

PART 1. Summary and Recommendations

A. Recommendations:

It is recommended that \$778,010 in grant contract funds be approved to finance four years of applied research and consulting activity as outlined in this Project Paper. The obligation schedule would be as follows: FY 1977 -- \$358,040. FY 1979 -- \$419,870. The disbursement schedule would be as follows: FY 1977/78 -- \$216,000; FY 1979 -- \$142,040; FY -- \$326,970; FY 1981 -- \$92,900.

B. Summary Description of the Project

This project will enable missions and LDCs to design rural development programs which can take into account the interrelationship between population growth and distribution on the one hand and development and overall improvement in living standards on the other. Specifically, the project will 1) review the demographic impacts of selected rural development activities and 2) present methodologies refined from these investigations useful to project officers concerned with assessing the impacts on population growth of future projects. In accomplishing these two tasks the project will study the complex factors affecting population growth (such as the prevailing attitudes on the value of children and the influence of non-traditional economic roles for women) and help to identify factors which might motivate

people to plan family size or space their children. Methodologies for impact analysis plus the significance of cultural, economic and social factors in determining family size and population distribution will be presented in operational terms easily accessible to donor and LDC rural development personnel.

The project will improve program design by providing the following services: (1) short-term consulting to mission personnel; (2) state-of-the-art papers to provide clear and concise information on the impact of rural development interventions on population variables; (3) a network of scholars/practitioners working on population impact analysis whose expertise in demography and rural development can then be accessed for program support in design, implementation and evaluation; (4) disseminating information generated through these activities via a series of workshops and seminars (in which LDC personnel as well as AID officers will participate), state-of-the-art papers, reports of case studies of the population impacts of particular projects, and a final report that integrates the findings of the SOAPS, case studies, and seminar proceedings.

The project emphasizes two types of outputs. One is a more precise identification of the interrelationship between rural development activities and population growth, particularly the factors affecting family size. This is

the goal of the SOAPS. The second output is an operational approach for doing assessments of the motivation for smaller families stimulated by programs such as agrarian reform, off-farm employment, enhancing rural markets systems, expanded agricultural production, rural infrastructure, rural credit, and non-traditional employment of women. This will be the focus of the case studies. Regional seminars will provide instruction to AID rural development, population and other mission officers as well as selected personnel from LDC institutions in how to make use of the guidelines.

The PID for this project was approved by the Research and Development Committee on March 22, 1977. The project will be implemented by means of a Cooperative Agreement with Research Triangle Institute (RTI) under the authority of a Basic Memorandum of Agreement already in force between AID and RTI as part of the Expanded Program for Agricultural and Rural Sector Analysis.

The project will be carried out by scholars within the South Eastern Consortium for International Development (SECID), a component of the RTI organizational structure. While the Consortium brings distinguished scholars from such leading universities as Duke, the University of North Carolina, Pennsylvania State University, and the University of Florida, a majority of the Consortium's membership is

composed of 1890 land-grant institutions. Consequently, through the SECID, the project will be able to field research teams with significant minority group representation and much of the overhead and faculty support funds of the project will go to predominately minority institutions. Being able to access this diversity of scholarly talent and breadth of institutional participation is an important, perhaps unique, feature of this project.

To some extent this multi-institution work force may increase administrative overhead and create coordinating chores a single institution contract would obviate. Yet the additional marginal costs invested in the present arrangement will return a handsome dividend to the Agency through development of new institutional and personal contacts with many not previously involved in project-related consulting and operational research. The collaboration of leading scholars and research universities with predominantly minority student colleges and teaching professors promises meaningful mutual growth and development. The lessons offered the Agency from this collaborative project can go far beyond the immediate purpose of better understanding the population impacts of rural development activities and how to choose and carry out rural development programs that have the greatest chance of achieving desirable population effects.

PART 2. Project Background and Detailed
Description

A. Background and Justification

It is widely accepted that the problem of rural development must be attacked simultaneously through provision of services for satisfying basic human needs, efforts to improve income through increased productivity and more equitable distribution, as well as efforts to slow the rate of population growth. Within AID these concerns often have been approached independently in the past. However, consistent with Section 104 of the Foreign Assistance Act of 1961 as amended in 1977, particular attention must be given to the relationship between population growth on the one hand and development on the other.

The purpose of this project is to marshal resources through applied research, consulting and practitioners - oriented information flows on the relationships between rural development programs in general -- with special emphasis on the seven areas in the TA/RD Critical Problems in Rural Development (CPRD) program -- and population growth. Indeed there is a clear need for better understanding of how RD initiatives affect population growth in developing countries and the influence of these activities on motivating people to plan family size and to space their children.

The object of this project is to elucidate the demographic

dimensions of RD problems, promote relevant applied research to provide new insights into the linkages between development activities and fertility, and to help missions and LDC governments to better plan rural development projects by taking into account their likely consequences in terms of demographic change. One of the first activities of the project will be to formulate a series of hypotheses about the linkages between rural development and population. Some initial possible hypotheses, organized by TA/RD program area, are listed below:

1. Participation -- The goal of AID assistance is to encourage, on the one hand, greater participation on the part of the rural poor in the design, financing, implementation and management of rural development projects and on the other, more equitable participation in the benefits of development. High fertility may constitute a significant obstacle. For example, ability and willingness of women to participate in poverty-fighting activities may be affected by their child rearing responsibilities and pregnancy status, both of which are a function of fertility rates. Financial participation, through mobilization of personal savings will also be impeded to the extent that family savings are a negative function of family size. On the contrary, however, it is asserted that granting poor people, especially women, a greater share in planning and controlling their futures may help to reduce adherence to traditional family size norms and lead to lower fertility

rates. This hypothesis requires the project's attention so as to demonstrate the relationship between participatory rural development activities and population trends.

2. Alternative Rural Development Strategies --

Population deserves a central place in the theory of rural development. Customarily, poverty is defined in terms of inadequate income measured by some arbitrary level of per capita GNP. With equal logic, poverty could be defined in terms of the reciprocal, population/GNP. In other words, the problem of rural poverty could be defined as too many people for a given output. Family planning programs provide one way to slow population growth and allow income to catch up. This strategy is well documented and defended in the literature. What is missing is a tested theory of how rural development projects can be made to work so as to alter population growth. Further efforts are needed to apply theories of demographic change to strategy choice for developing rural areas.

3. Integration of Income-Producing and Social Service Activities -- Population growth and age/sex composition are prime determinants of demand for social services. These demographic dimensions are part of the normal planning process. However, plans should recognize the degree to which the expansion of social services coverage to rural areas affects rural couples' decisions about family size. It has been hypothesized that in many cultures numerous children represent a do-it-yourself system of social welfare

insurance for current services and as hedges against old age and its risks. It is unclear, however, to what extent the provision of new public social services affects this attitude and, hence, fertility rates. In this and other respects, just how the integration of social services and income producing functions impact on population requires more study in order to formulate specific hypotheses.

4. Area Development -- Planning the development of a given region must take into account the existing population, likely changes over time as the result of natural events, and changes wrought by development itself. Consequently, knowing and incorporating in project planning the implication of rates of natural increase are important. For instance, likely migration flows are of great interest to area planners. Demographic projections and analytical skill in using these projections are fundamental. Furthermore, some consideration must be given to ecological costs of increased development in a given area, and ultimately to the capacity of the region to sustain some maximum bio-mass: Nature's way of correcting for surplus population is often less humane than man's. Also, careful planning may be able to enhance carrying capacity by altering the development/population growth ratio, if we can identify the means, relationships, and consequences of the reactive factors.

5. Rural Marketing Systems -- For a given output, the rate of population growth affects the size of the marketable surplus on small farms. With lower fertility,

it is quite likely that a greater proportion of a given farm's output will be brought to market than otherwise would have. Furthermore, women will have more time to devote to raising cash crops if they have fewer children. Thus, population change can affect market flows. Conversely, how efforts to improve the equity, effectiveness and efficiency of rural markets may affect fertility patterns and perception will require further study. Moving up from subsistence levels through greater equity and more efficient markets may have more positive impact on fertility attitudes than we now know.

6. Rural Financial Markets -- Family size and spacing affect a family's ability and willingness to save. Therefore, efforts to mobilize savings are affected by demographic change. Demand for credit is also affected. First, family size and composition are traditionally important factors in determining creditworthiness. Second, family size and composition affect the financial requirements of the family. For example, the largest single source of demand for loans among small farmers in many areas, apart from production credit, is the desire to finance children's education. Such demographically related demands compete directly with production demands. Third, family size and composition may be an important factor in loan delinquency. For all of the above reasons, reduced family size is essential to improved rural welfare. One possible means of achieving this end which merits investigation is whether making credit available to women can in turn

bring them into new, non-traditional economic roles with a concomitant change in reproductive behavior.

7. Off-farm Employment -- The supply of labor, especially female, available for on and off farm employment should be sensitive to demographic change. If women have fewer children, they are more likely to seek additional work. At the same time, evidence is accumulating that, under the right circumstances, women who work in non-traditional jobs tend to have fewer children. The presence or absence of income producing off-farm job opportunities may have a more direct relationship to attitudes about the economic (i.e., insurance role of children) than has yet been determined. Linkages between outside income and reduced fertility rates needs further careful analysis.

