

PD BAB187

NEW

I. PROJECT IDENTIFICATION

1. PROJECT TITLE DANPA RURAL HEALTH AND FAMILY PLANNING PROJECT		APPENDIX ATTACHED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
3. RECIPIENT (specify) <input checked="" type="checkbox"/> COUNTRY Ghana <input type="checkbox"/> REGIONAL <input type="checkbox"/> INTERREGIONAL		2. PROJECT NO. (M.O. 1095.2) 641-11-580-055
4. LIFE OF PROJECT BEGINS FY 69 ENDS FY _____		5. SUBMISSION <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> REV. NO. 2 DATE 9/16/74 CONTR./WORK NO. art-697

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMODITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US (U.S. OWNED)		
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT	(2) COOP COUNTRY	(A) JOINT
1. PRIOR THRU ACTUAL FY	2105	1490	243	112	166	114	389	2105	243	384		1/
2. OPRN FY	75	986	713	72	44	41	131	78	986	72	161	\$ 0
<u>1/</u> 3. BUDGET FY	76	1024	674	62	53	71	58	239	877	62		147/167
<u>1/</u> 4. BUDGET +1 FY	77	962	661	60	12	18	42	247	810	60		152/173
<u>1/</u> 5. BUDGET +2 FY	78	890	661	54	--	--	27	202	838	54		52/59
6. BUDGET +3 FY	79	384	330	17	--	--	--	54	384	17		--
7. ALL SUBQ. FY												
<u>1/</u> 8. GRAND TOTAL	6351	4529	508	221	276	392	1209	6000			545	351/399

9. OTHER DONOR CONTRIBUTIONS *N/A* 1/ Other Costs includes dollar equiv. \$351 loc. currency reqd

(A) NAME OF DONOR 2/ Field Staff only. Does not include UCLA support staff (see p. 11)	(B) VALUE OF GOODS/SERVICES 3/ \$505 previously provided from PL 480 104(h) resources and not included in grand total of \$6,351 (see page 12)	(C) AMOUNT
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III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER MPN:GFlores/JBrylon	TITLE Asst. Health, Population and Nutrition Projects Officer	DATE 10-1-74
2. CLEARANCE OFFICER AD/P: JKeen	TITLE Asst. Director for Program	DATE

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL DIR: WNorth	Director, USAID/Ghana
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2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF	SIGNATURE	DATE

3. APPROVAL AAS OR OFFICE DIRECTORS SIGNATURE _____ DATE _____	4. APPROVAL A/AID (See M.O. 1025.1 VI C) SIGNATURE _____ DATE _____
TITLE _____	ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

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A. SECTOR GOAL: THE BROADER OBJECTIVE TO WHICH THIS PROJECT CONTRIBUTES

1. Goal Statement:

To improve family welfare through family planning and to slow significantly the rate of population growth in Ghana in order to enhance the capacity of the nation to provide for economic development and improved quality of life in Ghana.

Discussion:

This goal is a restatement of the objectives which were set out in the Ghana Government's Policy Paper, Population Planning for National Progress and Prosperity dated March 1969. The following quotes from the paper are pertinent to the goal statement.

"Unless birth rates can be brought down to parallel falling death rates, Ghana's population will climb at a rate dangerous to continuing prosperity, and the children of the next few generations will be born into a world where their very numbers may condemn them to life-long poverty."

"Although the major effects of rapid population growth will be mainly felt over the next 15 to 25 years, several aspects of the problem are of immediate concern. One is the adverse effect of high fertility on the health of mothers and children." "High fertility is not of itself the sole 'cause' of poor maternal and child health, maternal and child mortality, or of neglect or inability to care for children. But it ... contributes to the perpetuation and spread of undesirable health and welfare conditions."

"We (the Ghana Government) are now embarked on an ambitious programme of planning and development aimed at achieving progressively advancing levels of productivity and well being for our people. these objectives are threatened by the current rate of population growth...."

2. Measurements of Goal Achievement:

- a. Reduction of infant and maternal mortality by at least 10 percent by 1980.
- b. A continuing decline in the natural rate of population growth sufficient to achieve a reduction from the present estimated rate of 3.0% per annum to 1.7% by the year 2000.
- c. A reduction in the general fertility rate by 20% between 1975 and 1985.
- d. A 30% reduction by 1985 and a 50% reduction by 2000 in the perceived norm for completed family size.
- e. A decline in the age specific fertility rates of all fertile females and by not less than 15% by 1980 for those in the 20-30 age range.

3. Assumptions of Goal Achievement

- a. The Government of Ghana will continue to support the National Family Planning Program and will rapidly move toward the adoption of firm quantified population program goals consistent with its existing public policy statement which clearly links the population program to the achievement of social and economic development goals.
- b. Effective and accessible family planning service will increase acceptor rates and in turn reduce the rate of population growth.
- c. Demographic research and analysis in Ghana will close the gap between the need for and availability of data to accurately measure demographic trends by 1980.
- d. There will be intensified efforts to strengthen the management, improve the effectiveness and coverage of the health and family planning service delivery system in Ghana.
- e. The Ministry of Health, University of Ghana Medical School and the Ghana National Family Planning Program will coordinate family planning activities and agree on utilization of Danfa project recommendations, methodology, etc. for planning and implementation of family planning/rural health services.
- f. Sufficient funds and technical expertise will be available from domestic and international sources to carry out an effective national family planning program within a broad family health program.

B. PROJECT PURPOSE

1. Statement of Purpose

To provide the Government of Ghana alternative cost effective approaches to the provision of health and family planning services in rural Ghana.

Discussion

Annual progress reports and a comprehensive final report are to be presented for the review and use of Government of Ghana decision makers. These reports will document the costs and effectiveness of four replicable combinations of service inputs delivered in four separate rural areas of at least 10,000 population each. The four combinations of service inputs are:

- Area I Comprehensive health care, health education, family planning, and the equivalent of existing Ministry of Health provided services.
- Area II Health education, family planning, and existing Ministry of Health provided services.
- Area III Family planning and existing Ministry of Health provided services.

2. Conditions that will indicate Purpose has been Achieved; End of Project Status

- a. Explicit - An analysis of the comparative cost-effectiveness of the tested approaches to rural health and family planning services is presented to the Government of Ghana.
- b. Implicit - The research findings and recommendations are implemented by the Ghana National Family Planning Program (GNFPP) and Ministry of Health.

3. Means of Verification

- a. Project reports and data clearly demonstrate differential cost/effectiveness of various approaches and suggest applicability/suitability of each to differing conditions.
- b. Medical School and Ministry of Health fiscal and clinical records support indications and conclusions of project reports.
- c. By the time of completion of the project a variety of operational and concept improvements will have been installed as an integral part of national programs.
- d. Links between the research and operating institutions will have been forged and strengthened so that continued efforts to improve program effectiveness and reduce costs can be seen to be developing as derived from research results.

4. Assumptions for Achieving Purpose

- a. Sample geographic areas are reasonably representative of rural Ghana and all necessary and relevant information is being gathered.
- b. Sufficient budgetary resources and trained motivated personnel are available.
- c. It is possible, within the time period of the project, to gather and analyze data required to document the effectiveness and cost of the various service inputs.
- d. Instruments used to measure effectiveness and cost are sufficiently precise to generate accurate data hence of use to decision-makers in the Government of Ghana.
- e. Instruments of measurement will be able to differentiate between effects of project inputs and those of extraneous factors so that valid conclusions both on comparative cost/effectiveness and overall impact of health/family planning service inputs per se on community well being can be drawn.
- f. The Ghana Government is willing to continue to emphasize and implement improved family planning and health programs.

C. OUTPUTS

- a. Complete demographic analysis of project sample areas.
- b. Analysis of the relationships between health promoting factors, health status and the utilization of family planning services, with resultant changes in fertility rates.
- c. Analysis of Danfa Rural Health Center and satellite service operation.
- d. Cost effectiveness analysis of the various F. P. interventions being undertaken by the Project.
- e. Determination of relationship between socio-economic variables, the level of rural health and acceptance of family planning information.
- f. GOC Ministry of Health and GNPPP medical and para-medical personnel receive part of their training at Daufa.
- g. Comprehensive reports giving research findings and recommendations.

