact of family planning on changes in fertility. Since CFSC has had experience and developed considerable expertise in evaluating family planning programs, it was chosen as the contractor for this activity. This group agreed to continue some of the activities carried out in a previous AID supported contract, but would substantially redirect their work to emphasize the measurement of the demographic impact of family planning programs. In addition, a goal was to help develop and maintain population awareness among LDC officials.

B. PROVIDE EVALUATION SERVICES

AID/DS/POP does not have enough staff with expertise to evaluate family planning programs by itself. Consequently, this contract can be considered a service type activity which is an extension to provide AID/DS/POP with an additional capability and resource for fertility measurement and for determining the extent that family planning programs in LDCs are contributing to fertility decline. This over-all objective has been carried out by further developing methodology and applying previous contract methodology, training professionals in evaluation and giving technical assistance to selected countries.

The service data thus generated are being and will be used for making policy decisions to help solve population problems, improve the effectiveness of family planning programs, determine past, present and future fertility rates. AID uses these data for "providing convincing answers in response to Congressional queries on specific examples of population program impact. LDC program administrators must answer similar questions and defend expenditure of scarce funds for family planning versus alternative programs." (Reference: Regular Review of "Evaluation of Family Planning Program Effectiveness," R. Cornelius, Aug. 16, 1976, p. 5.)

C. OPERATIONAL ACTIVITIES FOR SATISFYING OBJECTIVES

The following operational activities have been undertaken by CFSC:

1. Devising measurement techniques and applying them for demonstrating what effect family planning has on fertility rates in selected LDCs (IMPACT EVALUATION).
2. Furnish assistance to selected LDCs for conducting fertility surveys, either national or sub-national, tabulating and analyzing data to measure current fertility levels and characteristics, describe methodology (SUB-NATIONAL FERTILITY SURVEYS).
3. Furnish technical assistance for secondary analysis of survey data already collected in selected countries for making a depth analysis of family planning variables and their relative importance in affecting fertility; detail methodology. Especial attention is given to untabulated family planning data included in the World Fertility Survey in selected countries (TECHNICAL ASSISTANCE FOR DATA ANALYSIS).
4. Train LDC personnel by means of country workshops, technical assistance activities, summer training programs, inservice training in fertility measurement and family planning evaluation (TRAINING).
5. Finish preparation of manuals on evaluation techniques, computer programs for tabulation and analysis of survey data already started under previous contract (MANUAL PREPARATION).
6. To perform functional projections, i.e., future social and economic needs. These projections also include estimated total fertility rates (TFR) and family planning targets (FUNCTIONAL PROJECTIONS).

IV. DETAILED DESCRIPTION AND EVALUATION OF PROJECT OUTPUTS

A. IMPACT EVALUATION

1. Application.

Impact evaluation, i.e., measurement of the relative effect that national family planning programs have on a reduction of crude birth rates (CBR) or other measures of fertility, consists of two parts -- the development of a measurement methodology and the application of the methodology to a particular country. The contractor has developed methodologies and has applied it thus far in four countries -- Thailand, Indonesia (Java-Bali), South Korea and Colombia. Application in the Philippines and Costa Rica are in progress. These countries were selected for measurement under the assumptions that (1) the CBR has fallen substantially since 1964 and (2) a "vigorous" national family planning was implemented. Impact evaluation was not performed in countries having AID assisted national family programs where it was thought that there was little change in the CBR such as Bangladesh, Kenya and Ecuador.

2. Measurement Methodology|.

The relative amount of impact of family planning programs on fertility has been one of considerable controversy. In some countries, it seems to have small impact, in others the impact may be substantial. Considerable effort has gone into measuring impact during the last ten years. Methods have ranged from a simple comparison of estimated birth rates prior to initiation of a program with a rate change after the program began to more refined techniques involving the computation of woman-years of contraception (WYC) converted into births averted and thus attributable to a program. Attempts have been made to allow for other variables and factors (components) which influence fertility levels such as changes in mortality, marital status, migration, sterility and various other socio-economic conditions.

The methodology used by CFSC builds on previous models but emphasizes and attempts to measure to a greater degree the role of variables influencing fertility which are independent of the program influences. It then attempts to link declines in fertility to total contraceptive protection expressed in terms of WYC as estimated by a PROJTAG computer program. This protection is derived from two sources -- within or outside a program.

The model assumes a decline in fertility expressed as TFR, CBR or some other measure as measured by a survey or other techniques. A direct link between contraceptive behavior and fertility change is established with an attempt to control for non-program conditions such as migration, changing marriage and mortality patterns. An estimate is then made of the amount of total contraceptive protection experienced to produce an observed fertility decline. From family planning program statistics, an estimate is calculated to produce the fractional amount of protection due to the family planning program (with-in program), the residual is due to outside a program. For example, in Thailand, about 62% of the total protection was provided by the national family planning program and about 61.1% of the birth rate decline could be attributed to the national program. (Reference: "A Method for Measuring the Impact of a Family Planning Program, Demography, Vol. 15, #1, February 1978.)