The present project will explore the above hypotheses and others in an attempt to delineate more precisely the interrelationship between these and other rural development activities and population growth. This will be accomplished by means of four types of activities. First is the identification of individuals with expertise on rural development-fertility linkages who can be brought into an exchange network and who might serve as consultants to missions and LDC institutions in the field. Second is seven high-priority state-of-the-art papers which will derive from the literature a series of propositions concerning rural development-fertility linkages. Third is a collection of case studies utilizing "natural" experiments carried out in existing rural develop-

ment projects which will generate findings on the fertility impacts of rural development activities. Fourth is the dissemination of findings and guidelines for assessing the population impact of programs in rural development and how these programs stimulate people to plan family size or space their children. This will include seminars at which AID personnel receive instruction regarding how to collect and analyze data required to do a population impact assessment as well as how to discover and utilize the motivational aspects of education, health, agricultural production projects and other rural development activities to achieve reductions in fertility.

The Project Network

Persons and institutions with genuine expertise in rural development-fertility linkages will qualify for inclusion in the network regardless of whether they are or are not affiliated with a specific institution. This will include professionals who are citizens of developing countries, and LDC research and/or action-oriented institutions. The objective will be to establish a growing information exchange operation that will help to identify expertise in particular analytical areas, improving the quality of "tested" information that is distributed through the network and the interchange of practitioner/scholar information on how to do rural development with desirable population impacts.

State-of-the-Art Papers

The contractor will develop state-of-the-art papers which will draw together existing knowledge of the impact of rural development intervention strategies on fertility. Propositions about the direction and possible magnitude of the effects on fertility of rural development activities will be set forth in these papers.

The existing demographic literature is generally organized for academic purposes around the relationship between fertility and key intermediate variables influenced by rural development interventions. The rural development literature generally investigates the impact of selected interventions on a similar set of intermediate variables. There is also a small body of literature which directly examines the rural development-fertility relationship. Thus, the state-of-the-art papers represent an original effort to bring together the findings of several related bodies of literature in order to draw from them sets of propositions about the likely impact of rural development activities on fertility.

Source materials for the state-of-the-art papers will include academic journals, monographs, Agency reports, dissertations, and reports of other agencies working with rural development, fertility and related subjects. In addition to basic propositions about rural development and fertility, each paper will identify important gaps

in our knowledge and suggest an agenda for future research by interested institutions and individuals. Each paper will contain a selected bibliography of useful sources.

Consulting and Case Studies

So far there has been little progress in designing operational procedures for evaluating the overall impact of rural development programs on population growth or distribution. There is a considerable amount of literature on the determinants of fertility, mortality, migration, labor force participation, and other behavioral problems of rural development. Nevertheless, very little creativity has been expended on how to translate these findings into operational tools which can be used by AID missions and government personnel in LDCs to evaluate the social impact of a given program on fertility or vice versa. This part of the project attempts to close the existing gap between theory and applied evaluation practices.

Case studies will examine the population impacts of both completed and current rural development projects. In either situation, a project must have delivered services to the target population for a sufficiently long time (three to five years or longer) to have brought about changes in current fertility rates and other socio-economic characteristics.

Case studies will be carried out collaboratively as mission consulting activities. Mission RD and POP Offices, the local staff and host country analysis will work with cooperating scholar/consultants to select, document and analyze the most promising cases. The purpose of this will be to instruct the mission-host country participants on alternative approaches to fertility impact study while generating additional information to the larger study -- itself to be subsequently disseminated to others.

In some countries, two or more censuses will be available in addition to project generated data and regional statistics. In other countries, longitudinal data of this type will not be available (e.g., in the Sahel), and case study teams will have to rely on techniques such as the Brass Technique for estimating changes in fertility over time by comparisons of child-woman ratios for different age cohorts. Provided that sufficient funding can be made available, case studies will be undertaken of the following types of rural development activities:

- (a) rural roads;
- (b) rural electrification;
- (c) rural marketing systems;
- (d) rural financial markets;
- (e) integration of social services and income producing activities;
- (f) identification of appropriate technology,

- including labor-intensive public works;
- (g) off-farm employment generation;
- (h) region-wide development;
- (i) citizen participation in decision making.

Efforts are being made to locate missions which have fielded one or more of the projects in this list. Consultations with regional bureau and mission personnel will produce a final list of country projects to be analyzed.

For some case studies, the fertility project will realize large cost-savings in data collection by collaborating and supplementing the data collection efforts of other case-study teams as they assemble relevant longitudinal data for rural development projects in their critical problem areas.

Annex A includes a discussion of the theoretical issues involved in carrying out population impact assessments. Part 4, "Implementation Planning", includes a description of the case study sites and procedures followed in selecting those sites.

The bulk of consulting activities will be undertaken concurrently with the case study efforts. Initial consultations may involve advice on the identification and design of projects so as to have desirable impacts on fertility. Consulting in the later stages of the project will involve careful analysis of the population impact of

Short-term consulting independent of case studies will be available for project design and population impact analysis, particularly in the third and fourth years of the project. By then, a significant body of knowledge will have been assembled and a network of consultants identified.

Dissemination of Findings

This activity will be going on concurrently with the applied research work. State-of-art papers and case study reports will be printed and disseminated to organizations and individuals in the U.S. and LDCs who have an interest in population and fertility questions. Workshops at the beginning and upon completion of the state-of-the-art papers and case studies will announce the availability of these major components of the overall effort. During the case study phase, contractors and professionals will be available to AID missions in the site countries for consultation on population impact assessments. A regional workshop at the end of case study research in Asia, Africa, and Latin America will provide instruction to AID officers and selected LDC professionals on practical procedures for doing population assessments. Finally, the entire set of monographs (state-of-the-art papers and case studies) will be distributed to AID personnel and other interested parties. A summary guidebook on population impact assessment in rural development will be translated into French, Spanish, and selected other

languages to assist application within the LDCs.

B. Detailed Description

The general description of the project, presented in the preceding section on "Background and Justification," is supplemented by Annex B, "Logical Framework," which contains a detailed summary of project inputs, outputs, implementation targets, and important assumptions.

PART 3. Project Analyses

A. Technical Analysis Including Environmental Assessment

As pointed out earlier, the unifying analytical framework for the state-of-the-art papers and for the case studies is presented in Annex A, "Project Technical Details." This analytical framework is quite adaptable to differing environmental and cultural situation as well as to different types of rural development programs. Its application throughout the study should help AID officers identify the broad similarities inherent to rural development problems. This will provide a major payoff in terms of a common vocabulary and approach with respect to population impact assessment.

This project will not impact directly on the physical environment. However, it might produce a significant impact in terms of professional attitudes in the LDCs, particularly for those countries serving as sites for case studies. The inclusion of host country scholars in research teams and government officials in the workshops and regional seminars might influence university teaching, research, and studies prepared by government personnel. Indeed, the dissemination of the monographs and guidebook assumes this indirect payoff for the projects "environment."

B. Financial Analysis and Plan

1. Financial Rate of Return/Viability

The empirical and theoretical results from the present project will result in raising the returns from all rural development projects through clearer understanding of the impact on fertility and population distribution of development interventions. Most assistance projects are implemented without regard to their impact on population dynamics. This unfortunate condition exists largely because of a lack of clear understanding of how to gauge and analyze impacts. Suppose, for example, a mission is about to undertake a capital-intensive agricultural project. What is the population impact of this strategy? It could lead to a proletarianization of the rural labor force which, in turn, could induce higher fertility than otherwise might prevail. Applying the lessons and methodologies resulting from the present project, however, could suggest a redesign of the project to encompass more labor absorption (perhaps involving women's work outside the household) and hence promote reduced fertility. Thus the outputs of the present project could contribute materially to cost savings while reducing unanticipated consequences of anti-poverty projects.

The development of a systematic procedure for AID officers to use in doing such assessments is a necessary administrative task. This project will provide that

administrative input in a sufficiently general and practical form that AID will be able to become responsive to the requirements of Section 104(d) of the FHA in a shorter time.

Further, the project will involve selected AID mission personnel and host country professionals. From the beginning of the project, mission personnel are brought into the design of the frame of reference for site analysis, the specification of the highest priority state-of-the-art papers, and the selection of the case study sites. Host country professionals may participate in the case study work as joint authors with the SECID scholars primarily engaged in this enterprise under our proposed cooperative agreement with RTI. These features will bring practical field experience into the design of the project and should maximize the likelihood of an enthusiastic reception for its outputs.