2. Output Indicators

- a. Demographic analysis made of all sample study areas (see work schedule page 36 for listing and sequence).
 - (1) Mapping of project area and numbering of houses (completed in October 1971).
 - (2) Household/longitudinal sample demographic survey - Identification of households and individuals in all four project areas.
 - (3) Annual updating of information - resurveys are planned for all remaining years of the project.
- b. Data available on health promoting factors, health status, family planning knowledge, attitudes and practices, and changes in fertility.
 - (1) Data on family planning acceptors - to be collected throughout life of project.
 - (2) Studies made through six research questionnaires administered to individuals in project area which are designed to provide information on a broad range of related subjects.
 - (3) Village Health Survey - Epidemiological Study to provide disease profile.
 - (4) Special Studies - to be made throughout life of project.

- c. Sound methodology of data collection for cost effectiveness determination. Schedule of costs and effectiveness of interventions together with comparisons between the various interventions.

Discussion:

Cost and effectiveness data will be collected and analyzed to show both the cost of each component of the health/family planning delivery system and the comparative effectiveness per unit of cost of the different approaches to family planning and rural health care delivery used in the project. In September 1971, a systems analyst assisted in improvements of the project accounting system for health delivery services at the Medical School, and returned during January-May 1972 to carry out a number of activities designed to insure that it would be possible to establish the costs of the various components of the system (i.e. MCH, health education, FP, etc.) as well as the costs of services provided by other organizations. This data collection system plus a number of special studies to be carried out will provide information on costs on a continuous basis throughout the life of the project. A paper describing this process will be available in December 1974. Effectiveness information will be collected primarily through the activities described under outputs **5^a** and **6**, described above.

- d. Analysis and interpretations of socio-economic variables.

Data collected and analyzed on the socio-economic variables affecting family planning and rural health. The study began in FY 1974 and will run through FY 1978 although some data was already available from earlier project activities. The factors to be studied have been identified and methods of collecting data agreed upon, as well as the methods of analysis which are to be used. Study will be carried out jointly by UCLA staff and the Institute of Statistical, Social and Economic Research (ISSER) at the University of Ghana, Legon.

- e. Professional counterparts/project staff/other personnel oriented and trained and integrated into COG Health/FP service delivery system.

- (1) Twenty-one participants trained in the United States in fields relevant to project -- eleven participants sent and nine have returned to Ghana by August 1974. Plans made for remaining participants. For timing and details see inputs section.
- (2) Training is carried on in the main by Ghanaian project staff, although the UCLA personnel are faculty members of the Medical School and as such participate in the teaching programs at both the Medical School and Danfa. They are

~~AID~~ called upon to assist in the CNFPP and Ministry of Health Training programs for para-medical personnel. Final year medical students are required to spend six weeks in the Danfa Project Area as part of their medical studies.

<u>Type</u>	Numbers (by year in which trained)								<u>Total</u>
	<u>70</u>	<u>71</u>	<u>72</u>	<u>74</u>	<u>75</u>	<u>76</u>	<u>77</u>	<u>78</u>	
Medical Students	28	50	60	60	60	60	60	60	498
Para-medical	65	100	100	100	100	100	100	100	865
Other (short term seminars/workshop for both medical and para-medical)	115	35	35	35	35	35	35	35	395

f. **Reports: Publications on research findings and final report.**

- (1) Material or information prepared by project which came about as a result of research or service requirements. These were not originally intended in the project design but can be used to improve action programs - continuous through life of project. Examples of these outputs are contained in technical annex A.
- (2) Intermittent and periodic reports giving interim analyses and tentative conclusions. In addition to the semi-annual and annual progress reports which have been prepared and submitted to AID, ten research papers prepared by project staff have been published as of August 1974. Seven more are in the process of publication and an additional seven papers will be submitted for publication within the near future. Eight larger papers have been completed and will be published as a Monograph Series. A further 37 papers are in preparation, and plans have been made for another nine topics to be covered in papers to be prepared in FY 1975 and FY 1976.
- (3) Comprehensive final report to be prepared and presented to the Ghana Government. The first draft is to be prepared and available at a conference scheduled for November 1978 with a final draft to be completed by February 1979.
- (4) Final conference held in November 1978 to disseminate research findings. Plans are being made to hold the conference as scheduled.

3. **Means of Verification**

- a. Project data reports.
- b. Numbers of medical and para-medical personnel trained.
- c. Medical School and Ministry of Health fiscal records.
- d. Danfa Health Center records.

4. Assumptions for Achieving Outputs

- a. AID funds available.
- b. GOG Budget for Medical School and University.
- c. Personnel assigned.
- d. Commodities available.
- e. Qualified Participants available for training.

D. INPUTS

1. U. S. Inputs

a. Institutional Development Agreement - University of California at Los Angeles (UCLA)

Field Staff

	Man-Months									Total
	FY 71	72	73	74	75	76	77	78	79	
Operations Research Specialist	12	12	12	12	12	12	12	12	8	104
Family Planning Physician	12	12	12	12	12	12	12	6	-	90
Epidemiologist	12	12	12	12	12	12	2	-	-	74
Health Educator	12	12	12	12	12	2	10	12	2	85
Systems Analyst	--	--	4	12	12	12	12	12	7	64
Administrative Assistant	--	12	12	12	12	12	12	12	7	91
	47	60	64	72	72	62	60	54	17	508

UCLA - Principal Support Staff 1/

	71	72	73	74	75	76	77	78	79
Project Co-Director		x	x	x	x	x	x	x	x
Assistant to Project Co-Director			x	x	x	x	x	x	x
Administrative Assistant		x	x	x	x	x	x	x	x
Medical Records Specialist	provided as required throughout life of project 1/								
Senior Records Analyst									
System Analyst									
Programmer									
Other Consultants									

1/ The staff, consultants and equipment shown are illustrative, and will be revised annually during contract negotiations.

2/ The increase to 17 vehicles will be achieved by a delay in handing over vehicles which have reached 40,000 miles and not through increased vehicle purchases.

Equipment - Major Items 1/

12 - Project vehicles (17 for a portion of FY 78 during period heavy field activity) 2/

- 1 - Manual mimeo machine
- 2 - Dictating machines
- 25 - IBM storage cabinets
- 2 22- Air conditioners for IBM storage
- 1 - Photocopy machine
- 1 - Tape drive for IBM computer

b. Other Local Costs	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	Total
	& prior (000)	(000)	(000)	(000)	(000)	(000)	(000)
(1) PL 480 3/104(h)	\$230	\$154	\$161				\$545
(2) Other 3/				\$167	\$172	\$59	\$399

The amounts shown above have been funded by USAID-owned 104(h) local currency through FY 1975. Funding of these project related costs is under negotiation for possible contribution through counterpart local currency, (generated by the Program Loan). For the purposes of the PROP, funding is assumed (see Block "h" on facesheet.

c. Participants Field	Num-	70	71	72	73	74	75	76	77	78	79
	ber										
Computer Programming	2	3	5								
Epidemiology	1		3								
Epidemiology (MPH)	3						10	23	6		
MCH & Population (MPH)	1						10	3			
Records and Reports Management (MS)	2		10	12	2			10	3		
Health Education & Social Welfare (BS and MS)	1			10	12	12	10				
Public Health Medicine- MCH/Nutrition (MPH)	2			10	3	10	6				
Cytotechnology	1			10	12	12					
Research Methodology	4				10		5	5			
Public Health Planning	1							10	3		
	21	3	18	52	42	31	41	71	18		

1/ The staff, consultants and equipment shown are illustrative, and will be revised annually during contract negotiations.

2/ The increase to 17 vehicles will be achieved by a delay in handing over vehicles which have reached 40,000 miles and not through increased vehicle purchases.

3/ Inflationary pressures may increase budget requirements as much as 50%.