3. Critical Examination of Methodology.

Basic to an accurate estimate of the impact of national family planning programs to fertility reduction is (1) a determination (estimate) of contraception required to account for an observed fertility decline if, in fact, it has occurred and (2) an accurate allocation of sources of contraceptive protection, i.e., within or outside an organized program. The computer program, PROJARG, assists (1), above, and allows for data input involving many non-program variables such as infertility, changing age distribution and marriage patterns, mortality including infant mortality, as well as family planning program variables.

This is a well thought out ingenious model, but it remains a model. Its chief weakness is, like most models, that accurate detailed "non-program input" data in many LDCs about infertility, proportion married by age, migration and even mortality, TFRs by age are most difficult to acquire or even estimate accurately. Moreover, PROJARG uses an average of continuation and failure rates and family planning targets in all age groups, an assumption that does not permit rates by age groups. Using the TABRAP program developed by Nortman and Bongaarts (Population Council), permits these characteristics by age but these types of data are even more detailed and difficult to acquire in LDCs. This is not a serious defect since CFSC uses average continuation rates for the total fertile ages, but data by age groups would be useful for estimating targets.

An additional consideration should be mentioned. The impact of a family planning program on fertility is estimated by subtracting an estimate of WYC from the National Family Planning Program from the total WYC estimated as a result of an assumed decrease in fertility rates. This residual is contraception due to non-family planning program. Estimates of the components of this residual would be important and if added would serve as a check to the reliability of the proportional impact due to the National Family Planning Program.

If time permitted, additional comments could be made about the methodology and how its application affects conclusions about the impact of national family planning on birth rates. Two more will be mentioned about assumptions underlying the methodology.

4. Additional Assumptions Affecting Impact Analysis Conclusions.

The first is an assumption that none of the contraceptive protection would have been provided by other sources, i.e., commercial, folk methods, abstinence, etc., in the absence of a national program. (Reference: Ibid., p. 121.) In other words, to what extent would fertility have declined without a program? This assumption probably is not acceptable, but is almost unanswerable unless special control groups are used. Nevertheless, any significant additional amount of protection from other sources than a national family planning program would reduce accordingly the extent of impact of a national program. Certain non-program fertility impediments are provided in the model, but not all.

The second is an assumption that the CBRs not only have actually declined between about 1965 and 1975, but have greatly declined in most of the countries where the methodology was applied, (Thailand, Colombia, especially). In Thailand, it is claimed by CFSC that the CBR was 44 in 1964 and 35 in 1975 -- a difference of -9. These data came from various Thai sources. However, other international data sources vary somewhat from these figures but most agree that there has been a decrease the amount being in question. The Statistical Office of the UN reported a CBR of 43.4 for 1974 while the Population Reference Bureau (PRB) reported 35.0 (difference of -8.4). For 1965, PRB reported 45.0 and unreported 41.0 (difference of -4.0). The greatest difference among various international sources between 1965 and 1974 was PBR (-10) and the least difference -2.1 (Pop. Div., UN). The difference between the source reporting the lowest CBR for 1965 and the source reporting the highest rate in 1974 was an increase of 2.4. The implication is obvious. The extent of impact in terms of births averted of the national family planning program and resultant growth rates can be diluted considerably, if the CBR difference between 1965 and 1975 was only a decrease of 3 or 4 instead of the 9 used in the impact analysis by CFSC. Expenditures for assistance through 1973 were \$16,000,000 of which over one-half was U.S. bilateral.

This also applies to the Colombian analysis by CFSC. AID estimated a decrease of 14 in CBR between 1965 and 1974; the Statistical Office of the UN estimated only a decrease of 3.7. The difference between the lowest CBR estimate (36.9, Stat. Office of UN) and the highest estimate for 1974 among all major sources (40.6, Stat. Office of UN) was an increase of 3.7. The major sources included Pop. Council, PRB, UN Pop. Div., U.S. Bureau

of Census, etc. Total international expenditures for the Colombia F.P. program through 1973 were \$14 million; U.S. bilateral was 2.4 million.

5. Other AID Contracts Related to Program Evaluation.

To my knowledge, no other AID contract is involved in a highly specialized direct family planning impact measurement. However, several other contracts support measurement activities that provide for improving vital statistics and family planning data that can be used for direct impact measurement. One is with the National Academy of Sciences for improving data that can be used for family planning evaluation and the other is with the National Center for Health Statistics (HEW) for investigating how more reliable vital statistics can be obtained. In addition, the World Fertility Survey provides actual fertility estimates, the East-West Center is involved in fertility measurement, and Westinghouse Corporation has been conducting contraceptive prevalence studies. The North Carolina POPLAB Program has also been involved.