2. Financial Plan/Budget Tables

Project costs to be borne by TA/RD are estimated to be \$778,010 with \$358,040 to be obligated in FY 1977 and the remaining \$419,870 to be obligated in FY 1979. These costs are estimated in the following tables on an expenditure basis. The first table presents the budget allocations to each project activity or output. The second table shows the expenditures by input categories. The cost

PROPOSED BUDGET BY OUTPUTS
(Expenditures)

	<u>FY 77/78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>Total</u>
<u>Applied Research and Consulting</u>					
State of the Art Papers	140,000	0	0	0	140,000
Consulting and Case Studies	15,000	95,000	250,000	0	360,000
Research Design Workshop	<u>28,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>28,000</u>
Total A	183,000	95,000	250,000	0	528,000
<u>Dissemination</u>					
Assessment Techniques Report	0	0	0	38,000	38,000
End of Field Work Seminars	0	4,000	6,000	0	10,000
Publication of State of the Art Papers and Case Studies	0	7,500	7,500	10,000	25,000
Regional Seminars	<u>0</u>	<u>0</u>	<u>0</u>	<u>14,000</u>	<u>14,000</u>
Total B	0	11,500	13,500	62,000	87,000
Network Development	10,000	4,500	4,500	4,500	23,500
Project Management	<u>23,000</u>	<u>23,000</u>	<u>23,000</u>	<u>11,500</u>	<u>80,500</u>
Total	216,000	134,000	291,000	78,000	719,000
Inflation (6%/year)	<u>--</u>	<u>8,040</u>	<u>35,970</u>	<u>14,900</u>	<u>58,910</u>
<u>GRAND TOTAL</u>	<u>216,000</u>	<u>142,040</u>	<u>326,970</u>	<u>92,900</u>	<u>777,910</u>
	358,040		419,870		

PROPOSED BUDGET BY INPUTS
(Expenditures)

Salaries and Wages (including 85% Indirect Technical Expenses)

	<u>FY 77/78</u>		<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>	
	<u>MM</u>	<u>&</u>	<u>MM</u>	<u>&</u>	<u>MM</u>	<u>\$</u>	<u>MM</u>	<u>&</u>
Senior Staff	7.5	42,422	5	28,281	5	28,281	3.75	21,210
Professional	--	---	--	---	--	---	4.5	15,291
Analyst	5	7,750	3	4,650	3	4,650	4.5	6,975
Secretary	7	8,050	4	4,600	4	4,600	2	2,300
Clerk	6	6,000	3	3,000	3	3,000	3	3,000
SECID Researcher/Advisors		<u>88,000</u>		<u>56,178</u>		<u>163,072</u>		<u>---</u>
Sub-total		152,222		96,709		203,603		48,776
<u>Other Project Costs</u>								
Travel		56,020		19,531		56,197		8,200
Other Direct Costs		<u>7,758</u>		<u>17,760</u>		<u>31,200</u>		<u>21,015</u>
Sub-total		63,778		37,291		87,397		29,224
<u>GRAND TOTAL</u>		216,000		134,000		291,000		78,000
Inflation (6%/year)		---		<u>8,040</u>		<u>35,970</u>		<u>14,900</u>
				358,040				419,870
						<u>PROJECT GRAND TOTAL:</u>		<u>777,910</u>

sharing contributions of RTI and the universities which comprise the Southeastern Consortium for International Development (SECID) are in addition to the budgeted costs to be borne by AID. Finally, it is assumed that AID and governments in the LDCs will bear travel and other costs of their personnel for attending the various workshops, seminars, and other activities associated with this project. The single exception to this will be travel expenses and honoraria paid to host country professionals for participation in case study research and in the preparatory workshop.

C. Social Analysis

Section A and B of Part 3 present several relevant points regarding the potential social net benefits from this project. These focus on higher quality training and research in LDCs, and improvement in the skills of host country professionals who participate in the case study work.

Another social benefit could be long-term improvement in the opportunities available to women in rural communities. It is anticipated that this project will identify many policy-manipulable variables and intervention strategies which will point toward policies and programs that can assist women in LDCs in removing themselves from various constraints on their individual freedom. To assist in this effort, the selection of collaborators from the LDCs for

the case study work will give high priority to the inclusion of host country women on the analytical team.

A closing point concerns a social impact in the United States. The composition of SECID is such that a majority of its member institutions are the 1890 land grant schools. Consequently, faculty members from these historically minority institutions will be participating significantly in this project. In fact, an objective of the contract is that at least one member from an 1890 school will be included in the team which collaborates on each state-of-the-art paper, case study, and every major consulting assignment. Already there have been several concept papers submitted from the 1890 schools and several more individuals have committed themselves to participation in the project. Therefore, the objective of extensive participation by minority group men and women seems destined to become a reality.

PART 4. Implementation Arrangements

A. Analysis of the Recipient's and AID's Administrative Arrangements

1a. Recipient Administrative Structure

The prime contractor for this project will be RTI. The Project Director, responsible to AID for timely delivery of goods and services under the contract, is Dr. Abraham S. David. He is head of the Office of International Programs at RTI. Dr. David will be responsible for overall management of the project.

Dr. R. W. Johnson of RTI's Center for Population and Urban/Rural Studies (CEPURS) will assist Dr. David in technical and administrative supervision. In particular, Dr. Johnson will be responsible for technical monitoring of sub-contract outputs from the Southeastern Consortium for International Development (SECID).

Dr. Edward Vickery is Executive Director of SECID. The Administrative Office of SECID will sign sub-contracts with its member institutions which wish to perform work under the project. Dr. Vickery will be responsible for management of these sub-contracts.

RTI will contract with SECID to perform the bulk of work under this project. Under its contract with RTI, SECID will let sub-contracts to its member institutions to carry out the work. Thus, the universities of SECID are responsible to the Administrative Office of SECID in the person of Dr. Vickery, The Executive Director. The universities of SECID are not directly accountable to RTI. The Administrative Office of SECID is directly accountable to RTI under its contract with RTI.

Some of the work on state-of-the-art papers and case studies will be performed by members of the RTI staff. Their time will be allotted to the project under the prime contract.

RTI staff participation in the project will be coordinated by Dr. Johnson of the RTI Center for Population and Urban/Rural Studies. It is anticipated that RTI staff will participate in all project tasks. University sub-contractors, accessed through the Administrative Office of SECID, will be used in writing the state-of-the-art papers, in the case study research and in field consulting. University personnel will collaborate as teams in writing approximately seven (7) state-of-the-art papers and conducting ten (10) case studies. These activities will be coordinated through SECID. Field consulting will be closely related to the case studies.

The SECID Administrative Office will coordinate the collaborative project work assigned to its member universities. In addition, the SECID Administrative Office will provide substantive professional inputs for some tasks. SECID was founded to promote and coordinate such collaborative efforts and its Administrative Office is ideally suited to this role. Since a significant amount of project work is anticipated to involve active collaboration of faculty from different SECID members, SECID's administrative

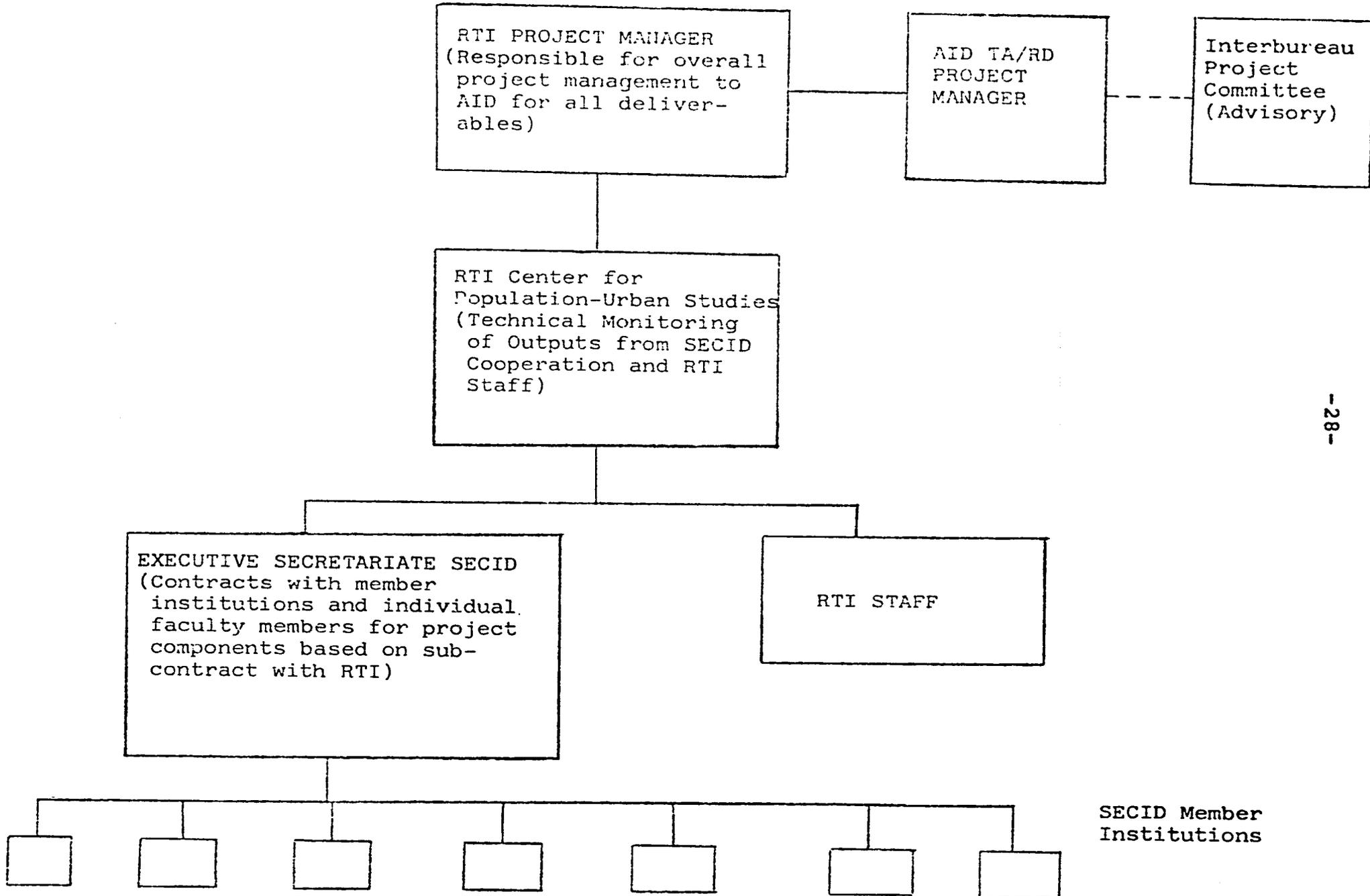
function will be substantial. Dr. Edward Vickery, Executive Director of SECID, will be responsible for overall management of the SECID sub-contracts.