9. GOC Inputs

a. Project Counterparts and Staff

Medical School 1/

	<u>Number</u>	<u>FY 71 to 73</u>	<u>74</u>	<u>75</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>
Danfa Health Center Staff	16	X	x	x	x	x	x	x
Project Co-Director	1	x	x	x	x	x	x	x
Project Field Coordinator	1	x	x	x	x	x	x	x
Epidemiologist	1	x	x	x	x	x	x	x
Two Health Education Teams	8 2/	x	x	x	x	x	3/	
OB/GY-Family Planning MD	1	x	x	x	x	x	x	
MCH - MD	1	x	x	x	x	x	x	
Pediatrics - MD	1	x	x	x	x	x	x	
Nutritionist	1	x	x	x	x	x	x	
Family Planning Team	3	x	x	x	x	x	3/	

University

Senior Statistician	1	x	x	x	x	x	x	
Supervision and guidance for records	3-5	x	x	x	x	x	x	

b. Operational Support

Office Space - Medical School and University
 Vehicles for service inputs
 Drivers for service and research inputs
 Fuel for service inputs
 Supplies and equipment for Danfa Project

c. Ministry of Health Services

In the research design of the project a major condition of the provision of the various inputs of service is that health services being provided elsewhere in Ghana are available in the Project Areas I, II, III, and IV.

Specifically the existing health facilities available are:

-
- 1/ It is expected the Medical School inputs will continue after the termination of the research described in this FROP.
 - 2/ 4 per team
 - 3/ Will continue working through first quarter FY 78

- (1) Danfa Rural Health Center - Service Area I.
- (2) Local Council Health Post at Amasaman - Area II.
- (3) Oboon Health Post - Area III.
- (4) Health Center at Asanankese - Western part of Area IV.

In general, existing Ministry of Health services differ from the comprehensive health care provided in Area I in that they are primarily focused on curative services. Emphasis in the comprehensive program is on preventive and promotive health care in addition to first level medical care.

d. Financial Support

The budget below estimates the Ghana Government financial contribution for the life of the Danfa Project. The amounts shown cover, for the most part, the inputs listed above. Other administrative and support activities provided by the Medical School in kind to the project on an ad-hoc basis are not included in this schedule.

Items (\$000)	FY 73 And Prior	FY 74	FY 75	FY 76 ^{2/}	FY 77 ^{2/}	FY 78 ^{2/}	FY 79* ^{2/}	Total
(1) Personnel and Supportive Services ^{1/}	371.0	81.0	115.0	126.5	139.2	153.1	122.3	1108.1
(2) Maintenance	120.0	40.0	40.0	42.0	44.1	46.3	32.4	364.8
(3) Transportation	60.0	20.0	32.4	35.6	39.2	43.1	31.6	261.9
Totals	551.0	141.0	187.4	204.1	222.5	242.5	186.3	1734.8

3. Discussion

The inputs detailed in 1 and 2 above will be utilized to provide the service components of the project and carry out the research necessary for the achievement of the project purpose. The research outputs have been outlined in Section C. above and will be discussed in detail in Section F. below. The following discussion describes the nature of the service inputs.

The service input methodology to be utilized during the life of the project can be illustrated as follows:

Area	Comprehensive Health Care	Health Education	Family Planning	Existing MOH Services
I	Yes	Yes	Yes	Yes (equivalent)
II	No	Yes	Yes	Yes
III	No	No	Yes	Yes
IV	No	No	No	Yes

* 8 month budget

^{1/} Includes initial capital expenditures for Danfa Center.

^{2/} Inflationary pressures may increase budget requirements as much as 30%.

Family Planning

Inputs are designed to provide motivational instruction on a group and individual basis about family planning and the various contraceptive methods to both men and women. Special studies are carried on to determine the most effective motivational techniques in the rural area. Contraceptive methods such as loops, pills, foam, and condoms are dispensed. In addition referrals for sterilization are made and advice is occasionally given on the rhythm method. Information and referral service is also provided for patients to whom infertility is a problem. Within the confines of the research design and based on constant review of past performance, program modifications are made in the attempt to maximize the acceptance of family planning within each of the three project areas. Follow-up services for acceptors include rebewals of pills, condoms and foam, treatment of complications, replacement or removal of loops, and contact of delinquents. These services are provided by a family planning team which consists of a nurse midwife, nurse assistant and a clerk.

Comparability of family planning inputs is insured by the following established criteria:

- Number of family planning clinics in each area.
- Number of clinic hours per month in each area.
- Number of family planning workers per month in each area.
- Per cent of fertile females directly exposed to the provision of family planning services each month.
- Geographical accessibility of services.
- Similarity of delinquent follow-up procedures and time spent in this activity.
- Quality of family planning workers in each area.

Replicability in terms of cost and manpower is being controlled by cost analysis of current family planning activities, comparing these costs with current and projected per capita and per acceptor National Family Planning expenditures.

Danfa Comprehensive Rural Health Center

Services include preventive and personal first level medical care (meaning the management by para-medical personnel of those illnesses predominantly found in the rural areas plus the ability to screen out those patients who require the attention of a visiting medical officer or hospital care). Promotive activities are also provided which encourage the patient to take action on his own initiative based upon health education, e.g. a nutrition demonstration. Emphasis is placed on a "family health" approach where MCH services are stressed (i.e. maternity, and post-natal care plus young child clinics, family planning, a nutrition program and school health). The MCH program is designed to attack the principal causes of maternal, infant and pre-school mortality in the area. In addition the center stresses on disease prevention, especially improvement of environmental sanitation and control of infectious diseases, health education, nutritional services and public health nursing and home visits.

Health Education

The health education inputs in Areas I and II are provided by two teams. Each team consists of four education assistants in community health practices emphasizing maternal and child health, sanitation, nutrition and family planning.

The health education teams examine each community's health practices and expressed needs, and tailor a program of health and family planning education specific to each village's requirements. Thus strategies will vary from one community to the next. For example, in the sophisticated community, family planning may be introduced in village committee meetings at which time village leaders might be recruited to motivate their followers to adopt positive attitudes toward spacing of births. In a less sophisticated community where family planning is not discussed openly, the health education assistants will initially focus on home visits and face-to-face encounters with those women and their families who would have the most to gain from controlling pregnancies. The same examples may be given for nutrition, sanitation and maternal and child health education. As receptivity to new ideas increases, the approach used in each community will change. This approach has been chosen based upon experience in studying behavior related to adoption of innovations.

The specific activities of the health education component include: health education at health care facilities, educational inputs at the satellite clinics in Area I and the Anasaman Health Post in Area II, and school and home visitations. Information is presented with film shows, discussions, audio-visual materials and through personal contact.

4. Means of Verification

- a. Project records and documentation.
- b. GOG Budgets

5. Assumptions for Providing Inputs

- a. Sufficient AID funds available
- b. Sufficient funds budgeted by the GOG to Medical School and University
- c. Personnel assigned to project on timely basis
- d. Commodities available
- e. Qualified participants available for training

E. RATIONALE

During the 1950's a substantial amount of demographic work was done in Ghana by Ghanaian and expatriate scholars which began to shed light on the demographic structure, migration patterns and rates of growth of the Ghanaian population. This work laid the groundwork for still further efforts in the 60's which served to heighten the consciousness of some Ghanaians to the problems which these patterns and trends forecast for

the future. Thus even before independence it had become apparent to some students of the problem that the promise of development after independence confronted a complex set of social as well as economic problems. Soon after independence the census of 1960 verified the high fertility rates prevailing in Ghana, the high proportion of dependent young people and the rapid rate of growth of population as well as a strong drift to the urban centers. In the wake of these findings many Ghanaian scholars in the fields of Economics and Sociology, Pediatrics, Demography, Nutrition and Maternal Welfare began to express increasing concern. Gradually, government leaders gave heed to the implications of the findings and projections of these scholarly works and a series of statements were issued by the government culminating in the "Declaration of Policy on Population and Family Planning" issued as a White Paper in 1969. Thereafter the government formally initiated a program reflecting the policy statement.