B. SUB-NATIONAL FERTILITY SURVEYS

1. Purpose and Definition.

The principal purpose of this activity is to assist selected countries for performing surveys and analysis which measure the extent and characteristics of fertility and relate them to national family planning programs. Most of the activities under this heading were for giving technical assistance to surveys and analysis performed in parts of a country where it was thought that fertility changes were taking place.

2. Northern Thailand Survey and Analysis.

One major activity was assisting Thailand (Chiang Mai University) with a study of fertility and family planning behavior in two provinces in rural northern Thailand. Three reports were prepared on -- (1) contraceptive practices and fertility behavior of the Hill Tribe people; (2) study of fertility trends and high rates of contraception showing that nearly all contraceptive protection was provided by the National Family Planning Program; (3) study of social and economic differentials among the rural people. All these preliminary reports have been combined into one consisting of 9 chapters with references and tables. Report number 2 above has been accepted for publication in Studies in Family Planning (Population Council, NY). Dr. Dennis Hogan, an employee under this contract, was the consultant and lived in Thailand over an extended length of time.

Appropriate data were collected through a questionnaire for measuring and identifying the following:

- a) Levels of fertility and trends
- b) Knowledge and attitudes about family planning
- c) Contraceptive use rate and methods
- d) Barriers to adoption of family planning
- e) Methods for eliminating barriers to family planning adoption

Questionnaires were developed for the interviews with the ever-married women in the sample and with the husbands of those women who are currently married. The female questionnaires included complete pregnancy histories, an inventory of family planning knowledge and practice, and partial contraceptive histories. A questionnaire on IEC was administered to both the women and their husbands. Family background and socio-economic characteristics of both the women and the men were obtained. The survey questions have been widely used in surveys in many other parts of the world and have been extensively tested for their validity and reliability. After an initial pretest on thirty couples, the questionnaires were modified. A second pretest was held before the revised questionnaires were accepted as being in their final form.

A random sample of 190 villages was drawn from the two changwats using a listing of all villages by size strata. Village censuses from the 1974 Malaria Eradication Program provided the sampling frame. The sample villages were drawn from the rural areas of the changwats; the provincial capital of each changwat was excluded from the sample. Seven villages requiring more than a one-day walk to be reached by the interview team were dropped from the sample. Three additional villages were in politically sensitive areas and were dropped from the sample at the suggestion of the Chiang Rai changwat governor.

An updated household roster for each of the remaining 180 villages was obtained in consultation with tambol leaders. A systematic random sample of the households from each village was then drawn. A sufficient number of villages were included in the sample for each size stratum so that no more than twenty-five households and no more than 15 percent of the households in any village were included in the sample. All ever-married women aged fifteen to forty-four living in a sample household were included as sample respondents. Husbands of currently married women were also interviewed.

These procedures result in a representative random sample of the rural areas of Chiang Mai and Chiang Rai changwats. Response rates were 88.5 percent among females and 80.5 percent among males (resulting in completed interviews from 1921 women and 1615 husbands).

Other details concerning interview field teams, data coding, editing, processing and conclusions are included in the 9 chapter report entitled, "Fertility and Family Planning in Rural Northern Thailand, 1976-1977."

The reports conclude that during the last eight years, both provinces have experienced a much lower fertility; this lower fertility cannot be explained by increased development since fertility declined among rural women unaffected by development; that organized family planning is responsible for an ever increasing "diffusion" of contraceptive use especially among rural women (stochastic phenomenon) and hence family planning is highly effective in reducing fertility, at least in these two provinces. Very few barriers were found against family planning.

An important central finding among others is that the family planning program promotes "innovative diffusion and contraceptive innovation" and hence lowers fertility. Development, apparently, has little effect at least in the short run in northern Thailand. Unfortunately, time or funds do not permit at this time a detailed review and evaluation of the survey questionnaire, tabular techniques and analysis employed for arriving at these findings. They are important and have implications for other AID assisted programs and consideration should be given to this in the future. So far as is known, no independent outside professional group has critically reviewed this research.

3. Assistance to Indonesian National Family Planning Board.

Extensive assistance was given to Indonesia especially in the analysis of data from the Quarterly Acceptor Surveys and other survey data. Dr. Jay Teachman (Ph.D. candidate, 1978, University of Chicago) was a resident advisor from January 3 to November 21, 1977 to assist mostly in the analysis of data already collected. During this period, data from the Quarterly Acceptor Surveys were prepared for processing and tabulated. Of special importance was the derivation of use-effectiveness rates. At least 11 papers were prepared by Dr. Techman on many aspects of the national family planning program in Indonesia, i.e., Java-Bali, which comprises very roughly 2/3 of the population of Indonesia (94,500,000, in 1977).

The titles of the papers are as follows:

"Preliminary Estimates of Overlap of Postpartum Amenorrhea with Contraceptive Use in Indonesia."