Since RTI was awarded a Basic Memorandum of Agreement as part of the Expanded Program of Economic Analysis for Agricultural and Rural Sector Planning, and since RTI has for many years performed satisfactorily as a contractor for AID, it would seem that the management capability of RTI has been demonstrated. RTI also took the initiative in establishing SECID, thereby providing improved access for minority institutions to consulting opportunities with AID. Finally, the personal qualifications of the key professionals and their experience with collaborative research provides further evidence that the managerial capability of the proposed recipient is sound.

1b. Technical Collaboration and Review

Informal communication and technical collaboration is not constrained to the formal administrative structure described above. It is expected that discussions of a technical nature will occur among SECID team members, between teams and the RTI staff, and among all individuals associated with the project, regardless of their formal administrative roles or contractual ties. Communications will remain open and collegial.

ADMINISTRATIVE STRUCTURE

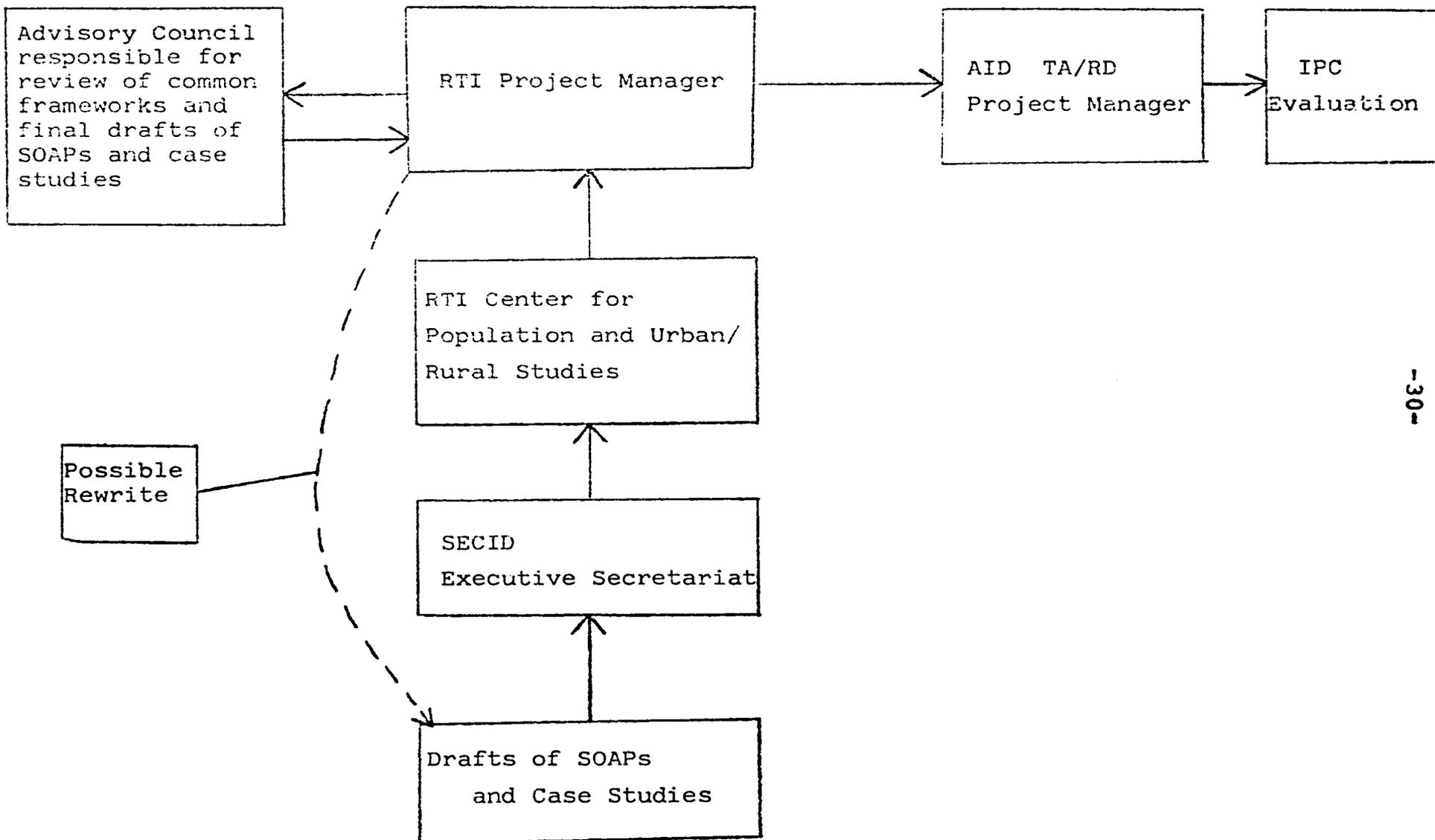


SECID Member
Institutions

However, the establishment of common frames of reference for the work and the review of final products will involve formal procedures. An "Advisory Council" of three to five recognized leaders in fertility research will be constituted. These experts will not be otherwise associated with SECID. Prior to each workshop, they will review a draft paper written by Drs. Vickery, David, and Weaver which will outline the common frame of reference for state-of-the-art paper work (first workshop) or case studies (second workshop). Members of the Advisory Council will be present at both workshops to act as resource persons.

In addition to their role in refining the common frames of reference, the Advisory Council will review drafts of SOAPs and case studies. Their role in maintaining quality control will reinforce the close association between RTI personnel and the working scholars. Drs. David, Johnson, and Vickery will discuss drafts and ideas with individual subcontractors and they will review papers before they are sent to the Advisory Council. Dr. David, as RTI project manager, is ultimately responsible for the quality of all final products.

TECHNICAL REVIEW PROCESS



2. AID

The TA/RD project manager will monitor the activities by participating in the various workshops and seminars, and by evaluating the networking function, state-of-the-art papers, case studies, and guidebooks which will be the outputs of this project. An interbureau project committee (IPC) will be established consisting of rural development officers and population officers proposed by the Rural Development Steering Committee. Periodic monitoring will be performed by the IPC and other AID officers including Mission personnel who will be involved in arrangements for the case studies and who will participate in the various workshops and seminars. The IPC will also advise the TA/RD project manager on the allocation of consulting and case study activities among countries in each region. Given the scope of topics to be covered, the number of activities, and especially the potential administrative tangles in a project combining a score of campuses, AID's staff manager can expect to devote at least half time to this project.

B. Implementation Plan

This project is scheduled to cover the four-year period, October 1977 - September 1981. The project "milestones" by months and type of task are presented in Table 3; Annex C represents the Planned Performance Tracking Network Chart.

In addition to the items listed in Table 3 as milestones, note that Annex C provides for the network of consultants to be initiated and expanded from the inception of project activity. RTI will assist AID missions and AID/Washington staff in filling requests for short-term consulting assistance. The existence of RTI's Indefinite Quantity Contract will facilitate access to the faculty of SECID members as well as other universities.

Much progress has already been made by RTI in identifying potential contributors to the state-of-the-art papers and case studies. In fact, ten concept papers have already been submitted by SECID faculty members and another ten have committed themselves to participate in the project. Six of the 1890 schools have one or more faculty members included in this group, and more are expected after the project gets underway.

Regarding the choice of case study sites, preliminary deliberations suggest the following as high priority countries:

<u>Asia</u>	<u>Africa</u>	<u>Near East</u>	<u>Latin America</u>
Indonesia	Ghana	Morocco	Ecuador
Pakistan	Kenya	Yemen	Jamaica
Thailand	Sahel	Afghanistan	El Salvador
	Sudan		

Table 3
Project Scheduling

I. Applied Research and Consulting

<u>Month</u>	<u>Task</u>
1	1. Identify State-of-the-Art paper writers - enter subcontract agreements
1	2. Identify countries for case study research (Research Memorandum)
1	3. Conduct workshops for State-of-the-Art paper writers
1	4. Contact host country case study participants
1	5. Initiate State-of-the-Art papers
2	6. Identify variables to be examined in case studies (Research Memorandum)
9	7. Conduct workshop to review drafts of State-of-the-Art papers
12	8. Submit final drafts of State-of-the-Art papers (report)
9	9. Conduct workshop on research design for case studies
10	10. Initiate field work on case studies
39	11. Submit final case study reports (report)

II. Information Dissemination

<u>Month</u>	<u>Task</u>
33	12. Initiate preparation of Report on Techniques for conducting Population Impact Assessments
39	13. Submit draft of Assessment Techniques report (report)

II. Information Dissemination (continued)

<u>Month</u>	<u>Task</u>
42	14. Submit revised draft of Assessment Techniques report (report)
42	15. Submit project final report (report)
13-36	16. Conduct end-of-field-work seminars in each case study site
33	17. Conduct regional seminars
36	18. Publication of project findings report

III. Networking

<u>Month</u>	<u>Task</u>
1	19. Initiate development of network
6	20. Submit network to AID (report)
12	21. Update network entries (item)
12	22. Initiate consulting to missions
18	23. Update network (item)
24	24. Update network (item)
30	25. Update network (item)
36	26. Update network (item)
42	27. Update network (item)
48	28. Update network (item)

Each of these sites is characterized by having reasonably high quality data sets from which the minimum requirements for baseline and follow-up data on population variables could be generated. Furthermore, each of the above countries has had a significant amount of rural development programs underway for many years. They would seem to be well qualified for host countries of the case studies. The Interbureau Project Committee, in consultation with the Rural Development Steering Committee, will be involved in the final selection of countries and the choice of rural development projects to be used for population impact assessments.