The main features of the policy enunciated by the government were as follows: that the rate of population growth in Ghana should be reduced, out of concern for its impact on social and economic progress family planning and child spacing should be encouraged as a contribution to slowing the population growth rate as well as to improving the well-being of individuals and families in Ghana; that the population problem is multi-dimensional and inter-disciplinary in nature and accordingly should be addressed in a fashion which takes account of the many facets of the problem.

As a result of this policy the Ghana National Family Planning Program which was developed was inter-ministerial in scope and the direction of the program was placed at a high level in the government structure. A coordinating mechanism in the form of a Secretariat was created to direct work through a variety of ministries, agencies and institutions of government as well as private organizations in Ghana.

The steady growth in consciousness of the intensity of the problem posed by various demographic trends in Ghana led to a concern among the leadership in the medical profession as to how the health system could best play its part in meeting the increasingly clear need to deal with the simultaneous requirement for improved health and reduced fertility among the rural population in Ghana. If the Health Services were to play their part adequately it seemed apparent that an improved understanding of the nature of the problem confronted both as regards its intensity and its social dimensions needed to be obtained. In addition there appeared to be a clear need to evolve new approaches which would improve the effectiveness of the delivery of health/family planning services in rural Ghana to meet the following conditions:

1. A widely dispersed low income rural population where transport and communications were limited.
2. A health infrastructure which delivers meaningful health/family planning services where medical and even para-medical personnel were extremely scarce

3. The need to hold down the demand for skilled personnel to levels which could be mobilized in Ghana while also keeping the cost per person served at the extremely low levels which now and for the foreseeable future would need to be adhered to if the bulk of the populace was to be served.

These general conditions are not unique to Ghana. But neither here nor in other parts of Africa had comprehensive analytical research been undertaken which was directed towards defining effective means of delivering health/family planning services. Empirical data with which precise benchmarks and targets could be defined are essentially lacking both for Ghana and for the rural African setting generally. Ghanaians therefore began to argue in the late 60's that a field test of a variety of health delivery patterns should be developed. This should provide Ghanaian program planners and managers concerned with these problems with a comprehensive set of findings which would shed significant light on the best means for achieving the objectives which were increasingly being defined in connection with Ghana's population and health problems.

In light of this increased concern in Ghana for field research to test alternative delivery systems, proposals were presented in 1969 for assistance in the design of a field research program specifically tailored to meeting Ghana's problems but generically also relevant to large parts of Africa with similar demographic, social, and economic environmental conditions. The logic of such an undertaking also appealed to AID because Ghana had already communicated a basic policy favoring a comprehensive attack on population problems and therefore was itself in need of such answers but also because Ghana provided a favorable environment for such a field research effort applicable in broad outline to Africa generally. The anticipated results of this project therefore should be of major significance both to Ghana and to many other countries possible even outside of Africa. They may also be integrated with and interpreted in the light of other similar or related experiments such as Sarangwal in India, the project being carried out by APHA for the Development and Evaluation of Integrated Delivery Services in Health, Nutrition and Family Planning (DESIDS), and the West African Regional Strengthening of Health Services.

Specifically, the hypotheses to be tested in the course of the Project are:

1. Comprehensive health care, as delivered by the Danfa Project, will reduce child morbidity and mortality rates.
2. Family planning services within a program of comprehensive health services and health education are more effective in reducing fertility rates than family planning services without these additional components.

3. Family planning services coupled with health education are more effective in reducing fertility rates than family planning services provided without health education.
4. The introduction of family planning services utilized by the Danfa Project will result in a greater reduction of fertility rates than that elicited by the family planning practices presently used by the population resident in the research area.
5. A significant relationship exists between improved rural health and the reduction of fertility rates.

The research findings will be presented in a manner which will permit the Ghana National Family Planning Program and the Ministry of Health to select the various service components most suited to their particular needs, resources and goals. For these agencies, the project will present an analysis of the various service components showing the cost-effectiveness of each input. It is important that the information presented be broken down in this manner for the following reasons:

1. One of the assumptions of the Project is that the Danfa area is representative of rural Ghana. This assumption is probably correct if it is viewed from the macro socio-economic perspective, i.e. if the rural conditions for all of Ghana were averaged it would probably be similar to the conditions of the Project's areas. But the assumption is probably not correct when applied to specific localities. For example, conditions in Northern Ghana obviously differ greatly from those of the research area. But by using the cost evaluations of various delivery inputs provided by the Danfa project, services can be tailored to the conditions of individual localities.
2. Although the research data generated will be focused on rural Ghana, it will be possible to utilize research findings for urban health delivery systems as well. For example, data should indicate the minimum population base required for specific service inputs. In a given rural situation the input might be judged to be not cost-effective but the opposite may be the case in an urban locale.
3. Conditions in rural areas are constantly changing, and inputs which were not optimal in terms of cost-effectiveness may well become optimal.

F. COURSE OF ACTION

1. Implementation Plan

a. Demographic Analysis

The region chosen for the study is divided into four culturally and

socially related areas with between 10,000 and 15,000 people in each area. In order to provide a first baseline against which all other data collected by the project can be evaluated, it was necessary to have a complete demographic analysis of all areas. Initially, the areas were mapped in detail, and the houses were numbered. Each household in the villages of the study area was identified and assigned a household number and each individual was assigned an identification number. Information for each individual was collected on: age, sex, marital status, intra-household relationship, ethnic grouping, religion, occupation, literacy, and level of education

Once each year, an enumeration team visits each village in the project area to update the file of persons, including the gathering of birth and death information. Previously unregistered persons and households are assigned identification numbers and interviewed. In addition their dates of arrival in the village and previous location are ascertained. For persons no longer residing in their original village, interviewers attempt to discover where they have gone. This information will be used in special studies of migration patterns and causes. Midway between annual censuses, each household is also visited by an interviewer to obtain additional birth and death information.

To increase the accuracy of data pertinent to birth, fertility and mortality rates, vital events registrars conduct continuous vital events registrations. Through FY 74 these vital events registrars were literate villagers who received a small monthly flat rate honorarium. Their activities were supervised by full-time project staff. Beginning in FY 1975, 17 vital events registrars have been employed and trained to undertake this task.

b. Analysis of the relationships between health promoting factors, health status, utilization of family planning services and changes in fertility rates

The sampling design used to choose the persons to be interviewed for the studies described below is explained in detail in Technical Annex B.

- (1) Family Planning Acceptors -- Data on family planning acceptors is collected continuously. Data recorded and analyzed includes, but is not necessarily limited to the following: age, parity, number of living children, interval since last pregnancy, interval between pregnancies, distance from family planning clinic, method accepted, duration of use of any one method, and reason for discontinuation.
- (2) Knowledge, Attitudes and Practices concerning family planning and maternal and child health, and an assessment of the health status of the population -- Data is collected through a series of inter-related studies. In order to provide longitudinal information, the studies will be made three times at approximately two and a half year intervals with the same sample population. The studies are:

- (a) Morbidity Survey - This survey consists of a series of questions about the health problems experienced by the respondent in the two weeks preceding the interview. The questions deal with the nature of the illness, its duration, resulting restrictions of normal activities, type of help sought, distance travelled and expenses incurred. This data will be used to determine levels of morbidity, patterns of health problems, modeling of utilization patterns, and estimation of the costs of illness.
- (b) Child Health Knowledge, Attitudes and Practices (KAP) Survey - This survey explores beliefs about the causes of childhood illnesses and adult responses to overt signs of illnesses in children. Information is also sought about beliefs and practices concerning child nutrition. Information generated will be related to actual child morbidity data in the construction of a model relating inputs and outputs of child health care. Intra-area contrasts will be made to determine if changes in child health care are attributable to project inputs or merely coincidental with the project.
- (c) Pre- and Post-natal Maternal Health Practices Survey - This survey elicits data on the woman's concept and practices in caring for themselves during and shortly after pregnancy. The target population of this survey is limited to women of child bearing age who have had at least one pregnancy.
- (d) Fertility Survey - This survey gathers data on the number of children born to the respondent, number of pregnancies, pregnancy spacing, outcome of pregnancies, and various categories of parental relationships. This data will be used to compute birth and fertility rate, fetal wastage, and pre-natal infant and child mortality rates. These will, in turn, be used in the estimation of the effectiveness of the project's maternal and child health, health education and family planning programs. Women interviewed are in the 15-64 age group.
- (e) Survey of Family Planning (KAP) - Female - The age group interviewed is the same as that for the fertility survey. This survey will probe information concerning the respondent's attitude toward family size, her knowledge of and attitude toward family planning techniques and methods. It also probes into the means by which family planning information is transmitted.
- (f) Survey of Family Planning (KAP) - Male - This is a counterpart of the study described above from the male viewpoint. The survey population is men in the age range 15-64.
- (3) Village Health Survey - This survey includes 3,600 men, women and children (approximately 600 in each of the four project areas). Each person is interviewed about recent illness, immunizations he received and visits he made to a clinic or hospital during the past year. Each house and compound in the 50 villages included in the survey is inspected for housing conditions, crowding, sanitation,

and number of domestic animals. An attempt is made to assess the economic status of each family. Each individual receives a complete physical examination by specialist physicians, including height and weight, eye check, blood pressure and laboratory tests. When this data is analyzed it will provide information on:

- (a) Specific rates for known medical problems such as measles, malaria, and malnutrition as well as heretofore unrecognized problems.
- (b) The impact of family size on the development, health and nutrition of children.
- (c) The effect of frequent pregnancies on the health of mothers.
- (d) A profile of large families and their health, relative economic status, education, living conditions, and use of health services.
- (e) The match between the patients' own syndromal descriptions to physician-diagnosed problems in order to facilitate interpretation of the Morbidity Survey (2(a) above).

To provide longitudinal information, the survey will be repeated approximately 2½ and 5 years after the initial survey.

- (4) Special Studies - During the life of the project, it is expected that a number of special studies will be undertaken. An analysis of the Knowledge, Attitudes and Practices related to family planning and midwifery techniques of traditional birth attendants and the effect of using traditional birth attendants in a comprehensive program of maternal child health and family planning services are examples of these studies. Special epidemiological studies will also be undertaken when unusual situations are brought to light by the village health survey or other project activities which indicate that more information is needed. Studies will also be undertaken on the basis of specific requests from the GNFPF, Ministry of Health and other concerned Ghanaian agencies.

c. Analysis of the Operation of the Danfa Rural Health Center

- (1) Functional Analysis of Danfa Health Center Organization - These studies were made using data obtained from Ministry of Health records and data collected in the first months after the SCIA team arrived, so an analysis of the work of the clinic would be available to indicate what changes needed to be made in its operation. The objectives of the study were to learn what the health problems were, what kind of patients were seeking treatment at the health center and where they came from. Studies were made of the tasks each health worker performed in order to provide a detailed job description for each position. This background information will be used to plan some re-organization of the center and set up an in-service training program. The time spent by patients waiting at the

clinic, in waiting there, and in actually receiving service was also studied.

- (2) Records and data system at Danfa - Each patient visit to the Danfa Center is recorded on standard Ministry of Health forms and on a Patient Encounter Card for electronic data processing. Visits are divided into four basic service categories: general adult, general child, maternity, and family planning. Data is collected on the nature of the problem (i.e. diagnosis), type of service given (e.g. medication, dressing, advice, etc.), and whether the patient was seen at the main clinic, one of the satellites, or at home. These data are utilized in the functional analyses of the Danfa Health Center and its satellites, in cost-effectiveness studies, in studies of the complete health care system in effect in the area, and in tandem with the morbidity surveys to construct a profile of the health problems in the area. These data are collected continuously. Patients who are registered in Area I are provided a special identification card in order to speed the pulling of their household file which contains their personal records (IDM cards pre-printed with their name and identification numbers are maintained in the file). Patients who reside in the area, but who, for some reason, do not have their identification card with them can be identified by information in the master register maintained at the clinic and taken out to the satellites. Patients who claim to live in the villages within the research area, but who have not been registered will be registered and will be interviewed later in order to complete their demographic file. A separate list (with distinctive identification numbers) of patients who live outside Area I is maintained. They are accorded the same service as other patients, but their data will not be incorporated into most of the project studies.

In addition to a complete family planning consultation record, a data card is completed for all patients receiving such service at the Danfa Center or its satellites, or from members of the project family planning teams in any area. The consultee is identified and the nature of the service given (e.g., advice, loop insertion, return check, etc.), number of this consultation (i.e., first, second, etc.), stated reasons for desiring consultation and disposition of the case is recorded. Demographic and socio-economic data are obtained; in the case of persons already registered by the project, these data serve as additional checks and to update the project file.

All personnel of the project who are in any way engaged in the rendering of service - not only directly to patients but also in such activities as health education and

family planning fill out a daily administrative card. On this they estimate how their time is allocated (in blocks of 1/10 hours) among their various duties. These include various categories of patient care, education, family planning, and travel. These data are vital to the functional analysis of the Danfa Center and its satellites, of the health education and family planning programs, and to the cost analysis of all project activities.

In addition analysis is conducted of the Danfa operation to determine cost-effectiveness under differing staffing patterns. It should be noted that all staffing patterns used are within the capacity of the Ministry of Health and GNPPF to duplicate elsewhere in the country.

Records of expenditures relating to the Danfa Rural Health Center and its satellites are kept by the Ghana Medical School. These, plus personnel records of the Ministry of Health, are used in preparing the cost analysis of the Center and satellite services.

- (3) Comparative study of the health center and satellite services -- The preliminary studies mentioned in (1) above indicated that patients would ordinarily not come further than four miles for treatment. If services in Area I were to be comprehensive, satellites had to be developed. Accordingly, staff from the Danfa Center travel out to villages in our area several days a week. The clinics are held in facilities provided by the village. The cost of staff, supplies, petrol and maintenance of vehicles for the satellite services are kept separately. Effectiveness will be measured by the number of people seen per session, the nature of complaints seen at each place, effectiveness in reaching specific target groups, and outreach in terms of the average distance travelled for patients using each facility. The study will show whether a more cost effective service can be provided with less investment in buildings through the use of mobile teams operating from a base which provides back up services such as laboratories and storage, referral services, etc.

d. Cost-Effectiveness Analysis

To measure cost, all input resources are assigned a value in cedis. These resources include personnel, material, vehicles, and facilities, all prorated according to the proportion of each consumed by the specific program being analyzed. To facilitate assessment and proration of these costs, a special accounting system for Project-related expenses has been installed at the Ghana Medical School and an electronically processed administrative record system is being used for Project personnel.

Effectiveness is measured by means of both interim process indices and final outcome criteria. For example, in the family planning program the process measurements are number of new acceptors, continuation rate, proportion of women of reproductive age using family planning, and ratio of annual gain in acceptors to increase in number of women of reproductive age. Outcome measurements are changes in the general fertility rate and age-specific birth rates. In the health care program, interim effectiveness measurements are number of general patient encounters, number of patients seen in specific high-risk groups, and number of people exposed to the Project's disease-avoidance and health-maintenance programs (e.g. health education, nutrition education, pre- and post-natal clinics, immunization). Outcome measurements are changes in specific, high-impact morbidity and mortality rates.

Once the cost and effectiveness data are collected, they will be analyzed to show both the cost of each unit of effectiveness, and also the comparative effectiveness per unit of cost of the several different approaches to family planning and rural health care delivery used in the Project. This analysis will enable Government of Ghana decision makers, applying boundary criteria (e.g. maximum acceptable expenditure levels and minimum acceptable declines in fertility rates) to select programs or parts of program which can most reasonably be expected to meet their needs in terms of results and constraints on financial and personnel resources.

e. Determination of the relationships between socio-economic variables and rural health and family planning

The socio-economic studies are designed to examine in a systematic way how social and economic factors, largely exogenous to Danfa Project activities, interact with Project inputs to affect the impact of the Project's service programs in health and family planning. In addition, these studies are expected to provide information on the influence of these factors on health status and the utilization of health and family planning services in the absence of one or more elements of the Project service programs.