"A Manual of Procedures for Using the POPLIF Program for Computing Contraception Continuation Rates."

"The Indonesian Quarterly Acceptor Survey: Background Documentation."

"Evaluation of the Impact of Family Planning on Java's Birth Rate."

"The Indonesian Family Planning Program: Its Strategy for the Future."

"Contraceptive Use-Effectiveness in Indonesia."

"Continuation of Contraception on Java-Bali: Some Preliminary Results from the Quarterly Acceptor Survey."

"Some Preliminary Calculations on Contraceptive Use Rates in Indonesia."

"The Indonesian Village Distribution System: An Analysis of Acceptor Characteristics and Contraceptive Use."

"An Examination of Potential Sources of Bias in Continuation Rates Calculated from the Quarterly Acceptor Survey."

"Current Fertility on Bali."

The above papers as well as the 1973 fertility measurement survey and the WFS data provide the basis for much of the recent publicity about the effectiveness of the Indonesian Family Planning Programs for reducing birth rates. In general, family planning is regarded as an important vehicle for reducing fertility in Indonesia, at least in the Java-Bali area.

Although most of these papers are not available for review, any project evaluator would be compelled to say that Dr. Teachman was extremely helpful to the Family Planning Board of Indonesia and very thorough in his analyses of existing data. These basic primary data apparently came from previous surveys and the Quarterly Acceptor Survey. He not only studied fertility rates and their relationships with family planning, but also attempted the usually difficult tasks of measuring the effectiveness of family planning so that administrative changes could be made, if so desired.

C. TECHNICAL ASSISTANCE FOR DATA ANALYSIS

1. Scope and Purpose.

The major purpose of this activity has been to give technical assistance by CFSC staff to countries who already have performed surveys on fertility. The work usually involved developing and applying computer programs, classifying data, structuring tabulation tables, tabulating data and making recommendations for data analysis. Central to this purpose was to expedite the availability of data on fertility (and family planning related variables) in as many countries as possible utilizing data already collected but not tabulated. This has resulted in the acquisition of needed information and analysis at low cost in some other countries not mentioned previously in this report, e.g., Egypt.

2. Method of Assistance.

Two major methods for assistance have been employed. One was direct assistance to a country (e.g., Egypt) and the other a preparation and development of a work plan for data analysis of family planning data from the World Fertility Survey. All project staff members participated in this activity in one manner or another.

3. Implementation.

This sub-project was carried out through the development of detailed work plans, country technical assistance and follow-up activities, training sessions in methodology application and development of computer programs for tabulating data.

Two important examples of this activity will be described and discussed. The first is the development and publication of a work plan for tabulating and analyzing family planning data from the World Fertility Survey carried out in some countries, but for the most part, untabulated. It is especially designed to serve the need of family planning officers who have a professional interest in fertility reduction and such subjects as non-adoption of contraception, birth history analysis, et. This manual (work plan) is now being used on the data from the Bangladesh Fertility Survey, especially Chapter 1 on birth history. Mr. A. Ahmed of Bangladesh is analyzing these data for his M.A. degree. Others are making analysis of this survey utilizing other subject matter in the work plan. Two participants from Mexico and Pakistan who were actually involved in the 1978 Summer Workshop have each brought tapes of the WFS taken in their respective countries. They will use the work plan for tabulating and analyzing WFS data on selected parts of the family planning modules and other data, thus adding additional knowledge about fertility and family planning in those countries.

The second major implementation activity has been technical assistance to the Arab Republic of Egypt in late 1977 for developing a plan for secondary analysis of the 1974-1975 Egyptian National Fertility Survey. The proposed measurement plan consists of four parts -- fertility levels, social and economic differences in fertility, contraceptive knowledge, attitudes and behavior according to social and economic differences.

4. Evaluation of Technical Assistance.

The work carried out under this sub-activity has been enormous. Advantage has been taken of the great amount of data collected but untabulated from various sources, especially from the WFS. This procedure furnishes data and information from existing relatively inexpensive sources in countries where data based on new family planning surveys and fertility would be almost prohibitive. An impression is gained that great ingenuity has been applied in the administering of this sub-activity by Dr. Bogue.

D. TRAINING

1. General Scope of Training Activities.

The general objective of the training program under this contract is to teach family planning and demonstrate evaluation and related techniques that have been conceptualized and developed for the past nine years by Dr. Donald Bogue and his professional staff. This has been done through various programs -- (1) summer workshops in which a variety of evaluation methods are taught to foreign nationals; (2) in-country workshops where fundamentals of evaluation procedures are taught, discussed and applied; (3) training of foreign nationals at the advanced degree level at the University of Chicago and (4) training of Americans at the M.A. and Ph.D. level. For the latter, AID funds have not been directly available, but research subject matter has for dissertations, etc. Of course, technical assistance given to countries by staff members is a means of training in itself.