Similarly, the design and implementation of state-of-the-art papers and case studies will be done with the collaboration of host country professionals as time and funding constraints permit. The LDCs represent the major beneficiaries of this project in the long run. Also, it is indigenous scholars who must provide the insights into local customs and language which will improve our understanding of the interrelationships between population phenomena and rural development programs. The implementation plan, therefore, provides several mechanisms for bringing indigenous scholars into the project. First, the network of consultants will include LDC professionals.

They will be contacted about consulting opportunities in other countries as well as their own. Second, the budget for the state-of-the-art papers provides for some travel to confer with particularly promising sources of expertise in the LDCs. Third, the workshops and seminars for state-of-the-art papers and case studies call for the inclusion of LDC professionals. Fourth, timely provision of mission consulting and completion of case studies require LDC collaborators. Fifth, the training activity at the regional seminars in Asia, Africa, and Latin America will be improved by the participation of the host country professionals who worked on the case study.

C. Evaluation Plan

Evaluations are scheduled for each major project activity as follows:

12 months -- State-of-the-art papers will be submitted to TA/RD for review.

23 months -- An in-depth evaluation will be undertaken by the Interbureau Project Committee of progress in network development, mission consulting, and the applied case studies of project fertility impacts. Viability and utility of the research design governing the case studies will be analyzed since the case studies will be examined. The predominance of applied research funds will be obligated

in FY 79. Thus, shortcomings spotted at this evaluation point can be overcome before the major case study efforts begin.

39 months -- Final case study reports will be submitted to TA/RD and the Interbureau Project Committee for review.

45 months -- A final evaluation of all components of the project will be conducted by TA/RD and reviewed by the Interbureau Project Committee to determine whether the project has achieved its purpose of (1) identifying the demographic impacts of such areas as agricultural production, infrastructure and other rural development programs, projects and activities; and (2) isolating the factors in RD projects which appear to motivate couples to have smaller families or to space their children.

Annex A: Project Technical Details

Introduction

Annex A consists of two sections, each divided into two parts. Section I discusses the state-of-the-art papers and Section II is devoted to the case studies. This introduction describes the organization of the technical discussions of project issues and methodology in Sections I and II.

Section I, part A sets forth in greater detail than was possible in the body of the project paper the organization of material to be synthesized in state-of-the-art papers. Each paper will investigate the impact of a rural development intervention on fertility. These interventions include:

- (a) rural roads;
- (b) rural electrification;
- (c) rural marketing systems;
- (d) rural financial markets;
- (e) integration of social services and income producing activities;
- (f) identification of appropriate technology, including labor-intensive public works;
- (g) off-farm employment generation;
- (h) region-wide development;
- (i) citizen participation in decision making.

The literature which will be reviewed by state-of-the-art paper teams is not organized around the investigation of rural development strategies, of course.

Rather, the literature is organized around the problem areas set forth in Section I, Part A. Aspects of these problem areas germane to the rural development-fertility linkages are discussed in sub-sections (1) through (7).

Section 1, Part B presents a theoretical approach to analysis of fertility behavior which provides a common

approach to the state-of-the-art paper teams. It is not expected that teams will estimate coefficients for the Easterlin model or establish causal relations.

The social sciences, especially economics, would like to be able to specify cause and effect relationships as is done in the physical sciences. However, the best one can usually do in investigating human behavior is establish the association of changes in one variable (income, for example) and another variable (number of surviving children), while controlling for the effects of other variables. Consistent findings of a certain relationship between two variables may lead a social scientist to argue loosely that one is the "cause" and the other is the effect. However, changes in a third intervening variable, such as public health expenditures, may in fact represent a substantial portion of the underlying "cause" for both changes in income and the number of surviving children in our example.

Similarly, we may observe that a certain kind of rural development intervention is consistently associated with changes in the fertility of the target population. The "true" cause for changes in fertility may be something which interacts with the RD intervention. But in the absence of better information, the best policy for obtaining changes in fertility would appear to be the rural development intervention most consistently associated with

such changes, while at the same time attempting to more clearly identify the "causal" components leading to changes.

The state-of-the-art papers and case studies will involve a more sophisticated analysis of the simple kinds of associations discussed above. Careful study will attempt to identify the complex of factors which must be present for a rural development intervention to "cause" a change in fertility.

Section II describes the methodologies for case studies which will be employed to assess population impact of rural development projects. A modeling approach will be used whenever data is complete enough. Case study teams are not restricted to, nor are they expected to use the Easterlin model since in most if not all cases, sufficient data would not exist to permit its use. An experimental approach will be used in those cases where data is too costly to gather or unavailable. The results of both approaches will provide evidence on the direction and, ideally, the magnitude of impacts on fertility due to changes in intermediate variables influenced by RD interventions. These findings will be summarized in guidebooks for use by AID missions and government personnel in developing countries. The guidebook will provide these practitioners with the means for making educated guesses about the likely impact of a rural development intervention on fertility.

Annex A: Project Technical Details

I. State-of-the-Art Papers

A. General

RTI will develop state-of-the-art papers which will review the writing on the impact on fertility and population distribution of various development intervention strategies. Special attention will be given to finding accounts of how the following factors affect motivation and practice to limit family size as well as the distribution of population within a state or region:

(1) rural-urban migration -- The existing literature documents persistent rural-urban net migration and higher fertility rates in rural locations. There is considerable variation, however, spatially and temporarily in these migration and fertility rates. The potential determinants of migration will be examined and the separate influence of "push" vs. "pull" factors will be reviewed due to their different implications for policy. Particular attention will be paid the effect of high fertility rates on net out-migration from rural areas. Cultural and political constraints to migration will be investigated in order to improve our understanding of the wide range of processes and structures these concepts subsume and their impacts on fertility. The likely significance of policy-manipulable variables such as improved transportation,

communication about job opportunities, amenities in original and destination areas, educational opportunity, and land tenure systems will also be studied. Finally the consequences on origin and destination areas of returning migrants will be analyzed.

(2) land tenure, quality, and utilization -- The tenure arrangements and land use patterns in a particular area appear to be closely linked, but their influence on fertility behavior has not been analyzed thoroughly. Ownership of land, the basic production input for rural communities, may affect significantly the fertility behavior of rural people although here the hypothesized relationships are contradictory: i.e., increased land ownership may serve to reduce the demand for children as providers of old-aged security yet increase their labor utility. Another concern is how variations in the quality of land and undesirable ecological changes (e.g., desertification) change fertility behavior. Different land utilization techniques, such as land rotation systems in Africa and the intensive cultivation practiced in Asia, may be contributors to fertility differentials through their different implications for labor needs, family size to living area, variety in foods produced by family unit, and so forth.

(3) shifts from traditional to non-traditional roles for women-- The most obvious influence in this category

involves employment activities. Shifts from farm to nonfarm employment, subsistence to market-oriented production, and labor-intensive to mechanized production techniques all have been cited as producing major consequences on family size and the spacing of children. Indicators of emerging non-traditional roles include decreased participation in traditional festivals (such as the cofardillas of Central America), increased participation in sports and political activities, reduced duration of breast feeding and the use of infant food commercially prepared, and increased frequency of travel away from the family's living site. The theoretical literature on role taking and reference groups will be screened to abstract ideas on how role change is begun and directed. Attention will be given the evidence that traditional male role playing (such as the Latin "macho") is a major determinant of female sexual and reproductive attitudes and behavior. Where senior females of the extended family are "significant others" and reinforce traditional female role expectations, we shall look at the impact of housing programs which emphasize the nuclear family in assigning space (e.g., Hong Kong and Singapore).

(4) perceived benefits and costs of children --

Children provide potentially a wide range of gratifications including amusement, old age security, and prestige -- as well as labor inputs. The value placed on each will vary from situation to situation. This paper will

explore the literature on the perceived costs and benefits of children in a wide range of locations and social class and living conditions. It will be especially sensitive to the influence of environmental factors that are policy-manipulable to the perception of children's value. Finally, we shall investigate the evidence for the utility of various incentive schemes in producing a voluntary fertility control or spacing of children. (See B. Herz, "Socio-Economic Policies to Encourage Small Families," Workshop on Reducing Fertility through Beyond Family Planning Measures, Penang, Malaysia, 26-29 Jan. 1976, pp. 20-27.)

(5) income and wealth -- Published sources stress the significance of income as a determinant of reproduction. Much less attention has been given the issue of distribution of income within the family and household. That is, it seems to make a difference which family member receives the additional income: additional income generated by women appears to be associate with greater decline in fertility than equal increments earned by children or males. Nonmonetary wealth, such as equipment, home furnishings, surplus food and so forth, appear to be associated with variable fertility behavior; but little attention has been paid the relations between wealth and fertility.

(6) education in and out of school -- Education functions as a multi-purpose variable which is associated with wide range of demographic and population behavior.

We shall be especially concerned with the influence of nonformal and out of the classroom education as a motivator of fertility behavior.