Factors to be considered in the social category include education, religion, tribe, character of the village, aspirations for children, group norms concerning children, and fertility experience of the individual, the family, and the village, including fetal and child loss. Economic factors to be considered at the individual and household level include accumulated material goods and aspirations in this direction, present earnings and earning potential of men, women, and children in the household, actual and perceived cost of the marginal child, and perception of the link between fertility and household economy. At the village-level information will be collected on such matters as roads, water supplies, social amenities, communications to the outside, and the nature of farming (cash or subsistence). Most of these social and economic factors are actually groups of several variables which will be considered separately when this would enhance the explanatory power of the models employed. Data on socio-economic variables will be obtained by survey methods, most of which will be appended to previously planned project field

utilization are available from on-going Danfa Project research. The data will be analyzed by a combination of multi-variate analysis and hypothesis-testing with the aim of constructing models which will explain in both qualitative and quantitative terms how socio-economic and systems (i.e. characteristics of the health care and family planning delivery systems) factors interact with one another to shape outcomes in terms of health status and fertility. While it is possible to learn a great deal about the probable effects of change in levels of socio-economic factors on the impact of Health and family planning services from a single cross-sectional analysis, in view of the fact that nearly all the "development" costs of these socio-economic studies will be sunk into the first study, it is anticipated that similar data will be gathered one more time. This will be in conjunction with the third and final cycle of the longitudinal and village health surveys and the final family planning acceptor follow-up study.

Socio-economic studies will be carried out by means of a subcontracting arrangement with ISSER. ISSER is providing a senior faculty economist, one graduate student at the Ph.D. level, and two at the M.Sc. level. The study is being funded from the local currency budget administered by the Medical School, and is budgeted at approximately \$13,000 (\$11,310) per annum. The salary of the senior economist is paid for by ISSER through an arrangement with the Ford Foundation. Although detailed design and operational responsibility for these socio-economic studies is in the hands of the ISSER group, ultimate responsibility for their direction and scope remains in the domain of Danfa Project Staff.

2. Narrative Statement

This project evolved largely in Ghana. Ghanaians are primarily responsible for its direction, and it is receiving a great deal of Ghanaian support in terms of fiscal and manpower resources. UCLA provides professional personnel in Ghana and backup support on their campus in Los Angeles to assist the Medical School of the University of Ghana to carry out the project. This assistance was initially financed through a contract between UCLA and AID. The contract has now been replaced by an Institutional Development Agreement which emphasizes the direct relationship between UCLA and the Medical School and minimizes AID involvement in the management of the project.

The Ghanaians are responsible mainly for the service and teaching activities of the project, while the UCLA group has as its primary responsibility the project's research aspects although they do participate in teaching activities at the Medical School and at the Danfa Center. While the UCLA team members do not become involved in the rendering of direct service to patients, Ghanaian staff do provide considerable advisory input to the research side of the project. The Ministry of Health cooperates with the Medical School by making available most of the personnel used to provide the service inputs at the Danfa Clinic and also allocates to the Danfa Clinic the supplies and equipment normally provided to Government Health Centers. UCLA headquarters

supplies, personnel facilities and technical expertise backstopping not available in the field and are particularly instrumental in the design and operation of the records and data system. The Institute of Statistical, Social and Economic Research of the University of Ghana, Legon has provided assistance in the processing of data and will play a key role in the socio-economic research which is to begin in FY 1974.

The purpose of a project of this kind ultimately is to help improve the quality of life of people on a lasting basis. Therefore, the ultimate success of the project hinges on the ability of those involved to help bring about lasting, constructive changes in the country served and indirectly, perhaps in other countries as well. This calls not only for a good design, but also for a style of operation which makes it clear this is primarily an endeavor of the host country. Towards this end a number of critical features were built into the organizational and functional structure of the project from its inception:

- (a) It was planned and developed in Ghana;
- (b) The Ghana Medical School has and controls, an independent project budget and hires Ghanaian staff under standard Ghanaian conditions of service.
- (c) Ghana and UCLA each appoints a Project Co-Director at the field operating level each appoints a field coordinator. In each case, the Ghanaian partner is tacitly recognized as the senior partner.
- (d) Research and service activities are closely coordinated every step of the way and major attention is given to information transfer and institution building at every opportunity.

The project should provide considerable information on the costs connected with the achievement of the sector goal. For example, with respect to slowing the rate of population growth, the project should provide an answer to a question which can be phrased: given a fixed number of dollars, can the Ghana Government get the maximum return in terms of improved family planning services for its investment? The same applies to an investment in family welfare. However, if the project is to have an impact on the sector goal, the research findings must be implemented by the Ministry of Health and the GNFPP.

On the formal and institutional side, the project's findings and recommendations would feed into the Ministry of Health and the GNFPP's research and planning units for examination, field testing and eventual adoption as standard operating procedure. At present, the research and planning function is divided between several offices in both the GNFPP and the Ministry of Health. The Evaluation and Research Unit of the Family Planning Secretariat is responsible for evaluating ongoing programs to identify areas where program efficiency can be improved as well as coordinating basic non-medical and social science research required for sound planning efficiency. Daily project information is made available to this unit, and to the Executive Director.

The Ministry of Health has recognized its planning and evaluation needs, and has requested assistance from UNICEF in establishing a Planning Unit. In response to the Ministry's request, USAID has begun initial implementation of the Rural Health Services Project (068). USAID currently envisions this Project will serve to address the planning/requirements ^{AND MONITORING} within the Ministry and hence provide greater assurance that Danfa Project research will be utilized.

Although it cannot be a responsibility of the Danfa Project to ensure that research findings are implemented, there will be various project activities designed to encourage the GNFSP and the Ministry of Health to utilize the research data. During the life of the Project, specific recommendations based upon the research findings will be presented on an on-going basis to the concerned Ghana Government agencies. This should facilitate early implementation of the research findings and at the same time avoid the problems inherent with the presentation of a massive report during the final days of the Project. In addition, various presentations of specific project findings will be made in a graphic manner to Ghana Government personnel. The annual Project review meetings also have, and will be expected in the future, to provide an excellent forum for the presentation of research findings to an audience representing the many concerned Ghana Government agencies.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK MATRIX

Project Title & Number: Danfa Rural Health and Family Planning -
641-11-580-055

1. Life of Project:
From FY 69 to FY 79
2. Total U.S. Funding:
\$6.9 million + \$0.8 million 104(h) & other
3. Date Prepared:
September 16, 1974

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	IMPORTANT ASSUMPTIONS
<p>1. <u>Sector Goal:</u> (the broader objectives to which this project contributes).</p> <p>To improve Family Welfare through Family Planning and to slow significantly the rate of population growth in Ghana in order to enhance the capacity of the nation to provide for economic development and improve quality of life in Ghana.</p>	<p>A.2. <u>Measures of Goal Achievement:</u></p> <ol style="list-style-type: none"> a. Reduction of infant and maternal mortality by at least 10 percent by 1980. b. A continuing decline in the natural rate of population growth sufficient to achieve a reduction from the present estimated rate of 3.0% per annum to 1.7% by the year 2000. c. A reduction in the general fertility rate by 20% between 1975 and 1985. d. A 30% reduction by 1985 and a 50% reduction by 2000 in the perceived norm for completed family size. e. A decline in the age specific fertility rates of all fertile females and by not less than 15% by 1980 or those in the 20-30 age range. 	<p>A.3. <u>Assumptions for achieving goals:</u></p> <ol style="list-style-type: none"> a. The Government of Ghana will continue to support the National Family Planning Program and will rapidly move toward the adoption of firm quantified population program goals consistent with its existing public policy statements which clearly link the population program to the achievement of social and economic development goals. b. Effective and accessible family planning services will increase acceptor rates and in turn reduce the rate of population growth. c. Demographic research and analysis in Ghana will tie the gap between the need and availability of data to measure accurately demographic trends by 1980.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK MATRIX - (cont'd)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	IMPORTANT ASSUMPTIONS
<p><u>Sector Goal</u> (cont'd)</p>		<p>d. There will be intensified efforts to strengthen the management, improve the effectiveness, and rapidly increase the coverage of the health and family planning service delivery system in Ghana.</p> <p>e. The Min. of Health, Univ. of Ghana Medical School, and the GNEPP will coordinate Family Planning activities and agree on utilization of Danfa project recommendations methodology, etc. for planning and implementation of family planning/Rural Health Services.</p> <p>f. Sufficient funds and technical expertise will be available from domestic and international sources to carry out an effective national family planning program within a broad family health program.</p>
<p><u>Project Purpose:</u> Provide the Government of Ghana alternative cost effective approaches to the provision of health and family planning services in rural Ghana</p>	<p>B.2. <u>End of Project Status:</u></p> <p>a. <u>Explicit</u> - An analysis of the comparative cost-effectiveness of the tested approaches to rural health and family planning services is presented to the Government of Ghana,</p> <p>b. <u>Implicit</u>- The research findings and recommendations are implemented by the Ghana National Family Planning Program (GNFPP) and Ministry of Health.</p>	<p>B 3. <u>Assumptions for Achieving Purposes:</u></p> <p>a. Sample geographic areas are reasonably representative of rural Ghana and all necessary and relevant information is being gathered.</p> <p>b. Sufficient budgetary resources and trained motivated personnel are available to carry out the research.</p>

PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK MATRIX - (cont'd)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	IMPORTANT ASSUMPTIONS
<p>1. <u>Project Purpose</u> (cont'd)</p>		<p>c. It is possible, within the time period of the project, to gather and analyze data required to document the effectiveness and cost of the various service inputs</p> <p>d. Instruments used to measure effectiveness and cost are sufficiently precise to generate accurate data hence of use to decision-makers in the Government of Ghana.</p> <p>e. Instruments of measurement will be able to differentiate between effects of project inputs and those of extraneous factors to make valid conclusions both on comparative cost/effectiveness and overall impact of health/family planning service inputs <u>per se</u> on community well-being.</p> <p>f. The Ghana Government is willing to continue to emphasize and implement improved family planning and health programs.</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK MATRIX - (cont'd)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	IMPORTANT ASSUMPTIONS
<p><u>Outputs:</u> Complete demographic analysis of project sample areas. Analysis of the relationships between health promoting factors, health status and the utilization of family planning services, with resultant changes in fertility rates. Cost effectiveness analysis of the various F.P. interventions being undertaken by the project.</p> <p>Determination of relationship between socio-economic variable, the level of rural health and acceptance of family planning information and services. COH, MOH and CNFPP medical and paramedical personnel receive part of their training at Danfa. Comprehensive reports giving research findings and recommendations.</p>	<p><u>C.2. Output Indicators:</u></p> <ol style="list-style-type: none"> a. Demographic analysis made of all sample study areas. b. Data available on health promoting factors, health status, Family Planning knowledge, Attitude and practices and changes in fertility. c. Sound methodology of data collection for cost effectiveness determination. Schedule of costs of delivery service plus support requirements. d. Analysis and interpretation of socio-economic variables. e. Professional counterparts, project staff and other support personnel oriented and trained and integrated into COH Health and family planning service delivery system. f. Reports: Publications on research findings and final report. 	<p><u>C.3. Assumptions for Achieving Outputs</u></p> <ol style="list-style-type: none"> a. High degree of cooperation/acceptance by the sample study population with Project personnel, and. b. High degree of cooperation/assistance by University of Ghana Medical School. c. Personnel motivated toward meticulous and objective analysis of resulting operational research and their continuity of employment with the project is sufficient to permit uninterrupted flow of data delay or errors.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK MATRIX - (cont'd)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLY INDICATORS	IMPORTANT ASSUMPTIONS
<p>D.1. <u>Inputs:</u> U.S. a. IDA providing field staff, consultants, equipment and supplies, and training. b. Local Currency Funding 104(h) and other. GOG (MOH, Medical School, University) a. Counterparts and Staff b. Training c. Operation Support - facilities, equipment and supplies. d. Financial Support</p>	<p>D.2. <u>Budget:</u> U.S. (\$6.0 Million and \$821,000 local currency) a. Expatriate Staff of 6 (508 mm); vehicles, data processing equipment, records equipment, etc. (see detailed listing in PROP Narrative); 276 mm of academic training; Local Cost Funding \$944,000. b. Medical students/paramedical and other personnel oriented and trained (1,750) and integrated into GOG Health/F.P. service delivery system. c. Office space, vehicle and maintenance, supply and equipment (see detailed listing in PROP Narrative). d. Budget for personnel and supportive services, maintenance, transportation plus other "in kind" contributions</p>	<p>D.3. <u>Assumptions for providing inputs:</u> a. AID funds available b. GOG Budget for Medical School and University c. Personnel assigned d. Commodities available e. Qualified Participants available for training.</p>

TECHNICAL ANNEX A

The Project outputs described below are examples of developments and recommendations which are already being utilized by the Danfa Project to improve its programs, and which could also be used now or in the near future by Ghana Government agencies such as the Ministry of Health and the GNFPP in their own programs.

The drug pharmacopeia and dispensing system at the Danfa clinic was modified based upon the disease pattern observed, the level of therapeutic training of the center's paramedical staff, and data on the cost and availability in Ghana of one drug as against a substitute or equally usable drug. This has resulted in the reduction in the stock carried at the dispensary from 140 drugs and vaccines to 60. Drugs which are most often prescribed are also pre-packaged to cut down on patient waiting time for prescriptions which was discovered to average a total of 43 minutes per patient.

A clinic records system using automatic data processing has been developed at the Danfa Clinic to serve the research requirements of the project. A simplified version of the system could be employed on a national basis. The advantages would be fast accurate reporting of health statistics and the provision of family planning and morbidity information on an ongoing basis, broken down in the various categories which the GNFPP and the Ministry of Health could most effectively utilize.

Job descriptions have been prepared for the Danfa Center Staff, and the Family Planning and Health Education teams. At present, the Ministry of Health and the GNFPP apparently do not have complete sets of such descriptions for employees in these categories. The job descriptions for the Danfa employees have permitted the development of methods to evaluate their performance. Considerable effort has also been spent in developing training procedures for middle management personnel. In addition, the project has shown that it is feasible to use health personnel with lower levels of education than normally thought possible for the job through the use made of middle school leavers in the family planning and health education aspects of the project. All these findings and methods could assist the Ghana Government agencies to improve their personnel management systems and facilitate the expansion of the health worker labor force at minimal cost.

Timed patient flow studies were made at the Danfa Clinic to show how each patient's clinic time was spent, as well as the number of patients seen by each health worker. This information was used to reduce unnecessary patient waiting time and improve the services offered. The Prince of Lieke Lomase Hospital in Accra is interested in conducting a similar study and the Ministry of Health could also use the techniques to carry out studies at other hospitals, health centers and posts.

In the health education area several useful tools have been developed. Among them are a syllabus for training health education assistants and the preparation of a library of field-tested audio-visual materials. Survey forms have also been developed to indicate individual and social behavioral patterns leading to health problems in each village surveyed and to measure the success of the health education teams in influencing behavior to solve these problems.

TECHNICAL ANNEX A (continued)

The Project's research activities in obtaining household census information, re-search questionnaire sample survey data, vital events registration, and village and household health status information have involved considerable experimentation, logistical trials and innovation. As a result field tested survey methods have evolved which can be adopted by other agencies concerned with gathering demographic, health, and sociological information.