In the past, training programs used a number of manuals prepared by Dr. Bogue, his deceased wife and staff members. These manuals or textbooks treated in great detail a variety of general family planning evaluation procedures. As time went by, the subject matter of the manuals became more detailed and several were prepared on computer program tabulation techniques.

Participants for training are financed by funds primarily from AID/OIT through AID country missions. The overall contract pays for instructor's time. Even though, in a few cases, AID does not directly support training participants, support comes indirectly from the U.S. Government. In all probability, most participants don't really know the origin of the funds.

2. Examples of Training Activities.

a) OVERSEAS WORKSHOPS. Two overseas workshops on "practical" F.P. program evaluation techniques and methodology were held in Bangkok, Nov. 28-Dec. 9, 1977 and Jakarta, November 14-23, 1977. The subject matter was essentially the same for both. This included instruction on formulation of client record systems, calculations of contraceptive continuation and failure rates and analysis using the computer program, POPLIFE, impact evaluation techniques and acceptor target estimates. Methods of hand calculation were taught as well as the use of computer programs (PROJTARG and TABRAP) for tabulating family planning data.

About 35 participants completed the Jakarta workshop and about 24 finished in Bangkok. Apparently, the Jakarta workshop was considered the most successful because USAID/Jakarta contributed considerable local funds (\$20,000) while USAID/Bangkok did not. Although the reasons USAID/Bangkok was unwilling or unable to contribute are not clear, CFSC representatives considered this a disadvantage to the success of the workshop. The workshop was

held at a mountainous "retreat" and did not compete with other on-going population activities as was the case in Bangkok. In any event, it is reported that the participants are now applying what they learned in the workshops of both countries.

b) SUMMER WORKSHOPS (UNIVERSITY OF CHICAGO). At least two summer workshops were held at the University of Chicago - one in 1977 and the other in the summer of 1978 in addition to 1975 and 1976. About 75 persons have been intensively trained in aspects of population education, communication and evaluation research. Workshops have concentrated intensively on such subjects as principles of demography and basic demographic methods, impact evaluation techniques, surveys, sampling and computer processing. In short, the particular research methodology developed over the years at CFSC has been summarized and taught to foreign nationals for application in their own countries. In addition, during the 1978 session, participants from Pakistan and Mexico brought WFS computer tapes to learn how to apply in their own countries the WFS tabulation work plan previously referred to in this report.

c) LONGER TERM TRAINING IN F.P. EVALUATION. Longer term training is provided through an M.A. and Ph.D. program at the Center. Research assistantships are provided under this project to a limited number of foreign M.A. and Ph.D. candidates in return for 1/3 to 1/2 time work on project activities. One American (Dr. Teachman) has gathered data for a dissertation as a full-time assistant director of the Center.

d) EVALUATIVE COMMENTS. Few universities anywhere concentrate almost conclusively and intensively on the rather narrow area of family planning evaluation, training and related research. But its importance is much greater than would be thought of at a first superficial consideration. Results of its research conclusions provide policy directions, allocation of funds and their amount, measures of success or failure of family planning as a vehicle for solving population problems and reducing fertility and growth rates. It helps to give foreign nationals techniques for measuring the value of national family planning programs in order to convince policy makers that more (or less) expenditures should be appropriated.

The training program sponsored by CFSC is considered excellent. It seems to make use of every practical method for training. The M.A. and Ph.D. students do a lot of work at a very economical rate. The workshops have been good because staff is already available and can be dovetailed in easily with other ongoing projects. Several participants interviewed by this evaluator stated that they thought their training in the summer workshop would be very valuable, e.g., Mr. Nizamuddin from Pakistan and Mr. Welty from Mexico.

E. MANUALS

During a previous contract period about 18-19 "Rapid Feedback" manuals were written and produced. They focused on many aspects of family planning evaluation methodology. Emphasized were detailed steps for the application of the methodology. These manuals have been used for workshops, summer training sessions, and LDC evaluators as well as technical advisors employed by U.N. Some of these manuals have been reprinted because of the demand. They have been sent to a mailing list numbering about 700. Of these, LDC demographic centers have received 450.

However, under this contract, it was decided to phase out the preparation of new manuals and complete only those initiated under the old contract. Accordingly, about 5 manuals were finished on such topics as birth interval analysis, functional projections and family planning follow-up surveys.

If funds are available under a new contract, several manuals could be revised and up-dated, especially those concerned with pregnancy history and projection techniques. In addition, a manual for measuring migration might be prepared -- this has been a neglected area.

F. FUNCTIONAL PROJECTIONS

1. Definition and General Description.

For the last 12 years, ever increasing attention has been paid by AID, UNFPA, WHO, American and foreign universities, non-profit organizations to solutions involving the problems attributed to high fertility and growth rates in LDCs. Increasing yearly funds have been made available to AID, UNFPA, IPPF and other organizations including universities to study the problem and give technical assistance. The United States Government alone has spent nearly 1 billion dollars in population assistance since 1967. Countries have been encouraged to develop population policies even though the United States itself has never had a formal one.