(7) nutrition, disease control, and maternal and child health services -- Variations in health status and services available, nutrition knowledge, attitudes and practices, and the presence and extent of diseases influence fertility directly and indirectly. The literature contains evidence that in societies where infant and child mortality rates are high, parents "over reproduce" in order to assure themselves surviving offspring. However, the arguments about the attitude and knowledge bases of this behavior are contradictory. We shall attempt to summarize the predominant arguments, review the data presented, and formulate a clear set of researchable hypotheses regarding the impact of nutrition, health services and disease control activities on fertility.

Each state of the art paper will follow a similar format and employ an identical analytical framework. The format will facilitate integrating the findings of the work and will reinforce complementarity of the independently written documents. Each author(s) will review published sources for theoretical and empirical linkages among fertility variables and education, nutrition, disease control, maternal and child health services, agricultural production, infrastructure activities and other rural

development activities. From this review, two types of operational guidelines will be generated: the first will concern the direction of influence of various development activities on fertility. The second will provide guidance on the expected approximate magnitude of influence in different types of environments, cultures, and socio-economic target groups. No new data will be generated for this task -- the papers will abstract and draw together existing findings and translate them into first-order operational planning and evaluating guidelines.

The total effort will result in a set of monographs on population impact and fertility motivation organized by type of rural development intervention which will be distributed to AID missions and other appropriate groups. Although each paper will stand alone, the entire set will be linked by a common theoretical approach. The analytical framework in each paper will represent a variant of the unifying theme.

B. The Unifying Theoretical Approach for State of the Art Papers

A theoretical approach to analyzing fertility behavior which seems flexible enough to meet the needs of this project was developed by Richard Easterlin. The model which is outlined below, serves as a useful analytical framework for the state of the art papers.

Easterlin offers a three-function model of the demand for children, the supply of children, and the

motivation for controlling baby-making. He treats the demand function as embodying the principal ideas of economic approaches to fertility. This reflects much of the recent literature which sees the demand for children as instrumental to child services. Thus the demand for children fits into the familiar framework of consumption theory which views a family as attempting to maximize overall utility within the constraints imposed by their available time and income. Easterlin emphasizes that the dependent variable in the demand function should be the desired number of surviving children rather than number of births.

The supply function is the primary focus of sociological analyses. The typical sociological study proceeds from discussions about frequency of intercourse and the reproductive capacity of a population to analyzing the acceptance of various methods of fertility regulation. The dependent variable is the number of surviving children a household would have in an unregulated child-bearing regime. This definition is consistent with the demand function and allows for regulation of supply by means of fertility control practices.

The third function, motivation for fertility regulation, is hypothesized to depend on the prospective number of unwanted children and the costs of specific contraceptive techniques. Situations of excess supply could develop due

to inefficient regulation by contraceptive practices. Excess demand can also occur, but this situation will not involve fertility regulation. Generally, the attainment of long-run, stable equilibrium (zero excess demand or supply) depends on efficient contraceptive practices.

While Easterlin's three-function model provides a bare-bones synthesis of economic and sociological approaches to fertility and population distribution behavior, it must be modified to serve as an adequate structure on which to build the present research. Specifically the list of functions must be expanded to include the following behavioral relationships which influence and are in turn influenced by one or more of the dependent variables in the Easterlin model:

- (a) labor force participation -- The recent literature (e.g., those in Schultz, ed., 1973) stresses the significant effect that women's decisions to work, particularly in jobs outside their traditional sphere of farm labor and trading, can have on numbers of children as laborers is viewed as another important function to be included (Bilsborrow, 1977).
- (b) education -- The most obvious functional relationship to be added for education concerns the formal training of children. The theoretical interdependency between fertility, women's labor force participation, and the education of children is well known (Mueller 1972; Schultz 1973). Another candidate might be adult education, although this does not appear to be a major activity in most rural environments.
- (c) health and nutrition status -- Both maternal and child health are viewed as decision variables with obviously close links to fertility behavior.

Maternal health not only affects the ability to produce children and to participate in the labor force, but also influences child mortality. Even more widely recognized is the theoretical influence of child mortality on desired number of children and the spacing of births (Schultz, 1969; O'Hara, 1972). Nutrition status clearly influences health status and labor force participation, but is itself a decision variable which should be specified as a separate functional relationship.

- (d) migration -- The best advertised link between fertility and migration is the relatively lower fertility rates reported for urban versus rural areas. But the decision to migrate is believed to be determined by differences in labor force participation opportunities in urban and rural locations (Harris and Todaro, 1970). Hence the migration decision qualifies for inclusion as a separate function in the model.

With these additions to Easterlin's model, we have the full set of functions which, in most rural environments, will describe the types of interdependent family decisions which impact upon fertility behavior and are influenced by it. The next step in specifying our model is to identify the major categories of independent variables which, along with the dependent variables for the above functions, combine to determine family behavior with respect to decisions in each of those functional relationships. The following categories of independent and pre-determined variables were identified by Easterlin as relevant, particularly with regard to the desired number of children:

- (a) income -- Not only does this involve monetary earnings and wealth, but also the value of available non-work time (Becker's "full income"). Of course the impact on fertility behavior will vary depending upon who in the family

generates which portion of total family earnings. Other things equal, higher levels of earnings for males should lead to increased fertility, while higher earnings for females (before as well as after marriage) would be expected to reduce fertility (Schultz, 1974). Higher expectations to contributions to family income from the earnings of children should affect fertility positively, since this increases the economic value of children.

- (b) relative opportunity costs, children vs. alternatives -- A major component in the "price" of children is the opportunity cost of parents' (mainly mothers') time. As noted above for income, the higher is the value of time for a married female, the higher will be the opportunity cost of withdrawing from the labor force in order to raise a family. Other goods and services provide alternatives to children with respect to the allocation of time and income available to a family. Because of this, the economic literature hypothesizes that families perceive trade-offs between quantity and quality of children versus alternative expenditures on goods and services (Becker and Lewis, 1973). Consequently, increases in opportunity costs in raising children relative to purchasing improved housing or other durable goods, for example, would tend to yield decreases in fertility, and vice versa.
- (c) tastes or preferences -- Economists typically ignore this category of variables. (For a notable exception, see Turchi, 1977.) Sociologists, demographers, anthropologists, and political scientists have provided the leadership in recognizing the dominance of these variables in determining fertility behavior (Easterlin, 1969). The existing literature suggests the importance of the factors listed below in molding the tastes or preferences of parents with respect to fertility behavior:
- (i) religion
 - (ii) social reference groups (race, tribe, caste, educational level, occupational type)
 - (iii) family structure (nuclear vs. extended)
 - (iv) nature of sexual unions (types, age of entry, stability)
 - (v) location of residence (urban vs. rural)

(vi) social mobility (opportunity for mobility, determinants of prestige)

Variables representing one or more of these six categories would be included as explanatory variables in each of the behavioral functions specified earlier. In the economists' view they represent either stimuli or constraints to the income and opportunity cost signals being transmitted to families as decisionmakers on fertility and the other behavioral questions (Easterlin, 1969). This conceptualization, along with the interactive nature of the behavioral functions specified above, provides a synthesis of the potential contribution of all social sciences to the explanation of fertility behavior.

Rural development programs enter the model by means of affecting either directly or indirectly the dependent and independent variables of the model. This is illustrated for one variant of our model by Figure 1, which depicts a "model of interdependent household decisionmaking." The boldly lined boxes denote four policy "systems" which can be manipulated by designing and implementing rural development programs. The boxes with dashed lines denote the decision variables or behavioral functions which will be influenced either directly or indirectly by a rural development program. The remaining boxes with solid lines represent independent variables. The arrows denote the hypothesized directions of influence among the set of interdependent functions and variables.

To describe briefly the impact that one type of rural development program might have, we consider the case of a program for improving farm-to-market roads. We follow