The Dnafa Project recognized that the traditional birth attendants (TBAs) could play a crucial role in the improvement of maternal and child health in the project area, as 75 per cent of the deliveries in Ghana were handled by TBAs. Accordingly, a survey was carried out in the villages with the support of chiefs and village elders, first to identify and enumerate the TBAs, and secondly to administer questionnaires to them to ascertain their knowledge, attitudes and practices on maternal and child health and family planning. Information was also obtained on the interest of the TBAs in participating in a training program. The TBAs were told that the training was not to be merely for them. They were asked to absorb what knowledge they felt could be useful in their work, and also to be willing to provide information on what they knew and practiced. The training program which was devised involved lessons in the registration of births; personal hygiene, ante-natal care and disorders in pregnancy; obstetrical practices; and education on family planning, including its objectives, demonstration of the various methods of contraception, and information on where to receive family planning services. The training program for the first group of 16 TBAs has been completed, and a graduation ceremony was held to highlight their achievement. They were presented with certificates and kits which contained items which could be used to perform domiciliary deliveries in a hygienic way. It was emphasized at the graduation that this was not the end but the real beginning of the program as the follow up and evaluation stages would show the results. It is intended to make periodic visits to the TBAs to see if they are practicing what they have been taught, to examine their registers of births, and to replenish their kits. The Ministry of Health has been making its own plans for training TBAs to help with ESB programs. The Deputy Director of Medical Services has stated that the Dnafa program was a model and a pace-setter, which would help in the plans for an extension to the rest of the country. The Executive Director of the GMPP has also indicated that the program was in consonance with the plans of the government and those of the GMPP.

TECHNICAL ANNEX B**I. Sampling Frame for studies of the relationships between health promoting factors, health status, utilization of family planning services and changes in fertility rates.**

The sampling frame for six surveys (Morbidity; Fertility; Maternal Health Practices; Child Health Practices; Family Planning Knowledge, Attitudes and Practices; Male; and Family Planning Knowledge, Attitudes and Practices, Female) is designed to use the individual respondent as the sampling unit while simultaneously maintaining the number of household linkages in the sample between various survey categories. The technique is essentially one of randomized cluster sampling on households. Samples are stratified by village size (in terms of number of households) and household size. For stratification, village size is classified in terms of "large" and "small" on the basis of the number of households they contain. Approximately 80 per cent of the villages have fewer than 60 households. Thus 60 households per village has been established as the line of demarcation; villages containing 59 or fewer households being considered "small" and those containing 60 or more "large".

Baseline data indicate that, excluding one-person households, the median size of household is slightly more than six persons. A "small" household is thus defined as one containing from 2-6 persons and a "large" household as seven or over.

The sample selection for each area, thus is a straight-forward four-cell design as shown in figure 1. The sampling fractions, f_i , shown in each cell follow from the 50/20 distribution of village size and 50/50 distribution of household size. Selection of actual samples of households in each area will be done by listing all eligible household numbers (i.e., those which contain at least one fertile female) in each cell - obviously a machine task - and then having the computer, by means of a random number generator, recompile them in random order within each cell. This, then, becomes the order in which households are selected for inclusion in the samples.

Figure 1Design for Sample Selection
Village Size

	60	60+	
Household 2-6 Size	I $f_I = 40$	II $f_{II} = 10$	f_i = cell sampling fraction
7+	IV $f_{IV} = 40$	III $f_{III} = 10$	

For the basic longitudinal studies of morbidity, fertility, maternal health, child health and family planning KAP, the initial samples will contain some 500 households in each area. It is anticipated that over the course of five years there may be as much as a 50 percent attrition rate, although a lower figure, of course, is desired. On the basis of preliminary baseline data, 500 households are expected to yield more than 2,000 respondents to the morbidity survey, well over 500 respondents to the Fertility, Maternal Health and Female-KAP surveys and at least 500 for the Child Health Survey. The male KAP survey population will be enlarged, if need be, once an actual sample is drawn and a determination made of how many eligible men it includes.

II. Sampling Frame for Village Health Survey - The sampling frame is based on the annual project household registration census. A list of villages is prepared for each of the four research areas. Because larger communities are characterized by more physical amenities, better communications, and higher per capita income, two categories of villages are used. Villages with 400 and above residents are classified as "large" and communities with 50-399 persons are classified as "small". A geographic cluster of 20-40 houses is then chosen and numbers assigned to clusters for large and small villages. A random selection of five clusters for each project area is then drawn. The 20 village clusters contain about 4,000 persons, roughly 8 percent of the total Danfa Project population of 50,000 people.

TABLE I (continued)

JOINT PROJECT IMPLEMENTATION PLAN PART I - WORK SCHEDULE		1. COOPERATING COUNTRY	2. PROJECT TITLE								3. PROJECT NUMBER	4. DATE (Month, Day, Year)			
RESPONSIBLE PROJECT COORDINATOR		5. RESPONSIBLE COOPERATING COUNTRY AGENCY	7. COOPERATING SPONSOR								<input type="checkbox"/> DRAFT <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> REVISION NO. 2				
Health, Population and Nutrition		University of Ghana Medical School	GOG												
0.	DESCRIPTION OF MAJOR ACTIONS OR STEPS	TIME SPAN													
		FY-70	FY-71	FY-72	FY-73	FY-74	FY-75	FY-76	FY-77	FY-78	FY-79				
3.	(1) Survey into Malaria Parasitemia Rates (2) Malaria Prophylaxis Programme (Continuing)				(1) X	(2) X									
9.	Household Health-Related Behaviour Survey, 5 rounds Area I-II (Incl. Pre test)				X	X	X	X	X	X	X	X	X	X	
0.	Medical Student Clerkship at Danfa	X	X	X	X	X	X	X	X	X	X	X	X	X	
1.	Guinea Worm Survey					M									
2.	Polio Survey					X									
3.	Introduction of Mass Immunization Program (Area I)						M								
4.	Close down of Research FP/Health Education & UCLA Service input											M			
5.	Final ADP of Research Data (Accra)												X	X	X
6.	Final ADP of Research Data (LA)													X	X
7.	Final Analysis ADP Research Data (Accra/LA)													X	X
8.	Report Preparation for Final Project Review Meeting													X	X
9.	Final Project Review													X	X
0.	Close down of All UCLA Project Activities													X	X
1.	Final Report													X	X
	* Major Surveys													X	X
	Other Major Events:													X	X
2.	PROP Submission and Updating	X						M							
3.	Project Appraisal (PAR)				X			M							
4.	UCLA Contract Converted to IDA				X			M							

DATA PROJECT EXPENDITURE REQUIREMENTS
(5000)

	All Prior	FY 71	FY 72	FY 73	FY 74	FY 75 ^{2/}	FY 76	FY 77	FY 78	FY 79	10/
Pre-Project Feasibility Study	34										
Project Costs											
1. Personnel Costs											
a. Salaries											
American Staff	--	145	158	235	247	348	258	326	329	188	1000
Overseas Staff	--	---	---	---	15 ^{2/}	7	6	7	7	5	---
		<u>145</u>	<u>158</u>	<u>235</u>	<u>262</u>	<u>355</u>	<u>264</u>	<u>333</u>	<u>336</u>	<u>193</u>	<u>1000</u>
b. Allowances	--	21	25	41	43	58	41	54	48	17	---
c. Travel and Transportation	--	33	32	71	30	124	104	111	104	61	---
d. Overhead	--	48	52	79	90	141	142	135	142	67	---
2. Equipment	--	14	11	40	29	151	58	42	21	---	---
3. Participants ^{2/}	10	11	25	45	20	64	53	12	---	---	22
4. Other Direct	--	81	53	131	113	78	42	45	132	50	---
Total	34	354	427	426	553	686	507	575	608	301	1000
Cumulative Total		399	826	1252	1805	3091	3598	4173	4781	5082	6082
Local Currency 10-(11)				\$ 230 ^{2/}	\$ 154	\$ 161	\$ 167 ^{2/}	\$ 173 ^{2/}	\$ 149 ^{2/}		
(Dollar Equivalent FY 75 - 79)							(\$ 147)	(\$ 152)	(\$ 52)		

Actual figures are provided through FY 74 and projections for FY 75 - 79.

All expenditures of local staff for the period FY 71 - FY 74 are shown as FY 74 expenditures.

Expenditures on participants were funded directly by AID in FY 70 - FY 73, partially by AID and by the UCLA IDA in FY 74 and completely through the IDA in FY 75 - 79.

The FY 75 figures include projected requirements plus unexpended encumbrances from FY 74.

FY 70 and prior years

Local currency required for remaining years previously committed under IDA (if funds are exhausted \$1.00 = \$1.25 Estimated Local Currency required for life of project 1964 (\$821)