An attempt has been made by the University of Chicago group to measure the degree of success in terms of estimating the reduction of total fertility rates since 1968 and projecting these into the future. In addition, they are projecting into the future the amount of social type facilities that will be needed. These facilities include (among others) education, health and food. Projections have been and are being made on marital status, labor force, students enrolled and health facilities. Dr. Amy Tsui has been mainly responsible for these exercises under the direction of Dr. Bogue. In summary, a "functional population projection is an age-sex population projection which has been converted into functional terms -- a product, service, activity, facility etc."

2. Methodology.

The methodology for the computation of functional projections consists of several parts, each of which has independent implications. The first is the preparation of population age-sex projections leading to total population projections taking into account the anticipated effects of family planning programs. The second part is a theoretical computation of functional projections based on these data and other estimates of "population components."

a) POPULATION PROJECTIONS. CFSC has prepared new sets of country and regional population projections based on work previously done. In addition, these projections take into account present and postulated future effects of family planning programs. The researchers claim that their population projections "are fully consistent with the most recent data concerning birth declines." They emphasize that "these projections are based upon the assumption that there will be a continuing well-financed and well-sponsored program of international assistance to developing countries during the next quarter century." In general, the figures show considerable decrease in TFR between 1968 and 1975 for most countries (but not all) and an even greater decrease in the projections by the year 2000.

The fertility rate estimates are presented in terms of total fertility rates, i.e., the total number of children that a woman, aged 15-49, would have during her lifetime from data in a given year. Estimated CBRs are also given. Previous projections, for the most part, have been based on simple extrapolative methods. Dr. Boque claims that his projections are improved and are based on certain assumptions (among others) such as favorable "cognitive preparation"* and ever increasing family planning acceptance which can only reduce fertility in both the short and long run. He, however, admits that the downward fertility trend in LDCs is of "cognitive preparation" is too unknown as well as the extent that family planning programs will develop in the future in individual countries to predict very precisely what future fertility rates will be. This would also affect the reliability of population projections.

And herein lies the chief weakness of the population and TFR estimates prepared by CFSC in terms of high, medium and low estimates. Each set of estimates has its own assumptions usually involving strong, moderate or weak family planning programs. The strength of the family planning program is measured by a scale developed by Parker Mauldin and Bernard Berelson.

* "Cognitive preparation" refers to a condition in a country where there is a rather strong population policy and a general awareness of the advantages of fertility reduction and of the disadvantages of uncontrolled population growth both for individual families and the country-community as a whole.

This whole exercise is well thought out and takes into account many variables and assumptions, some of which are mentioned above. The predictive value of these projections depends on acceptance of the assumptions stated. In the future, if a given assumption does not materialize, e.g., a strong, well-financed family planning program or other assumed condition, the population projections and TFRs can be quite different, even though allowance is made by computing high, medium and low estimates. India is an example of a large country in which future projections of population and growth are very difficult to make because one does not know to what extent "cognitive preparation" will be achieved and whether the future family planning effort will be strong or weak. In any event, Dr. Bogue and staff have used a somewhat different approach from previous ones such as regression estimates (Palmore) and simple extrapolation.

b) FUNCTIONAL POPULATION PROJECTIONS. A methodology for preparing functional population projections has been developed by CFSC utilizing special computer programs and input data from various sources including the country itself, the UN agency collecting the particular (functional) data such as ILO, UNESCO, FAO, etc. By definition, a "functional" projection refers to the anticipated number of people needing a social service in the future, such as schools and teachers, health facilities and labor force participation.

Once fertility and population projections are performed for a given country based on assumptions referred to above, functional projections may be estimated by using these figures and the changing demographic base to estimate social service type needs. A panel of experts has assisted CFSC in this activity as well as with the assumptions underlying the projections of TFRs and population estimates.

Also estimated are "components" of growth. This refers to population increase, mortality and age composition, marital status and urban-rural population. Dr. Bogue states that the projections thus far are illustrative and are not overly reliable.

V. DISCUSSION, ISSUES AND CONCLUSIONS

A. GENERAL SUMMARY OF PROJECT PERFORMANCE

A two or three week review evaluation of the myriad of activities and quantity of papers, publications, training programs, etc. produced by Dr. Bogue and his group in CFSC at the University of Chicago by one evaluator can only be superficial at best. A description of the more important activities and comments on their quality have been attempted in this report.

A tremendous amount of work has been done, and the total project cost will reach almost \$800,000 for a period of about four years. As can be seen from the accompanying chart at the end of this report, contract project objectives have been formidable and have been met or exceeded, in the opinion of this reviewer. In fact, Dr. Bogue and staff have tackled with great energy some almost impossible contract requests such as measuring the relative impact of family planning programs on fertility rate changes and trying to estimate future population size and rates in selected countries, not to mention the general area of component and functional projections. Projections of any type are fraught with danger and many a professional has had his reputation destroyed by erroneous predictions not only in the social and economic sciences but the "harder" sciences as well. This group has rushed in where angels often fear to tread.