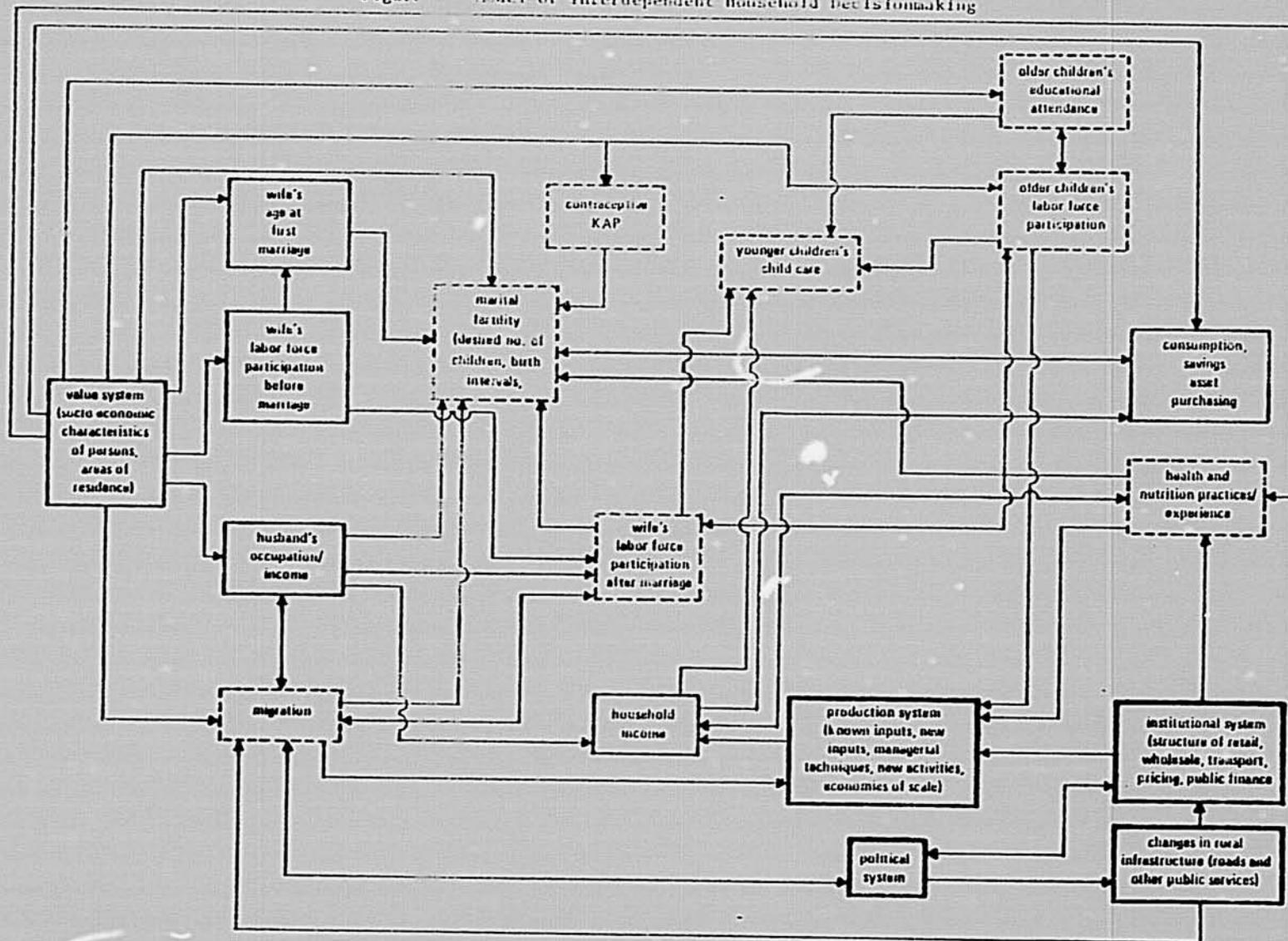
the arrows from the boldly-lined box in the lower right-hand corner of Figure 1. Its direct influence would impact on migration (by providing improved access for various modes of passenger traffic) and on the "institutional system" (by reducing the cost of transportation). The reduced cost of transportation would tend to be passed on at least partly to the consumers of transport services, which is signified by the arrows to the "production system" and to "health and nutrition practices" (e.g., reduced time and money costs of traveling to health clinics). The reduced transportation costs in this illustration will tend to stimulate (a) an expansion of output, thereby leading to a rise in real household income (which is then transmitted into another round of allocative adjustments), and (b) an increase in health status (which impacts directly on fertility and household income, and through them on the entire system).

At minimum, each state-of-the-art paper will synthesize existing knowledge about the likely influences of a specific type of rural development program or policy on fertility, migration, and contraceptive practices. This will not only be done in diagrammatic form similar to Figure 1, but also verbally in considerable detail. Further, the existing literature will be examined for the effects of different "taste or preference" variables on inhibiting or stimulating responses of rural residents

to the changes brought about by a particular type of rural development program. This will provide clear guidelines to AID Missions regarding the range of impacts they might project for whatever rural development program is being considered.

For some types of policies and programs, the existing literature may yield empirical findings which permit statements about the magnitude of impact as well as the direction. Each state-of-the-arts paper will at least summarize the available empirical findings. If the existing work is of sufficiently high quality, upper and lower limits to the magnitude of impact might be included as guidelines for program officers in AID Missions. Finally, all major hypotheses about linkages between rural development and fertility will be examined to ascertain how adequately they have been tested in the existing literature. This will assist in the selection of case study sites for empirical work in the later stages of the project.

Figure 1 Model of Interdependent Household Decisionmaking



II. Practical Assessments of Population Impact -- Case Studies

A. Methodological Issues

The purpose of this component of the project is to measure the overall impact of different kinds of rural development programs on fertility. The measurement of social impact for any type of rural development program can be quite complex. Hence it is fortunate that RTI has produced a population impact assessment methodology which is being employed currently by the IBRD in a study of feeder roads in Brazil. The present project will benefit greatly from this past experience on the part of several RTI senior staffers now associated with the subject activity.

Typically, it is impossible to observe directly the separate impact of a given project on fertility. A comparison of baseline and follow-up surveys will reveal only that changes occurred after implementation of a project. But the task of impact assessment is to determine what part of observed total changes can be attributable to the project being analyzed. Since some changes would have occurred (due to other influences) even if the project had not been undertaken, the changes generated by the project must be inferred rather than observed directly.

There are two principal methodologies for making such inferences. One is the comparison of experimental and

control groups. The experimental group consists of that population which lies within the influence area of the project being studied. The control group is usually characterized as being very similar to the experimental group, except that it does not receive a project like the one being studied. If baseline and follow-up surveys are administered to both groups, a comparison between changes in the experimental group and changes in the control group will yield rough estimates of net changes attributable to the project. In social science rarely will a control group serve as an ideal proxy for the "without project" case, since a variety of differences between the two groups invariably creep in despite the greatest care being exercised in selection. A second problem with this approach is the practical and political difficulty of denying a project to a certain population on grounds that they must serve as a control group.

The other methodology is the "modelling" approach. The functional relationships specified in the unifying theoretical framework would be estimated for the different categories of social impact that might be anticipated from a certain type of rural development project. The impact of that project on, say, desired number of children would then be inferred by means of (1) the coefficients which estimate

the responsiveness of desired number of children to changes in quantity or quality of various explanatory variables in that function, and (2) the effect of the project being analyzed on each of those explanatory variables. This allows an estimate of the separate (partial) impact of the project while taking account of simultaneously occurring forces which lie totally outside the influence of that project.

The basic message, therefore, with respect to operational impact measurement is that some type of modelling or statistical inference technique almost certainly will be required to control for all the exogenous non-project influences on the potential impacts being monitored. Physical control over all outside influences, such as in a pure experimental design setting, will usually be impossible. This argument is given added weight by the fact that in any country a combination of rural development policies will seek to bring about a large number of changes simultaneously. There will be many competing and complementary influences combining to generate a given observed impact. Impact assessment methodologies which are designed for application in less developed countries must be capable of coping with this analytical issue.

B. Practical Procedures

Case studies will be undertaken which will demonstrate how to do population impact assessments for different types of rural development programs. Existing data will be used whenever feasible in order to reduce the overall costs of this project. Two approaches will be taken. One will represent the minimum approach which can be applied when time or money constraints prevent a more detailed study. The other will represent a more ideal approach. Both utilize practical procedures which are well tested in previous work on impact studies.

The minimum approach makes use of the experimental vs. control group methodology discussed in the preceding section. First, the area of influence will be identified for the rural development program being studied. Next, control groups will be selected. Identification of these control groups will be based on a comparison of the values of various "social indicators" (income levels, health facilities, transportation availability, types of economic activity, educational attendance/attainment, etc.) in the program-influence area and in the various candidates for control-group areas. The objective will be to identify one or more control groups which have values of social indicators which are very close to those reported for the

program-influence area. In addition, the selection will be constrained (if possible) to those control groups which are in the same general region as the program-influence area which they are being selected to represent. This latter condition will ensure similarity of government administration, cultural situation, (and tenure and utilization patterns) and a variety of other factors which vary geographically. Finally, the control groups should not have received the type of rural development program being analyzed. Controlling in this manner for exogenous influences, a comparison of changes in population variables, program-influence vs. control groups, will yield crude measures of population impacts which are associated with the rural development program under investigation.

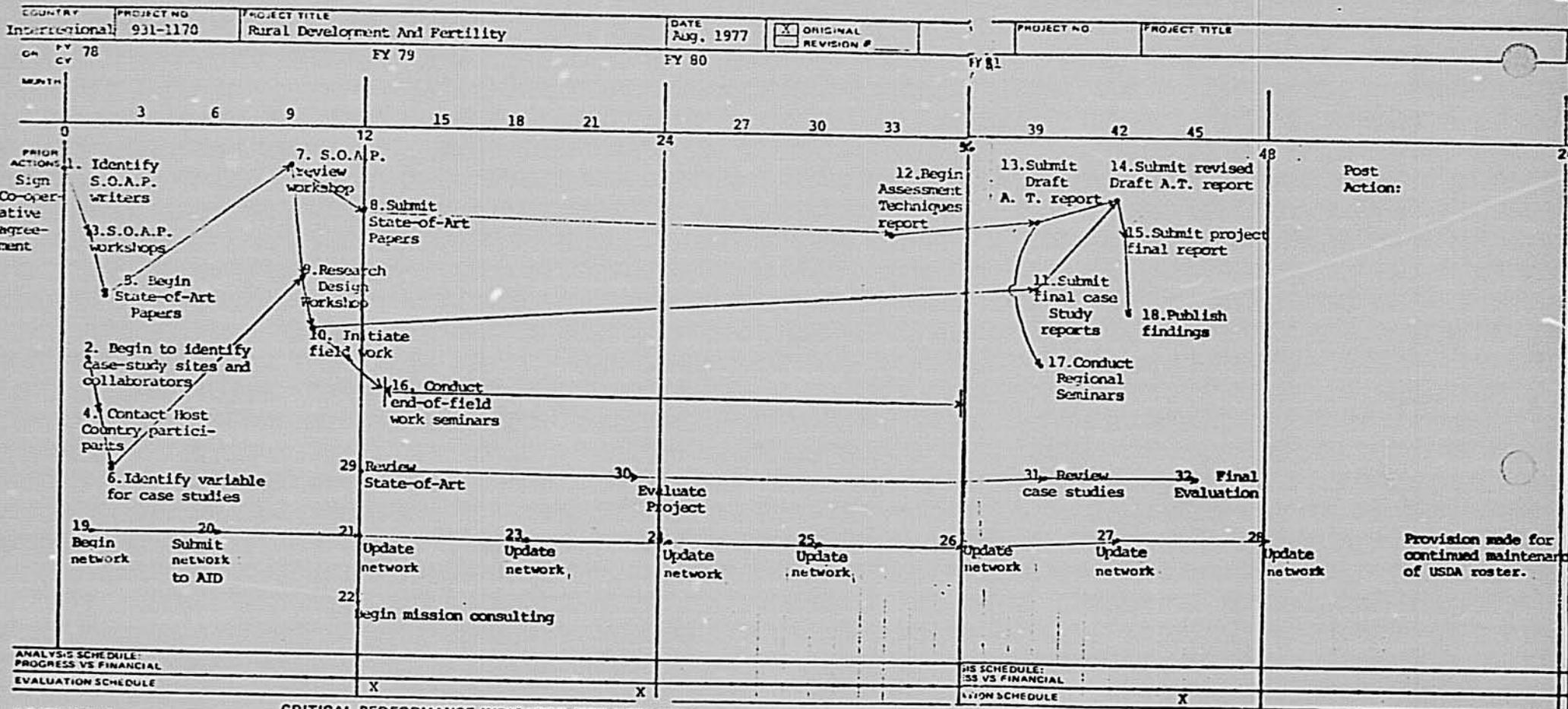
The alternative approach, which is theoretically superior to the experimental vs. control groups methodology, follows the modelling procedures recommended above. This involves inferring the population impact of a particular rural development program by means of multivariate statistical estimates of the parameters of the relevant functions in the system of relationships specified above. The separate effect of each component of a rural development program can then be estimated through its impact on one or more of the explanatory variables in each function. The estimated

parameters for those variables can be used to produce estimates of the direct and indirect (working through other variables) impacts on fertility, migration, and other population-related dependent variables of the model.

The problem with the above approach is that it magnifies the data requirements many times. Baseline and follow-up data will be needed for all of the variables included in the functions to be estimated. Nevertheless, there are some data sets which will be available for this type of analysis and which seem to possess most of the qualifications necessary for carrying out a population impact study. These candidate data sets are identified in the main text.

For each of the case studies, guidebooks will be developed for use by AID Missions and by government personnel in the developing countries. A special effort will be made to translate the results of the empirical work from the case studies into operational planning tools. One desirable possibility would be to convert the regression coefficients estimated in the case studies to elasticities, i.e., the percentage change which might be predicted for the dependent variable (desired number of children, say) in response to a given percentage change in each of the explanatory variables. The guidebooks could also indicate clearly

the situations in which the resultant elasticity might safely be applied. An AID program officer could then, theoretically, estimate the fertility impact of the program by (a) estimating its likely impact on the explanatory variables in the procreative function, then (b) multiplying the result from (a) by the elasticity. It is unlikely, however, that the case studies will generate sufficient and adequate data which will make it possible to employ the model in this fashion. We shall have to generally content ourselves with far less ability to make such precise predictions. Nonetheless, the present project, even if it cannot achieve such vigorous objectives, will move a long step our understanding of opportunities and motivations development projects offer the rural poor to limit family size or space children.



AID 1020 38 (8 78)

CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

1 25 (8-78)

CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX B

Life of Project:
From FY 1977 to FY 81
Total U.S. Funding \$777,910
Date Prepared August 1977

Project Title & Number: Rural Development and Fertility

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: To enhance the ability of AID missions and IIC institutions to design and implement programs directed toward increased productivity, income and quality of life of the rural poor.</p>	<p>Measures of Goal Achievement: Reduction in priority which Missions give to assistance in dealing with population impact issues. Improved quantification for assessing impact of AID projects on fertility and other population variables. More RD projects make use of population-related incentives. Better population impact evaluation information from projects which then aids in policy formulation.</p>	<p>Content of RP's, evaluation reports, and completion reports for future projects. Mission, regional Bureau, TAB, FBA and other AID/W observations of utility of guidelines and consulting approaches developed in this project. AID & outside judgments of utility of methods for evaluating impact of rural development projects on fertility and population growth.</p>	<p>Assumptions for achieving goal targets: Data gathering and analysis initiated by Missions and host governments is carried through to completion. Information gathered for these studies and analyses is used in decision making.</p>
<p>Project Purpose: To generate new knowledge about the effects of rural development on fertility.</p> <p>To marshal existing and new knowledge in convenient digestible form for practitioners. To assist mission programs by providing access to consultants to build concern for fertility-rural development relationships into their programs.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status. System exists for disseminating materials and information to LIC's, AID missions and others interested in RD-fertility relationships. Information developed in state-of-knowledge and case studies. Information being used by AID missions and consultants in program design. Network of consultants developed.</p>	<p>Network functioning and Missions using consultants. Verified by BRSC and by SPHII case researchers. Missions' project documents refer to materials and findings resulting from project. Materials flowing through established system. Requests for additional material, data and consulting services from Missions.</p>	<p>Assumptions for achieving purpose: AID and IIC practitioners recognize need for information on population impact of rural development projects. U.S. and LIC professionals will be able to collaborate in design and implementation of studies with conclusions relevant to policy decisions.</p>
<p>Outputs: Project network. State of knowledge studies. Case studies/applied research, and consulting assistance for missions. Guidelines for evaluating impact of RD projects on fertility. Information dissemination.</p>	<p>Magnitude of Outputs: - Network identifying potential U.S. and LIC consultants updated twice yearly. - 7 state of knowledge studies. - Request by missions for consulting assistance - Set of planning monographs on population impact studies. - Assessment Techniques - Guidebook for AID missions. - Regional seminars at locations overseas. - End-of-fieldwork seminars.</p>	<p>Final case studies and state-of-the-art papers accepted by TA/RD and RD Steering Committee. Direct monitoring and involvement by TA/RD. Data, research design and results of study and analysis accepted by TA/RD and RDSC. Roster being used by AID. Research strategy papers accepted by TA/RD. Distribution lists verify demand for use of materials.</p>	<p>Assumptions for achieving outputs: University resources can successfully link research to policy decisions in rural development. High quality consulting talent not now available to AID can be found and mobilized.</p>
<p>Inputs: Co-operative agreement with RTI. A TA/RD staff member to assume management responsibility and substantive involvement in overall effort. Other TA/RD staff inputs.</p> <p>Guidance and decision-making by RDSC. Mission and host government financial commitment which also simultaneously serves their own planning needs.</p>	<p>Implementation Target (Type and Quantity) Budget \$777,910 over 4 years.</p>	<p>Regular AID reporting requirements.</p>	<p>Assumptions for providing inputs: Project is approved. Cooperative agreement with RTI is reached. Agreements can be reached with Missions and host governments to facilitate and cooperate in applied research and consulting activities.</p>

PROJECT PURPOSE (FROM PIP FACESHEET)

- To generate new knowledge about the effects of rural development on fertility (primary) and the consequences for rural development of high fertility rates. (secondary)
- To marshal existing and new knowledge in convenient digestible form for practitioners.
- To assist mission programs by providing access to consultants to build concern for fertility-rural development relationships into their programs.

I. Applied Research and Consulting

Month	Task
1	1. Identify State-of-the-Art paper writers -- enter subcontract agreement
1	2. Identify countries for case study research (Research Memorandum)
1	3. Conduct workshops for State-of-the-Art paper writers
1	4. Contact host country case study participants
1	5. Initiate State-of-the-Art papers
2	6. Identify variables to be examined in case studies (Research Memorandum)
9	7. Conduct workshop to review drafts of State-of-the-Art papers
12	8. Submit final drafts of State-of-the-Art papers (report)
9	9. Conduct workshop on research design for case studies
10	10. Initiate field work on case studies
39	11. Submit final case study reports (report)

II. Information Dissemination

33	12. Initiate preparation of Report on Techniques for conducting Population Impact Assessments
39	13. Submit draft of Assessment Techniques report (report)
42	14. Submit revised draft of Assessment Techniques report (report)

Month	Task
42	15. Submit project final report (report)
1-36	16. Conduct end-of-field-work seminars in each case study site
33	17. Conduct regional seminars
36	18. Publication of project findings report

III. Networking

1	19. Initiate development of network
6	20. Submit network to AID (report)
12	21. Update network entries (item)
12	22. Initiate consulting to missions
18	23. Update network (item)
24	24. Update network (item)
30	25. Update network (item)
36	26. Update network (item)
42	27. Update network (item)
48	28. Update network (item)

IV. Evaluation

12	29. Review State-of-the-Art papers
23	30. Evaluate project and make adjustments
39	31. Review final case-study reports
45	32. Final Evaluation

Post Action

Provision made for continued maintenance of consultant roster.