As stated elsewhere in this report. this contract has been a service type to produce information that the population group in AID can use for continued Congressional support of their program. Dr. Bogue was selected as a contractor to develop methodology and apply it in certain countries, i.e., Thailand and parts of Indonesia to investigate if family planning program assistance has lowered fertility in selected countries. Both the Director of AID population program and Dr. Bogue share similar viewpoints and honestly and firmly believe that ever increasing amounts of funds, personnel and energy for family planning in LDCs will greatly reduce fertility rates and eventually slow rates of growth. Some professionals disagree. Those in disagreement can point to statistical evidence to prove that in many countries, family planning is not lowering fertility rates just as Dr. Bogue has proven that in some countries it has. This seems to be the "state of the art" at this point. One thing is certain -- Dr. Bogue has advanced the "state of the art" with great resourcefulness in the area of measurement even though the predictive quality of his tested hypotheses, conclusions and theories may fall somewhat short of the mark.

Dr. Bogue is firmly and honestly convinced from his research and data that once contraception (family planning services) is accepted by women (especially rural) that there will be an "innovative diffusion" leading to an ever increasing number of acceptors of contraception over longer periods of time, thus avoiding pregnancy and lowering fertility rates. The basis for this conclusion comes from his observations and research over a period of years such as the northern Thailand survey of contraceptive practices, WFS analysis, etc. Of course, no one yet knows whether this attitude would prevail in other developing countries, especially those of Africa and some Latin American countries where fertility rates and growth rates, for the most part, still remain high according to UN and the U.S. Bureau of Statistics figures.

Dr. Donald Bogue, an experienced, well-educated professional demographer, statistician and sociologist is an extremely capable, energetic professional but is very controversial. Well known is his view that family planning programs can be an effective and important intervening variable for reducing fertility rates. This intervening variable is often defined in different ways. For example, family planning for some means a simple adjunct to the maternal-child-health services as a contraceptive service within the local public health services. To others, it means population planning including abortion, etc., with the specific objective of reducing fertility.

Dr. Bogue is what might be termed a "population optimist," in that he believes that fertility rates will automatically drop if "family planning effort" is sustained. He had predicted as early as 1967 that the "population explosion" would not continue and that high fertility rates would decline. The knowledge that we have, defective as it might be, has not borne this out. High fertility rates have declined for some small countries, but statistics indicate that many large country populations have declined very little.

In the United States, he predicted in 1968 U.S. News and World Report that the U.S. population would reach a "stationary point" (i.e., births equal to deaths) at about 220 million. The U.S. already has about 224 million (including illegal migrants) and has not reached a stationary population yet in 1978. He further stated in the same report that the U.S. would not reach a population of 300 million in one hundred years, i.e., until 2068. The population of the U.S. is increasing about 1.0 - 1.2% per year (including migration, legal and illegal) and if present trends continue will most certainly reach 300 million before 2068.

Although there are many other conceptual and methodological considerations that should be discussed, one remaining deserves attention. It has to do with the relative importance and relationship between fertility decline and socio-economic improvement in LDCs vis-a-vis that associated with family planning. The position taken by Dr. Bogue's group is that family planning exerts a much greater influence on fertility reduction than does general improvement in socio-economic conditions.

The issues which Dr. Bogue and staff have been involved in are extremely important and have tremendous implications for future actions by not only AID but also the countless groups supported by United States funds including UN. It is strongly recommended that evaluation research and related data collection activities be continued in new RFPs.

Future family planning evaluation type contracts should be based on competitive bids, not only to satisfy the latest AID regulations, but also to obtain alternate conceptual methods and analysis techniques for assessing estimates of fertility and family planning impact in LDCs.

MAJOR OUTPUTS BY TYPE OF ACTIVITY; OBJECTIVES
AND DESCRIPTION UNDER THIS PROJECT
July 1, 1975 - July 1, 1978
(University of Chicago)

OUTPUT BY TYPE OF ACTIVITY AND OBJECTIVE	FORM OF OUTPUT	DESCRIPTION
1. Impact Evaluation -- Methodology and Application	Reports, Publications	Development and Application of Generalized Methodology for Measuring Impact of F.P.
a. An Evaluation of the Demographic Impact of the National Family Planning Program of Thailand	In-House Evaluation-Analysis 36 pages (mimeo)	F.P. Evaluation Methodology Using Data Available in Thailand concluding that F.P. is largely responsible for decreased fertility.
b. Working Committee to Study the Impact of F.P. on the Demographic, Economic and Social Structure of Colombia	Working Committee Report Text, tables and references (No pagination) (Mimeo)	Report of a working committee studying population interrelationships in Colombia.
c. An Analysis of the Impact of Organized Family Planning Efforts on Korean Fertility	In-House Evaluation Analysis Report on Korea	Application of F.P. Evaluation Methodology using data from Korea with conclusions about the impact of F.P. on fertility changes.
d. Evaluation of the Impact of F.P. on Java's Birth Rate	In-House Evaluation-Analysis Report -- 32 pages w/notes and tables (mimeo)	Application of F.P. Evaluation Methodology to Java showing relative effect of F.P. on fertility reduction.
e. A Proposed Method for Measuring the Impact of an Organized F.P. Program on Birth Rates	In-House Description (mimeo) 15 pages with notes and tables	Detailed description of F.P. impact methodology which can be used for measuring fertility changes due to F.P. programs.
f. A Component's Method for Measuring the Impact of a F.P. Program on Birth Rates	Publication in <u>Demography</u> , Vol. 15, #1, February 1978	Detailed description of F.P. impact methodology and its application in Thailand and Indonesia.

2. Sub-National Fertility Surveys	Preparation of Reports, Monographs	Technical Assistance and Data Analysis in Thailand and Indonesia
a. Fertility and Family Planning in Rural Northern Thailand 1976-1977	A Detailed In-House Analysis 9 chapters with references and tables	Detailed description of fertility, contraceptive patterns in 2 northern Thai provinces showing (1) at least 50% families using nat'l F.P. induced contraceptives and (2) steep reduction in CBR.
b. Same as above	A Preliminary Report	Same as above
c. Evaluation of Family Planning Program (Indonesia)	Monographs and Reports (11) Jan. 3, 1977 - Nov. 21, 1977	A detailed analysis of many aspects of the Family Planning Program in Indonesia.
3. Technical Assistance for Data Analysis	Technical Assistance, Manuals	Analysis of WFS data, technical assistance to Egypt and other countries.
a. Work Plan for a Family Planning Analysis of World Fertility Survey Data (1978) (114 pages)	Tabulation and Analysis Instructional Manual	Instructions for tabulating and analyzing fertility, contraception and F.P. data which will not be done in WFS tabulations.
b. Plan for Secondary Analysis of the 1974-1975 Egyptian National Fertility Study (Hogan, Dec. 1977) (w/ proposed tables)	Technical Paper	Analysis and tabulation plan for identifying, describing and analyzing fertility features and F.P. practices in Egypt from surveys previously implemented.
4. Training	Class Instruction, etc.	All types of training including seminars, summer training, workshops.
a. Training in Evaluation Techniques for F.P. Administrators and Evaluators	Course of Study and Schedule for 2 Overseas Workshops (Jakarta and Bangkok)	Training of 59 participants in clinical/client forms, tabulation procedures, analysis of data and general evaluation techniques.

b. Same as above	Course of Study for Summer Workshops, University of Chicago, (1977-1978)	Description of training subject matter and schedule for foreign participants in evaluation of F.P. programs for about 75 participants. All staff members served as instructors.
5. Evaluation Techniques (since 1975) (Partial Listing)	Instructional Manuals	Manuals describing in great detail how evaluation calculations can be made; computer programs are usually included.
a. ADDLIB: A Packaged Computer Program for Processing Address and Library Information	Manual	Title is self explanatory.
b. A Model Interview for Follow-up Studies of Family Planning Acceptors	Manual	Self explanatory.
6. Population, Fertility and Functional Projections	Technical Papers Describing Methodology and Projections	Self explanatory.
a. World Fertility Trends During Next 25 Years (Bogue and Tsui)	In-House Article (April 1978)	Describes trends of world fertility decline estimates projections, and deals with future implications.
b. Declining World Fertility: Trends, Causes and Implications (Bogue and Staff)	In-House Article (June 1978) (To be published by Population Reference Bureau)	Describes in detail with evidence from a number of countries that fertility is declining.
c. Population and Functional Projections 1975-2000, South Korea (1978) (Other Country Projects to Follow)	Individual Report on Projections for South Korea; other country reports will be made	Includes population projections, annual number of births, rates of growth, number of deaths, birth and death rates, marital status, students enrolled, labor force and health facilities for 1975, 1980, 1990 and 2000.

d. Techniques for Making Functional Population Projections 1978	Monograph	A descriptive procedure for making functional population projections on education, marriages, labor force, etc. using FUNC-PROJ (computer program).
e. Population Projections for the World, 1975-2000 (Oct. 1977)	Report with Methodology and projections	Population projections for individual countries and regions based on data from World Bank, Pop. Division UN and AID.
f. Predicting Fertility Trends in LDCs Over the Next Century	Paper prepared for Annual Meeting of Pop. Assn. of America, 1978, Atlanta, Ga.	Predicts fertility will decline greatly as F.P. programs progress. Analyses relationship between TFRs and a variety of sociological and demographic variables.